HYPERGOL MAINTENANCE FACILITY NORTH
SWMU 090
AIR SPARGE SYSTEM CONSTRUCTION COMPLETION AND PERFORMANCE MONITORING REPORT
KENNEDY SPACE CENTER, FLORIDA

Prepared for:

National Aeronautics and Space Administration
Kennedy Space Center, Florida

March 2022
Revision 0

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PROFESSIONAL ENGINEER CERTIFICATION

This Air Sparge System Construction Completion and Performance Monitoring Report (CC-PMR) for the Hypergol Maintenance Facility North (Solid Waste Management Unit 090) at Kennedy Space Center, Florida, dated March 2022, has been prepared by or under the responsible supervision, direction, or control of the Florida-licensed professional engineer whose signature and seal appear below. This document and the work described herein complies with standard professional practices and requirements of Chapter 62-780, Florida Administrative Code (F.A.C) and other rules of the Florida Department of Environmental Protection according to Rule 62-780.400(1), F.A.C.

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ABBREVIATIONS AND ACRONYMS

ACGIH	American Conference of Governmental Industrial Hygienists
ADP	Advance Data Package
AS	Air Sparge
ASTM	American Society of Testing and Materials
bls	below land surface
CC-PMR	Construction Completion and Performance Monitoring Report
cDCE	cis-1,2-Dichloroethene
cfm	cubic feet per minute
CMS	Corrective Measures Study
COC	Contaminant of Concern
CVOC	Chlorinated Volatile Organic Compound
DNAPL	Dense Non-Aqueous Phase Liquid
DO	Dissolved Oxygen
DPT	Direct Push Technology
EZVI	Emulsified Zero-Valent Iron
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
ft/day	feet per day
ft/yr	feet per year
GCTL	Groundwater Cleanup Target Level
GPR	Ground Penetrating Radar
HCP	High Concentration Plume
HDPE	High-Density Polyethylene
HMFN	Hypergol Maintenance Facility North
HMI	Human-Machine Interface
HMP	Hypergol Module Processing
HS1	Hot Spot 1
HS2	Hot Spot 2

ACRONYMS AND ABBREVIATIONS (CONTINUED)

I.D.	Inside Diameter
IDIQ	Indefinite Delivery Indefinite Quantity
IDW	Investigation-Derived Waste
IGM	Interim Groundwater Monitoring
IM	Interim Measure
IMWP	Interim Measures Work Plan
IWP	Implementation Work Plan
KSC	Kennedy Space Center
KSCRT	Kennedy Space Center Remediation Team
lbs	pounds
LCP	Low Concentration Plume
LDA	Large Diameter Auger
LTM	Long Term Monitoring
mg/L	milligrams per liter
MNA	Monitored Natural Attenuation
mV	millivolt
NAD	North American Datum
NADC	Natural Attenuation Default Concentrations
NASA	National Aeronautics and Space Administration
NAVD	North American Vertical Datum
NTU	nephelometric units
OM&M	Operation, Maintenance, and Monitoring
ORP	Oxidation Reduction Potential
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PLC	Programmable Logic Controller
psi	pound per square inch

ACRONYMS AND ABBREVIATIONS (CONTINUED)

psig	pound per square inch, gauge
PVC	Polyvinyl Chloride
RAE	Remedial Alternatives Evaluation
RCRA	Resource Conservation and Recovery Act
REC	Record of Environmental Consideration
RFI	RCRA Facility Investigation
ROI	Radius of Influence
SAP	Sampling and Analysis Plan
scfm	standard cubic feet per minute
SDR	Standard Diameter Ratio
SE	Southeast
SSHASP	Site-Specific Health and Safety Plan
SVE	Soil Vapor Extraction
SZ	Source Zone
SZ1	Source Zone 1
SZ2	Source Zone 2
SWMU	Solid Waste Management Unit
TCE	Trichloroethene
tDCE	trans-1,2-Dichloroethene
Tetra Tech	Tetra Tech, Inc.
TLV	Threshold Limit Values
TOC	Top of Casing
VC	Vinyl Chloride
VOC	Volatile Organic Compound
µg/L	micrograms per liter
µS/cm	microSiemens per centimeter

EXECUTIVE SUMMARY

This Air Sparge (AS) System Construction Completion and Performance Monitoring Report (CC-PMR) presents field implementation activities, as well as Year 1 operation, maintenance, and monitoring (OM&M) activities and performance monitoring results for the AS Interim Measure (IM) at the Hypergol Maintenance Facility North (HMFN) at Kennedy Space Center (KSC), Florida. The timeframe for activities included in this report extends from December 2019 to August 2021.

An AS IM was implemented at HMFN in 2019-2020 to treat a chlorinated solvent groundwater plume that resulted from historic operations supporting the National Aeronautics and Space Administration's (NASA) Space Program. The objective of the AS IM is to actively reduce groundwater concentrations exceeding Florida Department of Environmental Protection (FDEP) Natural Attenuation Default Concentrations (NADCs) (identified as the "High Concentration Plume" [HCP]) to levels that facilitate transition into a Long-Term Monitoring program. The AS IM targets the HCP, with the exception of a source zone area within the HCP where trichloroethene (TCE) exceeds 11,000 micrograms per liter (µg/L), and extends to a depth greater than 45 feet below land surface (bls) in which AS was found to not be conducive based on site lithology. NASA will re-visit plans for potentially utilizing another remedial technology in this area following the AS IM.

This CC-PMR includes the following information:

- AS system installation activities (including installation of wells, piping, manifolds, and trailer), which were conducted between December 2019 and August 2020. The completed system includes 213 AS wells, with screens ranging from 25 feet to 45 feet bls. The AS system is designed to treat approximately 1.6 acres of groundwater.
- AS system start-up and commissioning, which was completed between August and September 2020.
- Performance monitoring activities, which includes baseline groundwater monitoring well sampling in June 2020 (prior to system start-up – 27 wells) and quarterly sampling (after system start-up – 28 wells) in October 2020, January 2021, April 2021, and July 2021.

- OM&M activities for the AS system for the reporting period of August 2020 to August 2021. Ambient air sampling was also conducted as part of Year 1 OM&M.

OM&M activities and results from Year 1 indicate that the AS system at HMFN is operating as designed and meeting performance criteria. The pulse cycles, which operate between 10 treatment zones, are all functioning properly, and the AS wells are operating at the designed flowrates and pressures. The overall runtime of the AS system for the Year 1 reporting period (August 2020 to August 2021) was approximately 82%, with primary downtime attributed to groundwater sampling activities and system maintenance. Air samples collected during the reporting period were less than applicable human health and air emissions permit criteria.

Groundwater performance monitoring results indicate that within the first year of operation, trichloroethene (TCE) concentrations in plume centerline wells across all treated depth intervals have been reduced by more than 97% (average). The highest TCE concentration during baseline sampling (within the vertical treatment zone) was 160,000 µg/L at MW0028, which was reduced to 3,600 µg/L during the July 2021 sampling event. Similarly, cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC) concentration averages of plume centerline monitoring wells across the entire saturated treatment area have been reduced by 98%, and more than 99%, respectively. Following the July 2021 sampling event, groundwater concentrations continue to exceed Groundwater Cleanup Target Levels (GCTLs) in 20 of the 28 performance monitoring wells and NADCs in 8 of the 28 performance monitoring wells.

Based on Year 1 OM&M and performance monitoring results, continued operation of the AS system is required to meet the IM objective. It is recommended to continue with Year 2 AS system OM&M for HMFN, but with the following modifications:

- Continue to operate the AS system throughout Year 2, but with Zone 1 operations discontinued. Operation of Zone 1, which includes 17 AS wells screened within 25 to 32 feet bls in the western portion of the AS well network, is no longer required based on Year 1 performance monitoring results which indicated volatile organic compound (VOC) concentrations have been reduced to less than NADCs in MW0004 and MW0016.

For performance monitoring, a reduced Year 2 monitoring program is recommended, as follows:

- Remove MW0035 and MW0036 from the performance monitoring program. These two monitoring wells will be discontinued based on all VOCs measuring below GCTLs during the last two quarterly sampling events.
- Reduce sampling frequency of MW0046 and MW0047 from quarterly to annual based on two consecutive rounds of sampling results below GCTLs. Annual sampling will continue at these wells to monitor the observed groundwater flow direction reversal away from the borrow pond towards these two wells.
- Reduce sampling frequency at the remaining 24 performance monitoring wells (MW0002, MW0004, MW0008, MW0009, MW0011, MW0016, MW0024, MW0027, MW0028, MW0029, MW0030, MW0031, MW0032, MW0033, MW0034, MW0037, MW0038, MW0039, MW0040, MW0041, MW0042, MW0043, MW0044, and MW0045) from quarterly to semi-annual as outlined in the December 2019 Implementation Work Plan.

Additional recommendations for HMFN include:

- Reduce air sampling to one annual ambient air sampling event during the Year 2 reporting period. This is based on no screening level exceedances detected during any Year 1 air monitoring events.
- Conduct a future direct push technology groundwater sampling investigation to assess system progress and source conditions below the AS IM.
- Following the AS IM, NASA will re-visit plans for potentially utilizing another remedial technology to treat contamination in the deep source zone.

The contents of this CC-PMR, including the above recommendations, were presented at the February 2021 KSCRT Meeting (AS system installation information, Meeting Minute 2102-M12), and the January 2022 KSCRT Meeting (Year 1 performance data) where Team consensus was reached on the recommendations and path forward for HMFN (Meeting Minute 2201-M03, Decision D01).

SECTION I
INTRODUCTION

This Air Sparge (AS) System Construction Completion and Performance Monitoring Report (CC-PMR) presents field implementation activities, and Year 1 operation, maintenance, and monitoring (OM&M) activities and performance monitoring results for the AS Interim Measure (IM) at the Hypergol Maintenance Facility North (HMFN) at Kennedy Space Center (KSC), Florida (Figure 1-1). HMFN has been designated as Solid Waste Management Unit (SWMU) 090 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. This document was prepared by Tetra Tech, Inc. (Tetra Tech) for the National Aeronautics and Space Administration (NASA) under Indefinite Delivery Indefinite Quantity (IDIQ) Contract 80KSC019D0011-80KSC019F0081.

This CC-PMR includes the following information:

- AS system installation activities (including installation of wells, piping, manifolds, and trailer), which were conducted between December 2019 and August 2020. The completed system includes 213 AS wells, with screens ranging from 25 feet to 45 feet below land surface (bls). The AS system is designed to treat approximately 1.6 acres of groundwater contamination.
- AS system start-up and commissioning, which was completed between August and September 2020.
- Performance monitoring activities, which includes baseline groundwater monitoring well sampling in June 2020 (prior to system start-up) and quarterly sampling (after system start-up) in October 2020, January 2021, April 2021, and July 2021. Of note, baseline direct push technology (DPT) sampling was completed in 2019 and reported in the Implementation Work Plan (IWP) (NASA, 2019b). This DPT sampling event is discussed in Section 1.3 of this report.
- OM&M activities for the AS System for the reporting period of August 2020 to August 2021. Air sampling was also conducted as part of Year 1 OM&M.

The objective of the HMFN AS IM is to reduce chlorinated volatile organic compound (CVOC) concentrations within the High Concentration Plume ([HCP]; excluding Hot Spot 2 [HS2] Source Zone [SZ]) to concentrations that facilitate a transition to Long Term Monitoring (LTM). The HCP, defined where groundwater concentrations exceed Florida Department of Environmental Protection (FDEP) Natural Attenuation Default Concentrations (NADCs), consists of two Hot Spots (Hot Spot 1 [HS1] and HS2), defined as areas where CVOC concentrations are greater than 10 times NADCs (10x NADCs), as well as two SZs where trichloroethene (TCE) concentrations exceed 11,000 micrograms per liter (µg/L) (NASA, 2017a). Figure 1-3 presents the baseline CVOC plume based on the DPT investigation detailed in the IWP (NASA, 2019b).

1.1 PURPOSE

The purpose of this report is to summarize the activities that were performed to install, operate, and monitor the AS system at HMFN to treat the HCP, as well as present the first year of performance monitoring results. The reporting period for the activities included in this report extends from December 2019 to August 2021. These activities were conducted in accordance with the Interim Measures Work Plan (IMWP) (NASA, 2017a), the IWP (NASA, 2019b), and the Site-Specific Safety and Health Plan (SSHASP) (NASA, 2019a). Recommendations for future OM&M and performance monitoring are also included in this report.

1.2 SITE BACKGROUND

KSC is located on the northern section of Merritt Island, a barrier island bordered on the east by the Banana River Lagoon and west by the Indian River Lagoon (Figure 1-1). HMFN is located within KSC, at the Hypergol/Payload Test Area southeast of the KSC Industrial Area, in Brevard County, Florida (Figure 1-2). The site is located at the corner of 5th Street Southeast (SE) and G Avenue SE and is approximately 1.2 miles west of the Banana River Lagoon. The property encompasses approximately 23 acres. The HMFN area is bordered to the southeast by four borrow ponds encompassing approximately 42 acres, about 0.5 miles west of the Banana River Lagoon. These ponds are bordered to the east by relic interdunal swales running parallel to the shoreline and connecting to Duck Creek, a natural tributary to the Banana River Lagoon.

Properties directly south of HMFN include HMF South, the Hypergol Module Processing (HMP) South Area, the Firex Facility, and HMF.

The HMFN facility was constructed in the 1960s to support the Apollo Space Program. During the Apollo Program, the property was used for office space, laboratory space, and testing and servicing environmental systems for the Apollo Program. Following the Apollo Space Program's closure, the facility was converted to support the Space Shuttle Program. While supporting the Space Shuttle Program, the activities performed at HMFN included refurbishment, testing, encapsulation, propellant (hypergolic fuels) loading, and pressurization of fuel and oxidizer lines for the Space Shuttle orbiter maneuvering system. Structures within HMFN included the Boresight Control Building (M7-0867), the General Warehouse (M7-0912), the Hazardous Waste Staging Area (M7-0862), the Ground Support Equipment Storage Building (M7-1011), Weather Tower 506 (M7-0913), and the former site of the HMP-North Building, demolished in September 2014 (M7-0961) (NASA, 2017a). The locations of these site structures are shown on Figure 1-2.

1.3 SITE CHARACTERIZATION

During the 2007 RCRA Facility Investigation (RFI), volatile organic compounds (VOCs) were identified in groundwater at concentrations exceeding State of Florida Groundwater Cleanup Target Levels (GCTLs). VOCs included TCE, cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC). DPT groundwater sampling conducted during the RFI identified dense non-aqueous phase liquid (DNAPL) within the SZ at HS2. Within this area, TCE was detected at a maximum concentration of 196,000 µg/L. The refrigerant with the trade name Freon-113 (1,1,2-trichlorotrifluoroethane) was also encountered in groundwater during this initial investigation, but at concentrations below its respective GCTL. During supplemental investigation activities, Freon-113 was detected above its GCTL at several DPT locations, and DNAPL (comprised of both Freon-113 and TCE) was visually identified and laboratory confirmed at two DPT locations within the HS2 SZ (NASA, 2017a). Consensus was reached on vertical and horizontal delineation of Freon-113 during the Site Characterization ADP presented to the KSCRT in January 2015. During the most recent October 2019 DPT sampling event, which was conducted

to refine the CVOC plume and AS design for the IWP, Freon-113 was not detected above its GCTL.

Between October 2008 and June 2009, Pilot Test Work Plans for bioremediation and emulsified zero-valent iron (EZVI) were implemented for an area of the HCP, per KSC Remediation Team (KSCRT) consensus following the Pre-Corrective Measures Study (CMS) presentation. The pilot test results indicated a reduction of VOC concentrations via bioremediation; however, maintaining a pH within the optimal target range (6.0 to 8.5) was difficult within the surficial aquifer from ground surface to 20 feet bls. The EZVI portion of the pilot study was postponed so that the HS1 area could be further delineated, per KSCRT recommendations.

Following delineation of HS1 and the low concentration plume (LCP) in December 2012, a Remedial Alternative Evaluation (RAE; formerly referred to as a Step 2 Engineering Evaluation) Advance Data Package (ADP) for HS1 was presented to the KSCRT in May 2013. Consensus was reached to develop an AS/soil vapor extraction (SVE) Pilot Test Work Plan for HS1 remediation. As part of the plan, a geotechnical investigation was conducted prior to the AS/SVE pilot test to identify and assess any lower permeability portions within the groundwater plume. This investigation indicated that soils deeper than 45 feet bls would not be conducive to AS technologies. Therefore, the KSCRT decided that AS/SVE would not be considered as the primary method of groundwater remediation for groundwater impacts greater than 45 feet bls (NASA, 2017a).

Interim Groundwater Monitoring (IGM) was performed in 2014 while delineation of HS2 could be completed. In January 2015, demolition of the HMP North Building (M7-0961) was completed, which was followed by additional DPT sampling performed within the former building's footprint. KSCRT consensus was reached that vertical and horizontal delineation of TCE, Freon-113, cDCE, and VC was achieved for HS2. Based on groundwater sampling results, no appreciable changes were noted within the LCP and HCP; however, additional DPT groundwater sampling was recommended to further delineate the HCP.

The Site Characterization ADP for the supplemental HCP delineation was presented to the KSCRT in September 2016. Consensus was reached that TCE, cDCE, and VC groundwater

plumes comprising HS1 were delineated (NASA, 2017a). Figure 1-3 includes the CVOC groundwater plume presented in the September 2016 Site Characterization ADP.

In October 2016, a RAE for HS1, HS2, and the HCP at HMFN was presented to the KSCRT. Consensus was reached by the KSCRT to evaluate three groundwater remediation options, to include:

1) Implement AS in HS1, HS2, and the HCP, but omitting the HS2 SZ;
2) Potentially inject EZVI in the HS1 SZ after AS activities are completed; and
3) Inject steam and microscale zero-valent iron via large diameter auger (LDA) in the HS2 SZ.

IGM continued at the site until the remedial option was selected and could be implemented (NASA, 2017a). The IMWP for HMFN was presented at the October 2017 KSCRT meeting, providing details of the proposed IM, which included AS design within the HCP, but omitting the HCP SZ. Team consensus was reached on the HMFN AS IMWP (Meeting Minute 1710-M14, Decision 1710-D22). The final IMWP was submitted for regulatory approval in October 2017 following incorporation of Team recommendations from the October KSCRT meeting.

The HMFN IMWP was used as the primary design basis for the HMFN AS system. However, an additional DPT investigation was conducted in October 2019 to confirm site and contaminant conditions since the Site Characterization ADP was presented at the September 2016 KSCRT Meeting. This baseline DPT investigation resulted in a revised HCP delineation and AS network layout that extended further to the southwest than the original IMWP design. Tetra Tech prepared an IWP, which presented the findings of the October 2019 DPT baseline groundwater sampling event and the final AS system design (NASA, 2019b).

Meeting minutes from previous KSCRT meetings are provided in Appendix H for reference.

1.4 LITHOLOGY

Based on soil borings collected during the RFI and supplemental investigations at HMFN, a summary of the lithology is presented below.

- Ground surface to approximately 6 feet bls: grey fine-grained sand.
- Approximately 6 to 10 feet bls: brown sand, with organic material present.
- Approximately 10 to 45 feet bls: intervals of grey and brown fine-grained sands with varying amounts of silts, fragmented shells (varying from 10 to 80 percent). A low permeability, sand with silt and clay layer, was identified at approximately 34 to 38 feet bls.
- Approximately 45 to 50 feet bls: grey clay with silts and fine-grained sand.
- Approximately 50 to 90 feet bls: grey fined-grained sand with silt and fragmented shells.

Soil lithology at HMFN is shown on the cross-sections presented on Figures 1-4 through 1-7.

1.5 HYDROLOGY

The topography of the HMFN area is generally flat; however, a swale approximately 25-feet wide and 2-feet in depth is positioned at the center of the site (orienting from northwest of the site across to southeast of the facility). Standing water is typically present during seasonal rains.

Depth-to-groundwater ranges from approximately 0.5 to 7 feet bls. Based on groundwater elevations collected at site monitoring wells during the previous investigations, groundwater generally flows towards the southeast, toward the nearby borrow ponds. In the 2007 RFI prepared for HMFN, hydraulic conductivity values were determined using a hydraulic profiling tool for the shallow zone (5 to 15 feet bls) and intermediate zone (20 to 30 feet bls) of the surficial aquifer. Hydraulic conductivity values were found to be 4.6 feet per day (ft/day) in the shallow zone and 1.5 ft/day in the intermediate zone. Using these hydraulic conductivity values, groundwater flow velocities were calculated at 8 feet per year (ft/yr) in the shallow zone and 4 ft/yr in the intermediate zone. The screened intervals of the wells used to calculate hydraulic conductivities correspond to the fine-sand to sand with organics, grading into sand with silt comprising the shallow zone, with sand with shells and clay being the predominant layer of the intermediate zone (NASA, 2017a). The lower groundwater flow rates corresponding to the intermediate zone would be expected due to the introduction of clay at this depth.

1.6 INTERIM MEASURE OBJECTIVE

The AS IM objective is to reduce VOC concentrations within the HCP to facilitate transition of the site into monitored natural attenuation (MNA) through LTM. The overall Corrective Action Objective for HMFN is to reduce concentrations of VOCs present in groundwater to levels below their respective GCTLs. Based on performance of the IM, AS operations may be modified, as appropriate, to achieve the IM objective.

The CVOC groundwater plume at HMFN had been divided into six areas.

- LCP defined as an area with individual CVOC concentrations higher than GCTLs but less than NADCs.
- HCP defined as an area with individual CVOC concentrations higher NADCs.
- HS1 defined as areas where VOC concentrations are higher than 10x NADC.
- HS2 defined by VOC concentrations higher than 10x NADC within the former HMP North Building Footprint.
- Source Zone 1 (SZ1) where TCE concentrations exceed 11,000 µg/L.
- Source Zone 2 (SZ2) where TCE concentrations exceed 11,000 µg/L.

The AS IM presented in this document addresses the HCP at HMFN, but excludes SZ2 (located within HS2) due to the depth of contamination below 45 feet bls in which AS was found not to be conducive due to site lithology. Figure 1-3 provides the general footprints of the HCP. The table below (Table 1-1) provides NADC IM cleanup levels, as well as GCTLs for reference.

Table 1-1. Site-Specific Interim Measure Cleanup Levels

Constituent	NADC (µg/L)	GCTL (µg/L)
Trichloroethene	300	3
cis-1,2-Dichloroethene	700	70
trans-1,2-Dichloroethene	1,000	100
Vinyl Chloride	100	1

1.7 INTERIM MEASURE PROJECT TEAM

The HMFN AS IM activities were performed at KSC on behalf of NASA by Tetra Tech, Inc. under IDIQ Contract 80KSC019D0011-80KSC019F0081. Well drilling and installation services at HMFN were provided by Drillpro, LLC (formerly Groundwater Protection, Inc.) of Orlando, Florida. Analytical services for the HMFN baseline and quarterly performance monitoring events were provided by ENCO Laboratories, Inc. of Orlando, Florida. Electrical installation services were provided by Chrome Electric, LLC of Titusville, Florida. Specialized maintenance of the HMFN air compressor was performed by Atlas Copco of Orlando, Florida.

1.8 REPORT ORGANIZATION

The remainder of this document is organized as follows:

Section II: Air Sparge System Construction – This section presents information regarding the construction of the AS system installed for remediation of the identified VOCs in the HCP. The purpose of this section is to provide information certifying that the IM was implemented in accordance with the IWP (NASA, 2019b).

Section III: Baseline Sampling – This section presents the results of the baseline groundwater monitoring conducted prior to start-up of the AS system to verify levels of contamination identified in the IMWP (NASA, 2017a) and IWP (NASA, 2019b), and to provide a baseline for comparison during system operation.

Section IV: System Operation and Maintenance – This section provides information and data collected during start-up of the AS system, including site preparation and mobilization. This section also discusses air monitoring conducted, and details efforts associated with routine events for operation and maintenance of the AS system during Year 1 of operations.

Section V: Performance Monitoring Results – This section provides a summary of the quarterly performance monitoring results collected during Year 1 of operations.

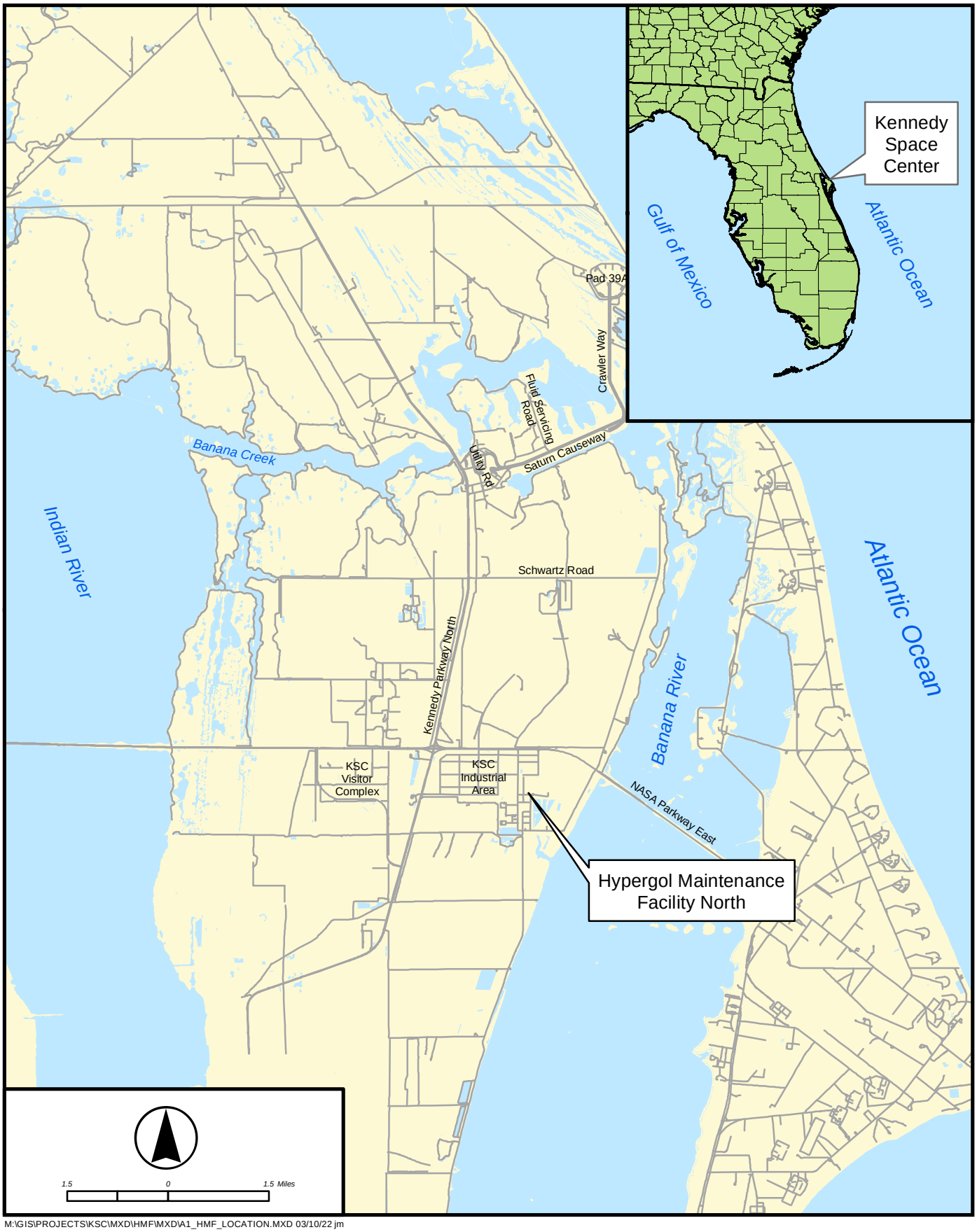
Section VI: Conclusions and Recommendations – This section provides a summary of the activities conducted in support of the IM and presents system operation recommendations based on groundwater monitoring results.

Section VII: References – This section provides a listing of the references cited in this report.

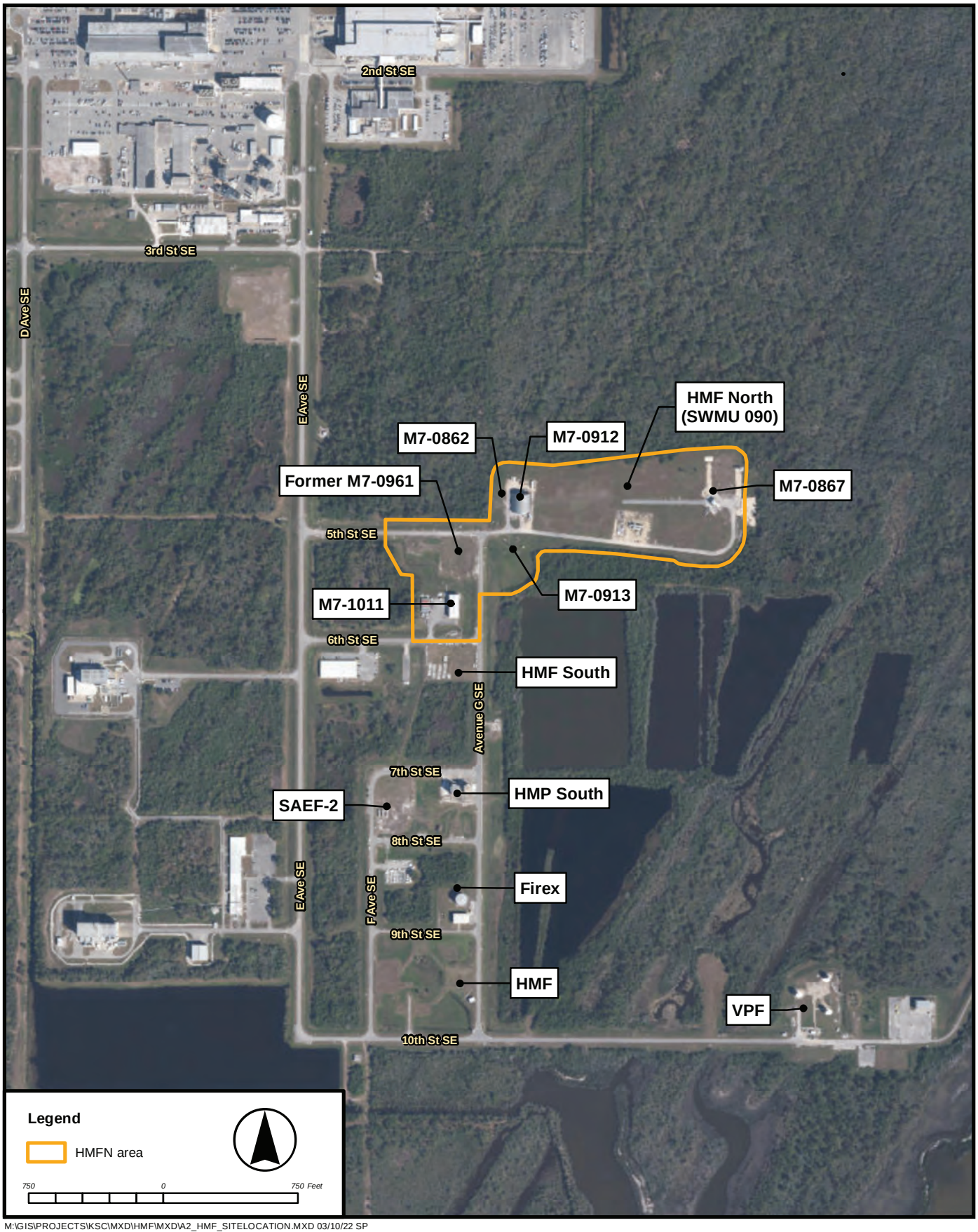
FIGURE 1-1 SITE LOCATION MAP

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

HMFN CC-PMR
Revision: 0
March 2022



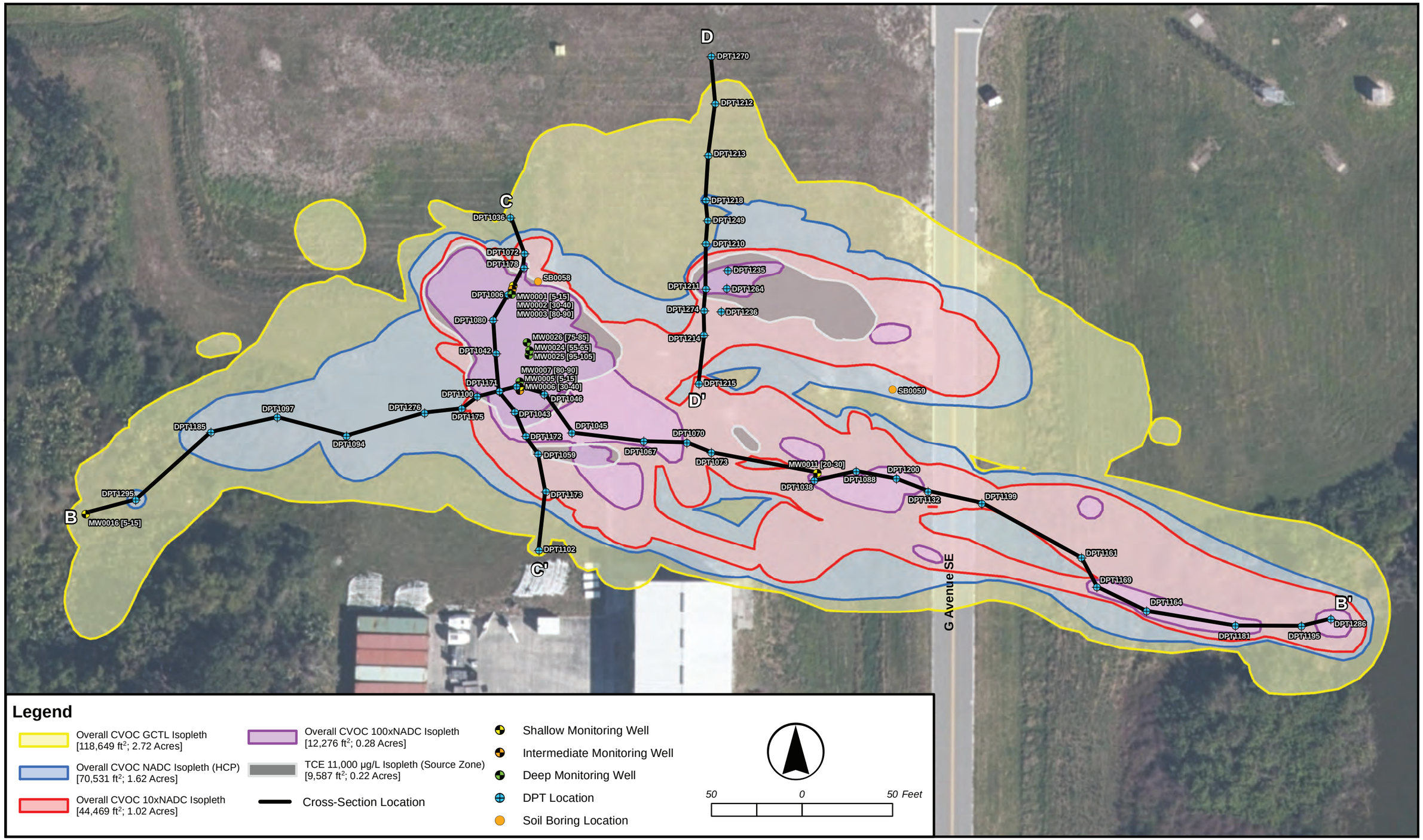
M:\GIS\PROJECTS\KSC\MXD\HMF\MXD\A1_HMF_LOCATION.MXD 03/10/22 jm



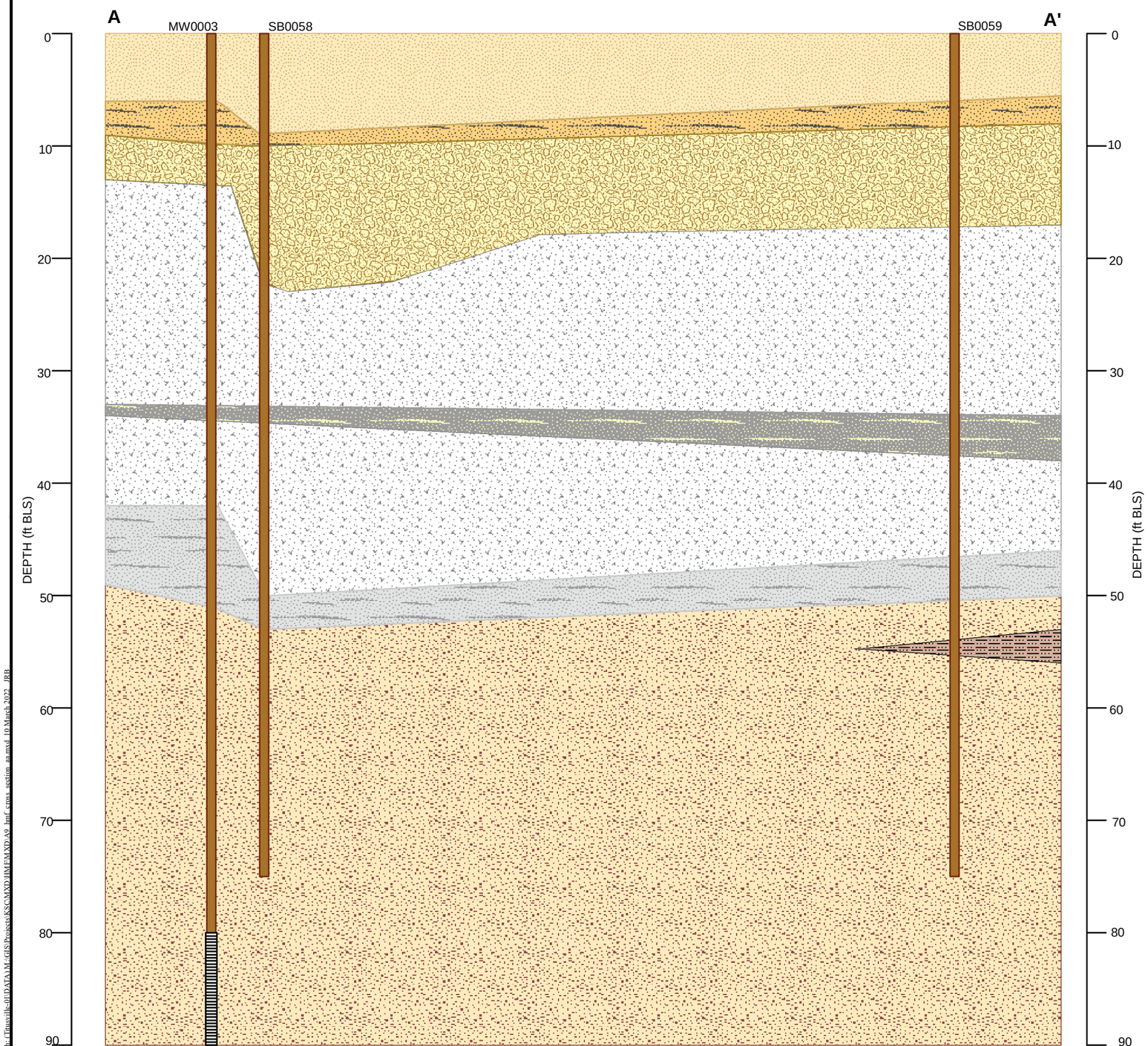
M:\GIS\PROJECTS\KSC\MXD\HMF\MXD\A2_HMF_SITELOCATION.MXD 03/10/22 SP

FIGURE 1-3 SITE CHARACTERIZATION CVOC PLUME AND TRANSECTS MAP

SWMU 090, KENNEDY SPACE CENTER, FLORIDA



JAX M:\GIS\PROJECTS\KSC\MXD\HMF\MXD\A8_HMF_ALL_CROSSX.MXD 03/10/22 SP



Legend

LITHOLOGY

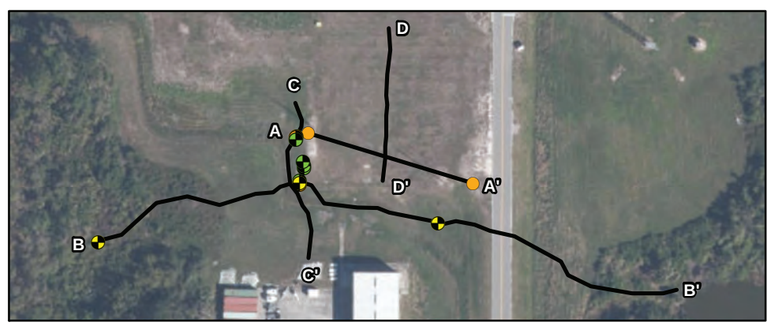
- fine SAND
- SAND with organics
- SAND with silt
- SAND with shells and clay
- SAND with silt and clay
- CLAY with sand
- SAND with silt and fragmented shells
- CLAY with silt and sand

Monitoring Well/Soil Boring Location

Monitoring Well Screen Interval

Vertical Exaggeration 10
Horizontal Exaggeration 3

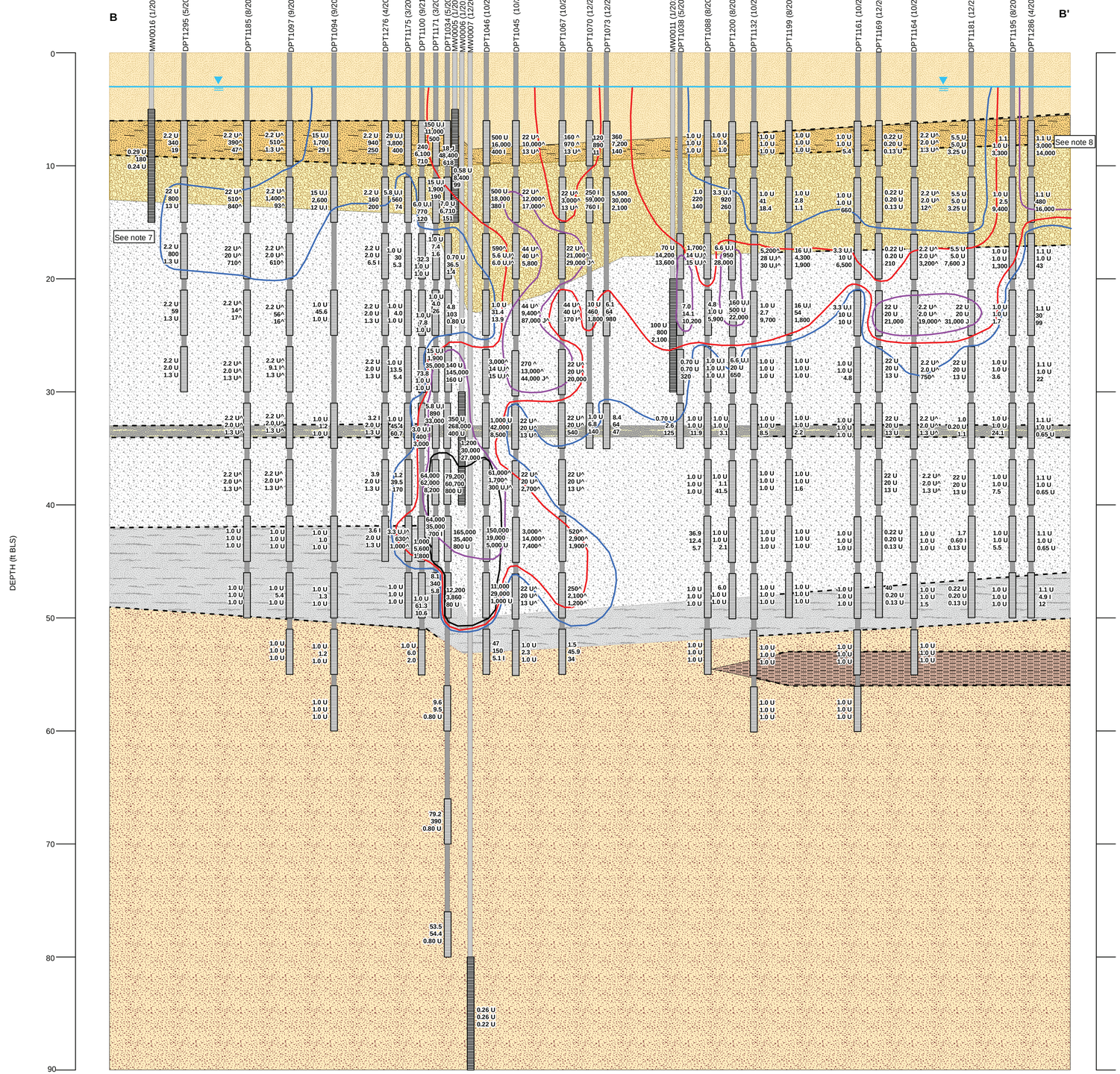
100 50 0 100
Feet



Path: (Titusville:gis:DATA:MAGISProjects:KSCMXD:HMFNMXD.a9_hmf_cross_section_aa.mxd 10 March 2022 JRB

FIGURE 1-5 CVOC LITHOLOGIC/PLUME CROSS SECTION B-B'

SWMU 090, KENNEDY SPACE CENTER, FLORIDA



Legend

- Water Level
- Overall CVOC NADC Isopleth (HCP)
- Overall CVOC 10xNADC Isopleth
- Overall CVOC 100xNADC Isopleth
- TCE 11,000 µg/L Isopleth (Source Zone)
- Inferred Lithology

- fine SAND
- SAND with organics
- SAND with silt
- SAND with shells and clay
- SAND with silt and clay
- CLAY with sand
- SAND with silt and fragmented shells
- CLAY with silt and sand

Monitoring Well/DPT

DPT Sample Interval

Monitoring Well Screen Interval

Notes:
1. bls feet below land surface.
2. Results are presented in micrograms per liter (µg/L).
3. U not detected above laboratory reporting limit.
4. I result is between the method detection limit and the practical quantiation limit.
5. J estimated value.
6. ^ associates results with sample date as indicated in location label.
7. DPT1147, located 98 feet west of DPT1295, has a cDCE concentration of 1.0 U µg/L at 16 to 20 ft BLS, and provides delineation to the west.
8. DPT1286 is the easternmost DPT location prior to the surface water body located approximately 33 ft to the east. Surface water sample SW0005, located 29 ft south of DPT1286, has a concentration of 1.0 U µg/L, and DPT 1201, located 685 ft east of DPT1286 on the far side of the surface water body, has concentrations of 1.0 U µg /L at all sampled depth intervals, providing further delineation.
9. Chlorinated Volatile Organic Compounds (CVOC) include TCE, cDCE, and VC.
10. HCP high concentration plume.
11. NADC Florida Department of Environmental Protection Natural Attenuation Default Concentration.

1.0U Trichloroethene (TCE) concentration in µg/L

1.0U cis-1,2-dichloroethene (cDCE) concentration in µg/L

1.0U Vinyl Chloride (VC) concentration in µg/L

Horizontal Scale 1"=60'
Vertical Exaggeration 10

50 25 0 50
Feet

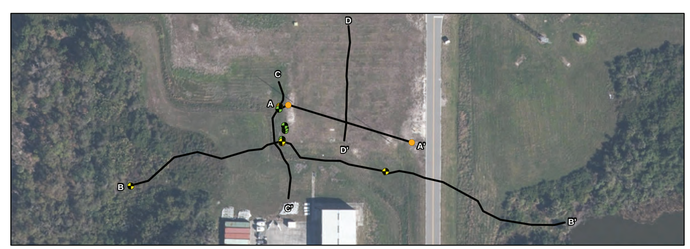
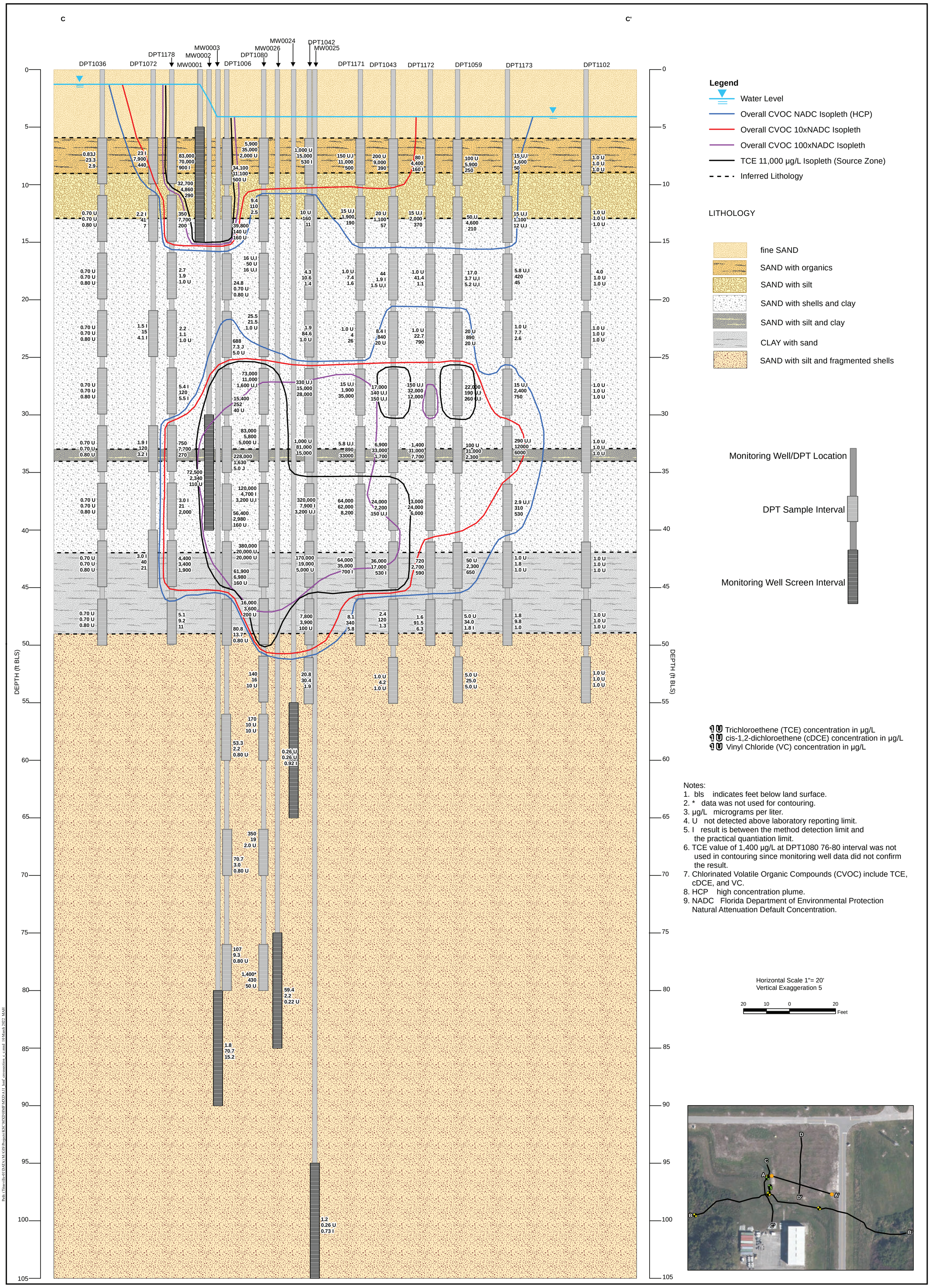


FIGURE 1-6 CVOC LITHOLOGIC/PLUME CROSS SECTION C-C'

SWMU 090, KENNEDY SPACE CENTER, FLORIDA



Notes:
1. bls indicates feet below land surface.
2. * data was not used for contouring.
3. µg/L micrograms per liter.
4. U not detected above laboratory reporting limit.
5. I result is between the method detection limit and the practical quantiation limit.
6. TCE value of 1,400 µg/L at DPT1080 76-80 interval was not used in contouring since monitoring well data did not confirm the result.
7. Chlorinated Volatile Organic Compounds (CVOC) include TCE, cDCE, and VC.
8. HCP high concentration plume.
9. NADC Florida Department of Environmental Protection Natural Attenuation Default Concentration.

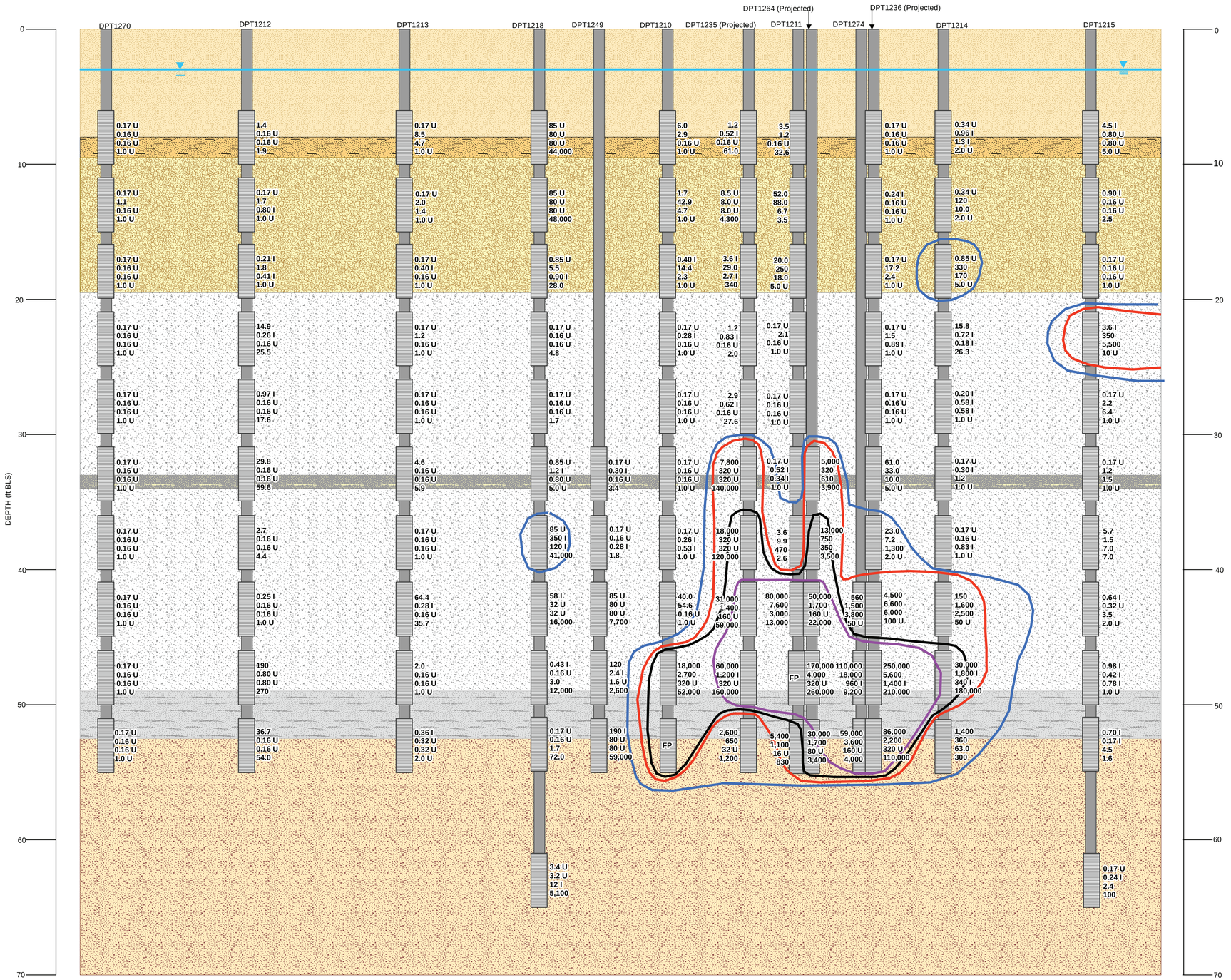
Horizontal Scale 1"= 20'
Vertical Exaggeration 5

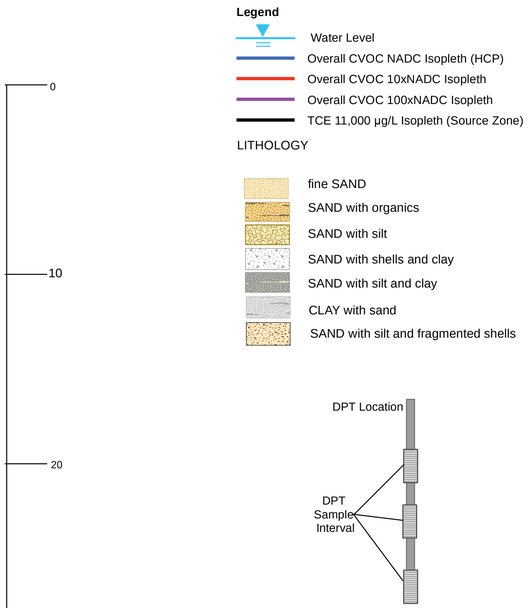
20 10 0 20 Feet

Path: (Titusville-01\DATA\M-GIS\Projects\KSC\MXD\HMF\MXD\A11_hmf_crosssection_c_c.mxd 10 March 2022 MAH

FIGURE 1-7 CVOC LITHOLOGIC/PLUME CROSS SECTION D-D'

SWMU 090, KENNEDY SPACE CENTER, FLORIDA



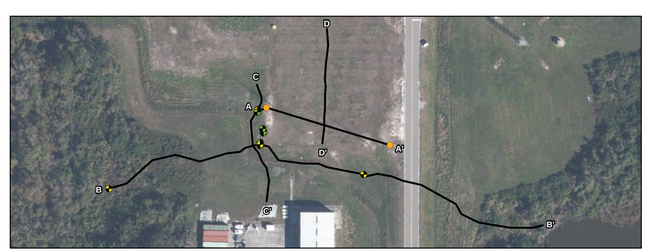


40 Trichloroethene (TCE) concentration in µg/L
23.9 cis-1,2-dichloroethene (cDCE) concentration in µg/L
0.34 I Vinyl Chloride (VC) concentration in µg/L
1.0 U 1,1,2-trichlorotrifluoroethane (Freon 113) concentration in µg/L

Notes:
1. bls indicates feet below land surface.
2. µg/L micrograms per liter.
3. U analyte is not detected above the laboratory method limit (MDL).
4. I result is between the laboratory practical quantitation limit and MDL.
5. FP free product was present.
6. Chlorinated Volatile Organic Compounds (CVOC) include TCE, cDCE, and VC.
7. HCP high concentration plume.
8. NADC Florida Department of Environmental Protection Natural Attenuation Default Concentration.

Horizontal Scale 1"=10'
Vertical Exaggeration 2.5

0 5 10 Feet



SECTION II
AIR SPARGE SYSTEM CONSTRUCTION

Construction of the HMFN AS system was conducted in accordance with the approved IMWP (NASA, 2017a), the IWP (NASA, 2019b), and SSHASP (NASA, 2019a). The following sections provide an overview of construction activities associated with the AS IM, to include: pre-construction activities, mobilization, and AS system installation. A photographic log of construction activities is presented in Appendix A. Construction completion information was presented to the KSCRT during the February 2021 meeting (Meeting Minute 2102-M12).

2.1 PRE-CONSTRUCTION ACTIVITIES

A project kick-off meeting was held at KSC on October 22, 2019, following the KSC Safety Group's review of the SSHSP. Project details, including construction requirements and components of the IMWP, IWP, and KNPR 8715.7 (KSC Construction Contractor Safety and Health Practices Procedural Requirements), were discussed. Permitting and actions required by the KSC Record of Environmental Consideration (REC), Utility Locate/Excavation Permit, Threatened and Endangered Species Survey, Site Plan, and monitoring well permits were obtained or completed prior to field activities. This information, if not previously provided in the IWP (NASA, 2019b), is included in Appendix B.

2.2 MOBILIZATION

Project details, including KSC-specific construction requirements and components of the IWP (NASA, 2019b) and the SSHASP (NASA, 2019a), were discussed with Tetra Tech field staff and subcontractors prior to initiating installation activities. In addition, a tailgate health and safety meeting was performed each day prior to work and attended by all Tetra Tech field staff and subcontractor personnel.

Before utility locate/clearance, a stake-out survey was conducted to demarcate areas of proposed intrusive activities, and an ecological survey was conducted. During the stake-out survey, the locations of the monitoring wells and the AS well locations were marked with wooden stakes.

Prior to trenching, a Ground Penetrating Radar (GPR) survey was conducted to locate underground utilities and any remaining debris buried at the site due to building demolition. The GPR survey was completed on November 14-15, 2019, by GeoView, Inc. of St. Petersburg, Florida. Utility locations were marked in the field with paint, to include approximate depth at the time of the survey. The GPR Survey Report was provided to field personnel and the utility markings were re-marked periodically. The GPR Survey Report is included in Appendix C.

2.3 WELL INSTALLATION

Well installation activities were conducted from December 2, 2019 to January 29, 2020, and included installation of monitoring wells for performance monitoring, as well as AS wells for remedial system construction. A field geologist was present during all well installation operations and was responsible for oversight of the Florida-licensed drilling subcontractor, geologic logging, recording of well construction details, and decontamination procedures. Soil boring and well construction logs, and monitoring well completion reports for all newly installed monitoring and AS wells are provided in Appendix D. Soil and water generated during the installation and development of wells were handled as Investigation-Derived Waste (IDW) per the KSC IDW Management Plan and as detailed in the HMFN IWP (NASA, 2019b) (see documentation in Appendix I).

2.3.1. Monitoring Well Installation

A total of 21 monitoring wells were installed at varying depths to monitor performance of the AS IM (MW0027 through MW0047). These wells are further discussed in the baseline and performance monitoring sections of this report, and are shown on Figure 3-4. Well construction details for all newly installed monitoring wells are provided in Table 2-1.

Wells were completed using rotosonic drilling techniques. Each monitoring well was constructed in accordance with the IWP using 1-inch inside diameter (I.D.) Schedule 40 polyvinyl chloride (PVC) casing. Casing sections were flush-joint threaded with a neoprene "O" ring on the male threaded end to render the joint airtight. Well screens were 0.010-inch slotted Schedule 40 PVC and were pre-packed with 20/30 grade filter pack. The annular space of the borehole was backfilled with an American Society of Testing and Materials (ASTM) 30/65 fine

sand seal followed by grout (Portland cement-bentonite slurry). The slurry weight of the grout was a minimum of 12.5 pounds per gallon (verified by a mud-scale).

The surface completion at each new monitoring well is either flush-mount or stick-up completion (approximately 3-feet) with an aluminum above-grade protector and centered in a 2-foot by 2-foot concrete pad (see Table 2-1). For clusters in which three or more monitoring wells were installed, the concrete pad measures 6-foot by 2-foot. Well identification tags were also installed for each new well to properly identify and label each well. Following installation of the monitoring wells, each well was developed via purging and evacuation. Each well was professionally surveyed in March 2021 (see Section 2.5).

2.3.2. Air Sparge Well Installation

As shown on Figures 2-1 and 2-2, a total of 213 AS wells were installed within 10 treatment zones, and at depths, angles, and diameters identified in Table 2-2. In accordance with the IWP (NASA, 2019b), the number of AS wells was based on the area of the HCP, the anticipated radius of influence (ROI) ranging from 10 to 20 feet, and the type of lithology within the proposed screen interval (e.g., lower ROIs for less permeable soils and larger ROIs for more permeable soils). At HMFN, an ROI of 20 feet was used for AS wells screened within the 30 foot bls interval and an ROI of 10 feet was used for AS wells within the 30 to 45 foot bls interval. The AS wells were installed using a Geoprobe 8140 sonic drill rig. A total of 69 of the 213 AS wells were installed via angled drilling in order to place the screens beneath the site's drainage swale and G Avenue SE to address contamination not readily accessible via vertical drilling. Construction details for each AS well, including installation angles for each angled well, are provided in Table 2-2. Additional details about the AS well installation process are provided in the following paragraphs.

During advancement of the 4-inch diameter soil boring at each AS well location, a soil core was collected from the bottom 10-feet of the screened interval to confirm lithologic conditions were adequate for AS screen placement. The soil cores were photographed, and the soil lithology was logged by the field geologist. Each AS well was constructed with one of the following three screened intervals (approximate):

- Shallow (25-27 feet bls screened interval),
- Shallow-Intermediate (30-32 feet bls screened interval), or
- Intermediate (43-45 feet bls screened interval).

Of the 213 AS wells, 43 AS wells were constructed with 1-inch I.D. Schedule 40 PVC. This was a modification made to the AS well design in the IWP (vs. using all 2-inch AS wells in the IMWP) based on lessons-learned from other KSC sites, which have shown highly effective treatment results when using 1-inch AS wells in the shallow and shallow-intermediate zones. The 1-inch AS wells were installed to various termination depths and constructed with 1-inch, 40-micron Shumasoil® diffuser wells screens (20 inches in length). Each well casing was constructed of 1-inch I.D. Schedule 40 PVC. The remaining 170 AS wells were constructed of 2-inch I.D. Schedule 40 PVC. The 2-inch AS wells were installed in the 45 foot bls interval (approximate). All 2-inch well screens were constructed with 0.010-inch PVC slotted screens (24-inches in length) with a 1-foot sump. Each well casing was constructed of 2-inch I.D. Schedule 40 PVC.

The filter packs for all AS wells were installed using silica sand of ASTM gradation 20/30. A minimum of 3 feet of bentonite was placed above the filter pack and allowed to hydrate for a minimum of 15 minutes before grouting the wells. Wells were grouted to the surface with a slurry of Portland cement and bentonite. The slurry weight was a minimum of 12.5 pounds per gallon (verified by a mud-scale). The well annulus was pressurized to ensure an adequate seal between the grout and native material. Each AS well was developed until the purge water was clear, which was typically after 5 to 15 gallons of groundwater were purged.

Following trenching and piping activities (described below in Section 2.4), a threaded plug was placed at the top-end of the well tee-fitting and in the port of the tee-fitting. The wellhead was buried with hand-compacted soil, and the soil was brought to grade. Three metal stakes were driven flush with the ground surface in the immediate vicinity of each AS well to aid in locating the well in the future.

2.4 AIR SPARGE SYSTEM INSTALLATION

Mobilization for installation of the AS system was conducted from January 27-31, 2020. Mobilization activities included delivery of straw waddle for erosion control, open excavation signage, concrete mixer, excavation equipment, and high-density polyethylene (HDPE) piping spool.

Trenching and piping installation activities were performed from January to March 2020. The header trenching network was excavated to a depth of 24-inches for installation of compressed air conveyance piping from the AS system trailer to each respective distribution manifold trailer or cabinet (see information on distribution manifolds below). From each distribution manifold trailer or cabinet, lateral piping was trenched and installed to each of the 213 AS wells. Soft digging was conducted where trenches were within three feet of identified utilities. The header trenching and lateral trenching layout, as well as cross-sectional details of the trenches, are shown on Figure 2-2 and Figure 2-3, respectively. During excavation activities, straw swaddles were placed around the newly installed monitoring wells to avoid sediment migration, and trenches were dug sequentially from south to north to facilitate safe machinery operation.

For AS well connection, AS wellheads were modified to accept the AS conveyance piping. One-inch I.D. Standard Diameter Ratio (SDR)-11 HDPE compressed air conveyance piping was installed from the manifold cabinet or trailer location to each AS well. Connections of HDPE piping sections and fittings were welded via socket fusion with a heater plate assembly following piping manufacturer recommendations for heating and cooling times.

From March to June 2020, the manifold infrastructure for the AS system was installed, which included two distribution manifold cabinets and two distribution manifold trailers. The two distribution manifold cabinets were installed in centrally located areas to the well groupings located on the east side of G Avenue SE, as shown in Figure 2-2. The enclosures for each distribution manifold cabinet were placed on a concrete pad with dimensions of 48 inches (width) by 84 inches (length) by 4 inches (depth). The feet of the enclosures were anchored to the concrete pad via 0.5-inch-diameter by 2.5-inch-long anchor bolts. The two distribution manifold trailers were installed in areas centrally located to the well groupings located on the

west side of G Avenue SE, as shown on Figure 2-2. Manifold blocks were installed and wall-mounted in trailers with approximate dimensions of 8.5 feet by 24 feet. The trailers were leveled and anchored to the subsurface per the Trailer/Equipment Tiedown Plan (NASA, 2001).

From June 8-24, 2020, the header and lateral lines were plumbed to the manifold trailers and cabinets. The manifolds were connected directly to the main header lines, which run directly from the AS trailer. The airflow from the compressor in the AS trailer is split via solenoid valves into 13 header legs (10 legs utilized, with three spares). From each manifold outlet, quick-connect fittings, a flow meter (0 to 14 standard cubic feet per minute [scfm]), flow regulating needle valve, and pressure gauge (0 to 110 pound per square inch gauge [psig] scale range) were installed on each line. Check valves were installed on the outlets following the pressure gauge and exit the back of the manifold enclosure through the 5/8-inch opening via push-connect bulkhead fittings. Flexible polyurethane tubing was connected to the bulkhead fittings to push-connect adapters on the 1-inch lateral stub-up from each well. The airflow at each AS well is independently adjustable, and each AS well has a dedicated manual flow control valve, flow meter, check valve, and pressure gauge at each manifold leg. Each manifold leg can be removed and repaired via compressed air push-connect fittings.

In August 2020, the prefabricated AS system was installed south of the GSE Storage Building (M7-1011). The AS trailer was shop-fabricated, including plumbing, wiring, and controls by MAE2 of Bluffton, South Carolina. The trailer consists of a 125-horsepower rotary screw air compressor, refrigerated air dryer, thermostat-controlled air conditioner, gauges, and control panels equipped with a remote telemetry system for off-site operation and notification of system outages. The piping and instrumentation diagram for the AS trailer is provided as Figure 2-4.

Electrical installation was performed from July 14-29, 2020 by Chrome Electric, LLC of Titusville, Florida. Trenching was performed for electrical conduit installation and cables were pulled through the conduit.

Single-conductor #10 insulated wire and detectable utility marking tape was installed in all trenches at a depth of approximately 6-inches bls for future utility detection. Trenches were

backfilled with native soil, compacted, and resurfaced to match existing conditions. All disturbed areas were re-seeded.

2.5 AS-BUILT SURVEY

Surveying was conducted by a Florida-licensed land surveyor on March 26-29, 2021 to provide as-built details for the HMFN AS system. The survey included general topography and significant existing features such as concrete structures, new monitoring wells, and AS system features. Each monitoring well was marked with a notch on the riser pipe to indicate the proper survey (and water level measurement) location. Horizontal locations were measured to the third order, in meters, and relative to the Florida State Plane Coordinate System, East Zone (North American Datum [NAD] of 1983). Vertical locations were referenced to the North American Vertical Datum (NAVD) of 1988 with 0.1-foot precision for ground elevations and 0.01-foot precision for top of casing (TOC) elevations. Well survey documentation is included in Appendix D.

Table 2-1. Monitoring Well Construction Details

Well Name (HMFN-)	Installation Date	Well Diameter (inches)	Screen Type	Flush or Above-grade Completion	Total Well Depth (feet)	Screened Interval (feet bls)	T.O.C Elevation (feet above msl)	Coordinates	
								Northing (meters)	Easting (meters)
MW0027	1/14/2020	1	0.010-inch slot	Above	45	40-45	6.35	463388.706	235103.259
MW0028	1/14/2020	1	0.010-inch slot	Above	50	45-50	6.18	463388.949	235101.713
MW0029	12/16/2019	1	0.010-inch slot	Flush	20	10-20	5.60	463378.371	235120.068
MW0030	12/17/2019	1	0.010-inch slot	Flush	30	20-30	5.70	463378.680	235119.366
MW0031	12/16/2019	1	0.010-inch slot	Flush	40	30-40	5.65	463378.983	235118.594
MW0032	12/17/2019	1	0.010-inch slot	Flush	45	40-45	5.50	463379.189	235117.776
MW0033	12/16/2019	1	0.010-inch slot	Flush	50	45-50	5.61	463379.480	235117.068
MW0034	12/16/2019	1	0.010-inch slot	Flush	20	10-20	6.12	463373.458	235126.449
MW0035	12/16/2019	1	0.010-inch slot	Flush	40	30-40	6.09	463373.458	235125.542
MW0036	12/20/2019	1	0.010-inch slot	Flush	20	10-20	3.90	463357.264	235165.163
MW0037	1/22/2020	1	0.010-inch slot	Above	15	5-15	6.09	463335.393	235243.541
MW0038	1/22/2020	1	0.010-inch slot	Above	25	15-25	5.90	463336.305	235243.541
MW0039	1/17/2020	1	0.010-inch slot	Flush	40	30-40	5.69	463379.988	235181.113
MW0040	1/17/2020	1	0.010-inch slot	Flush	45	40-45	5.76	463379.011	235181.081
MW0041	12/20/2019	1	0.010-inch slot	Flush	40	30-40	4.89	463382.346	235154.364
MW0042	12/20/2019	1	0.010-inch slot	Flush	45	40-45	4.88	463381.014	235155.093
MW0043	12/20/2019	1	0.010-inch slot	Flush	40	30-40	4.76	463394.595	235163.181
MW0044	12/20/2019	1	0.010-inch slot	Flush	45	40-45	4.77	463394.500	235164.354
MW0045	12/20/2019	1	0.010-inch slot	Above	35	25-35	7.02	463362.822	235121.284
MW0046	1/22/2020	1	0.010-inch slot	Above	20	10-20	6.03	463338.748	235213.519
MW0047	1/21/2020	1	0.010-inch slot	Above	30	20-30	5.95	463339.272	235212.970

Notes:

Coordinates are given in NAD_1983_StatePlane_Florida_East (meters), based on a professional survey performed on 3/26/2021

MW = monitoring well

T.O.C. = top of casing

bls = below land surface

msl = mean sea level

Table 2-2. Air Sparge Well Installation Details

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0001	01	1	25.5-27.5	40-micron Schumasoil	30	30	No	90	235047.2033	463355.1306
ASW0002	01	1	25-27	40-micron Schumasoil	28	28	No	90	235056.6265	463364.5003
ASW0003	01	1	25-27	40-micron Schumasoil	28	28	No	90	235067.5787	463363.1964
ASW0004	01	1	25-27	40-micron Schumasoil	28	28	No	90	235065.3190	463371.0272
ASW0005	01	1	25-27	40-micron Schumasoil	28	28	No	90	235074.8915	463372.0264
ASW0006	01	1	25-27	40-micron Schumasoil	28	28	No	90	235078.3090	463364.1682
ASW0007	01	1	25-27	40-micron Schumasoil	28	28	No	90	235086.3623	463362.5744
ASW0008	01	1	25-27	40-micron Schumasoil	28	28	No	90	235084.2054	463374.7280
ASW0009	01	1	25-27	40-micron Schumasoil	28	28	No	90	235093.6491	463368.3878
ASW0010	01	1	25-27	40-micron Schumasoil	28	28	No	90	235091.7672	463379.3985
ASW0011	01	1	30-32	40-micron Schumasoil	33	33.7	**Yes**	79.1	235104.6886	463378.0737
ASW0012	01	1	30-32	40-micron Schumasoil	33	37.2	**Yes**	67.1	235106.9715	463388.3335
ASW0013	01	1	30-32	40-micron Schumasoil	33	33	No	90	235113.0973	463391.0192
ASW0014	01	1	30-32	40-micron Schumasoil	33	34.9	**Yes**	78.3	235116.2081	463363.1339
ASW0015	01	1	25-27	40-micron Schumasoil	27	27.5	**Yes**	79	235109.6807	463370.6586
ASW0016	01	1	30-32	40-micron Schumasoil	33	33	No	90	235114.1821	463380.6003
ASW0017	01	1	30-32	40-micron Schumasoil	33	33	No	90	235122.8619	463381.0689
ASW0018	02	1	30.5-32.5	40-micron Schumasoil	35	35	No	90	235129.0867	463373.1149
ASW0019	02	1	30-32	40-micron Schumasoil	32	33.5	**Yes**	72.5	235119.7716	463371.6930
ASW0020	02	1	32-34	40-micron Schumasoil	35	35	No	90	235126.1951	463362.8351
ASW0021	02	1	30-32	40-micron Schumasoil	32	34.5	**Yes**	69	235135.6449	463365.9113
ASW0022	02	1	33-35	40-micron Schumasoil	35	35	No	90	235202.8806	463337.6957
ASW0023	02	1	30-32	40-micron Schumasoil	32	33	**Yes**	77	235203.4367	463357.6414
ASW0024	02	1	33-35	40-micron Schumasoil	35	35	No	90	235207.8899	463346.6677
ASW0025	02	1	32-34	40-micron Schumasoil	35	35	No	90	235212.0096	463334.3599
ASW0026	02	1	32.5-34.5	40-micron Schumasoil	35	35	No	90	235213.2326	463354.9730
ASW0027	02	1	30-32	40-micron Schumasoil	33.2	32	**Yes**	74.5	235217.1300	463343.4431
ASW0028	02	1	30-32	40-micron Schumasoil	35	35	No	90	235222.5833	463351.6371
ASW0029	02	1	30-32	40-micron Schumasoil	35.5	32	**Yes**	65	235223.1401	463335.9175
ASW0030	03	1	30-32	40-micron Schumasoil	32	36	**Yes**	62.5	235228.4828	463345.2230
ASW0031	03	1	30-32	40-micron Schumasoil	32	32	**Yes**	62	235230.9347	463332.8046
ASW0032	03	1	27-29	40-micron Schumasoil	35	35	No	90	235236.7301	463341.9688
ASW0033	03	1	30-32	40-micron Schumasoil	33	33	No	90	235242.0575	463332.3907
ASW0034	03	1	30-32	40-micron Schumasoil	33	33	No	90	235248.3923	463340.6658

Table 2-2. Air Sparge Well Installation Details (Continued)

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0035	03	1	30-32	40-micron Schumasoil	33	33	No	90	235252.2907	463333.4725
ASW0036	03	1	43-45	40-micron Schumasoil	46	46	No	90	235100.5274	463372.9054
ASW0037	03	1	43-45	40-micron Schumasoil	46	46	No	90	235102.9757	463368.7934
ASW0038	03	1	43-45	40-micron Schumasoil	46	46	No	90	235101.0813	463364.3117
ASW0039	03	1	43-45	40-micron Schumasoil	46	46	No	90	235105.7522	463363.6449
ASW0040	03	1	43-45	40-micron Schumasoil	46	46	No	90	235108.0877	463360.3857
ASW0041	03	1	43-45	40-micron Schumasoil	46	46	No	90	235110.8709	463356.7931
ASW0042	03	1	43-45	40-micron Schumasoil	46	48.2	**Yes**	78.4	235105.8633	463372.6084
ASW0043	03	1	30-32	40-micron Schumasoil	32	33.5	**Yes**	72.5	235108.3135	463368.5712
ASW0044	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	76.5	235111.3122	463363.9783
ASW0045	07	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235113.6477	463360.2745
ASW0046	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	47	**Yes**	70.5	235115.4275	463355.1260
ASW0047	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	54	**Yes**	55	235111.4233	463372.6084
ASW0048	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	76.5	235111.4234	463372.6083
ASW0049	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235115.5386	463364.2006
ASW0050	04	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235117.8741	463360.0523
ASW0051	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	46	46.5	**Yes**	71	235120.4319	463355.2372
ASW0052	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	54	**Yes**	55	235122.6562	463350.9777
ASW0053	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	76.5	235122.8785	463360.2745
ASW0054	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235120.6541	463364.3117
ASW0055	04	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235118.5444	463368.6823
ASW0056	04	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235115.8720	463372.6084
ASW0057	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	47	**Yes**	70	235123.4376	463368.3489
ASW0058	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	48.5	**Yes**	65.5	235125.3215	463363.9783
ASW0059	07	2	40-42	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235127.4383	463359.8300
ASW0060	07	2	41.5-43.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235124.8964	463355.4960
ASW0061	04	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235127.5494	463350.9777
ASW0062	04	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235129.1035	463355.3483
ASW0063	04	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235132.5538	463359.7189
ASW0064	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	50.2	**Yes**	61	235130.3259	463363.7561
ASW0065	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	44.2	**Yes**	84.5	235128.4420	463368.2378
ASW0066	07	2	45-47	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235132.8907	463368.1267
ASW0067	07	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235137.6728	463367.9044
ASW0068	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235134.7746	463363.5338

Table 2-2. Air Sparge Well Installation Details (Continued)

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0069	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	44.5	**Yes**	81.5	235130.2183	463346.9405
ASW0070	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	76	235132.8872	463350.9777
ASW0071	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235134.7746	463355.3483
ASW0072	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235137.2247	463359.6077
ASW0073	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	44.7	**Yes**	79.5	235139.4456	463363.6449
ASW0074	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235142.0104	463367.9044
ASW0075	07	2	43.5-45.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235147.9038	463367.9044
ASW0076	04	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	47.4	No	90	235144.6722	463363.9783
ASW0077	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	47	**Yes**	70	235142.5625	463359.8300
ASW0078	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45	**Yes**	78.5	235140.0012	463355.3483
ASW0079	06	2	43.5-45.4	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235137.7804	463351.0888
ASW0080	07	2	43.5-45.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235134.7629	463347.1475
ASW0081	07	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45	**Yes**	78.5	235096.1947	463381.5691
ASW0082	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235093.6239	463386.4558
ASW0083	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235098.5252	463385.2391
ASW0084	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235096.5231	463389.8319
ASW0085	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235094.3539	463391.7104
ASW0086	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235098.8586	463394.3136
ASW0087	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235095.4153	463396.2395
ASW0088	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235103.8630	463394.2025
ASW0089	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235099.5267	463398.9077
ASW0090	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235105.0396	463398.4302
ASW0091	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	50	**Yes**	74.5	235101.1941	463389.8319
ASW0092	04	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235103.9741	463385.2391
ASW0093	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235100.8607	463381.0907
ASW0094	04	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235097.7473	463377.0535
ASW0095	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235103.7536	463377.2012
ASW0096	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	47.3	**Yes**	77.8	235105.9903	463381.4591
ASW0097	07	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	49.8	**Yes**	77.6	235108.9785	463385.4613
ASW0098	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	48.8	**Yes**	74.5	235106.5319	463389.8319
ASW0099	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235108.6451	463394.0914
ASW0100	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235110.7583	463398.1286
ASW0101	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235116.0960	463398.2397
ASW0102	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235113.7606	463394.0914

Table 2-2. Air Sparge Well Installation Details (Continued)

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0103	04	2	41.5-43.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235111.6473	463389.9430
ASW0104	04	2	41.5-43.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235118.5427	463385.3502
ASW0105	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235113.9828	463385.2391
ASW0106	06	2	41.5-43.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235116.2266	463380.9811
ASW0107	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235111.0123	463381.1288
ASW0108	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235113.6512	463377.0901
ASW0109	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	50	**Yes**	78.5	235108.6468	463377.0901
ASW0110	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235116.7628	463389.8319
ASW0111	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235120.9893	463389.8319
ASW0112	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235118.9872	463393.9802
ASW0113	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235123.1258	463394.4504
ASW0114	04	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235125.9917	463390.0906
ASW0115	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235128.2162	463385.6090
ASW0116	05	2	40-42	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235123.3247	463385.3502
ASW0117	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235126.0183	463381.2399
ASW0118	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235121.5643	463380.9811
ASW0119	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235127.9181	463376.7408
ASW0120	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235129.4987	463381.4304
ASW0121	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235130.7739	463372.2750
ASW0122	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235125.8807	463372.6084
ASW0123	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235123.7710	463376.4233
ASW0124	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235118.8778	463376.8678
ASW0125	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235120.7652	463372.4972
ASW0126	05	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235154.0140	463375.7201
ASW0127	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235150.3433	463372.6084
ASW0128	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235148.5952	463376.7948
ASW0129	06	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235144.7833	463372.6084
ASW0130	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235143.2575	463376.7947
ASW0131	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235140.3487	463374.1117
ASW0132	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235138.2496	463377.0170
ASW0133	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235135.6513	463374.1006
ASW0134	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235131.3191	463376.7567
ASW0135	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235158.4595	463376.0535
ASW0136	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235163.1304	463375.8312

Table 2-2. Air Sparge Well Installation Details (Continued)

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0137	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235168.9126	463375.6089
ASW0138	05	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235174.1535	463374.9959
ASW0139	05	2	40-42	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235174.2379	463384.7945
ASW0140	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	71	235171.1404	463380.3128
ASW0141	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235166.2472	463380.3128
ASW0142	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235161.2428	463380.6462
ASW0143	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235155.6828	463380.4240
ASW0144	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235151.1230	463380.5351
ASW0145	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235145.8205	463381.3511
ASW0146	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235140.8867	463380.7558
ASW0147	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235135.7836	463380.9796
ASW0148	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235132.6631	463385.0168
ASW0149	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235130.8880	463389.8681
ASW0150	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235135.4431	463389.8319
ASW0151	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45	**Yes**	78.5	235138.2231	463385.0168
ASW0152	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235140.6543	463390.3102
ASW0153	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235143.5964	463385.9243
ASW0154	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235148.5652	463385.1279
ASW0155	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235153.3473	463385.1279
ASW0156	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235158.7962	463384.9057
ASW0157	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235158.5739	463394.5359
ASW0158	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235163.6894	463393.9802
ASW0159	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235171.3627	463389.4985
ASW0160	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235169.1383	463393.9802
ASW0161	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235166.2471	463399.0176
ASW0162	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235160.6872	463398.7953
ASW0163	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235155.9051	463398.5731
ASW0164	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235158.8438	463403.5469
ASW0165	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235153.8712	463403.4834
ASW0166	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235151.1005	463399.4631
ASW0167	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235148.9780	463403.3881
ASW0168	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235145.8964	463398.7953
ASW0169	08	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235144.2594	463403.4200
ASW0170	08	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235141.5259	463395.5223

Table 2-2. Air Sparge Well Installation Details (Continued)

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0171	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235160.0277	463339.6962
ASW0172	09	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	74.5	235140.9140	463344.8402
ASW0173	09	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235146.4620	463352.2260
ASW0174	09	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235150.0260	463341.6965
ASW0175	09	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	74.5	235155.7963	463349.3350
ASW0176	09	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	49	**Yes**	63.5	235166.8152	463348.4459
ASW0177	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	53	**Yes**	55.5	235172.1634	463342.3300
ASW0178	09	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45.5	**Yes**	74.5	235180.7304	463350.6985
ASW0179	09	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	49	**Yes**	63	235182.8441	463340.6979
ASW0180	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	50	**Yes**	61	235188.0757	463349.5588
ASW0181	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	72	235192.9224	463339.9198
ASW0182	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	49	**Yes**	63.5	235197.4271	463348.6694
ASW0183	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	50	**Yes**	61	235161.2502	463357.8625
ASW0184	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	72	235152.0100	463360.9758
ASW0185	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	44.5	**Yes**	83	235157.2416	463369.2810
ASW0186	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235166.7040	463366.5012
ASW0187	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46.5	**Yes**	72	235174.8729	463394.2184
ASW0188	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	44.5	**Yes**	83	235180.7662	463394.4882
ASW0189	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235174.7795	463389.7049
ASW0190	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235180.9268	463389.3874
ASW0191	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235180.4805	463385.0168
ASW0192	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	47	**Yes**	76.8	235183.9291	463385.4613
ASW0193	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	46	**Yes**	73	235181.7047	463380.7574
ASW0194	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235175.3034	463380.3128
ASW0195	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235180.6198	463376.9265
ASW0196	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	47	**Yes**	69	235180.5213	463372.4829
ASW0197	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235175.0241	463366.4853
ASW0198	05	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235183.5157	463360.0518
ASW0199	05	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235171.9356	463357.4180
ASW0200	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46.8	**Yes**	77.1	235183.7033	463376.1645
ASW0201	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	48.5	**Yes**	68.9	235185.7751	463371.7193
ASW0202	05	2	40.5-42.5	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235192.8440	463371.4225
ASW0203	06	2	42-44	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235196.6048	463374.1261
ASW0204	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	50	50	No	90	235193.8231	463376.1645

Table 2-2. Air Sparge Well Installation Details (Continued)

Air Sparge Well ID	Operation Location (Zone)	Well Diameter (inch)	Screen Interval (ft bls)	Screen Type	Boring Depth (feet)	Boring Length (feet)	Direction Boring	Boring Angle	Easting	Northing
ASW0205	06	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235193.6407	463358.8642
ASW0206	05	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	50	**Yes**	61.5	235188.8188	463375.9422
ASW0207	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	49	**Yes**	63.5	235186.1535	463389.4985
ASW0208	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	56	**Yes**	51.5	235192.8370	463388.4666
ASW0209	06	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	58	**Yes**	49	235188.6477	463385.2391
ASW0210	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	47	**Yes**	70	235194.3806	463384.4246
ASW0211	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	50.4	**Yes**	64.1	235186.1535	463380.8685
ASW0212	10	2	43-45	0.010-inch Slotted PVC w/ 1-foot sump	46	46	No	90	235192.9517	463380.9796
ASW0213	10	2	41-43	0.010-inch Slotted PVC w/ 1-foot sump	44	45	**Yes**	77	235196.8254	463379.8303

Notes:

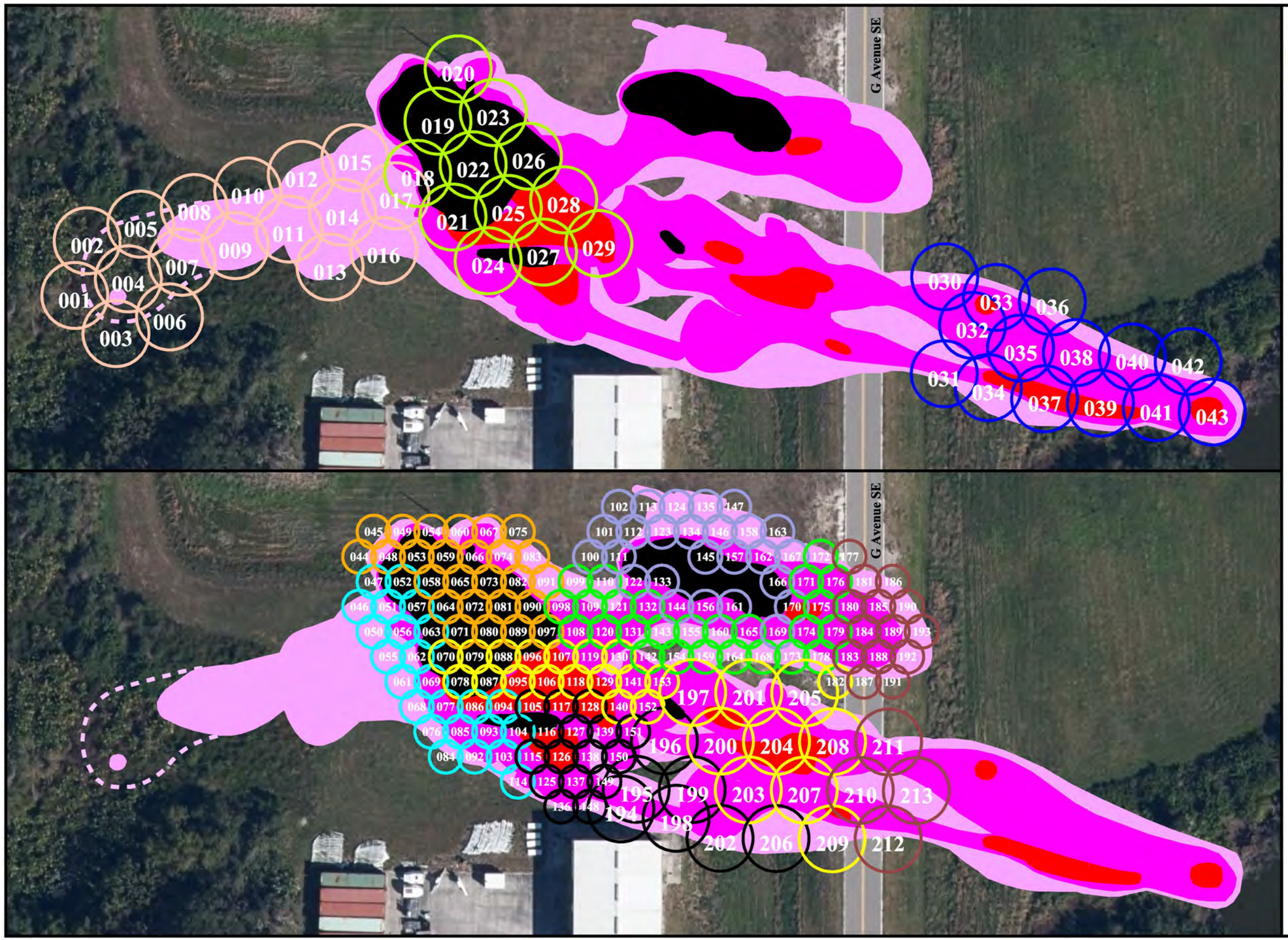
ft bls = feet below land surface.

All final air sparge well surface completion is subsurface.

Air sparge wells were installed between December 2, 2019 and January 29, 2020.

All air sparge well coordinates were collected by field hand-held Global Positioning System with submeter accuracy.

FIGURE 2-1 AIR SPARGING ZONE LAYOUT
SWMU 090, KENNEDY SPACE CENTER, FLORIDA



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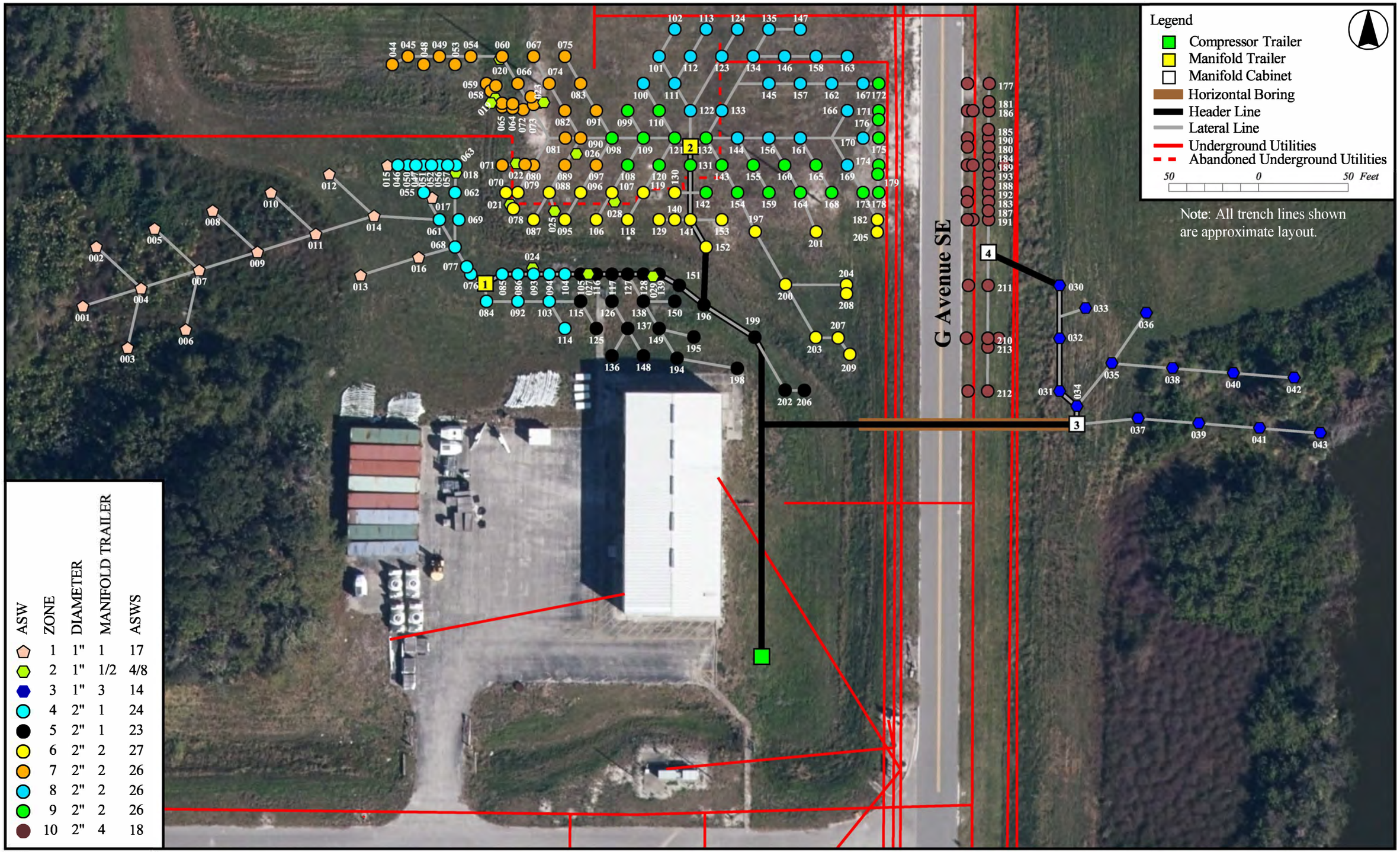

ASW	ZONE	DIAMETER	MANIFOLD TRAILER	ASWS
	1	1"	1	17
	2	1"	1/2	4/8
	3	1"	3	14
	4	2"	1	24
	5	2"	1	23
	6	2"	2	27
	7	2"	2	26
	8	2"	2	26
	9	2"	2	26
	10	2"	4	18

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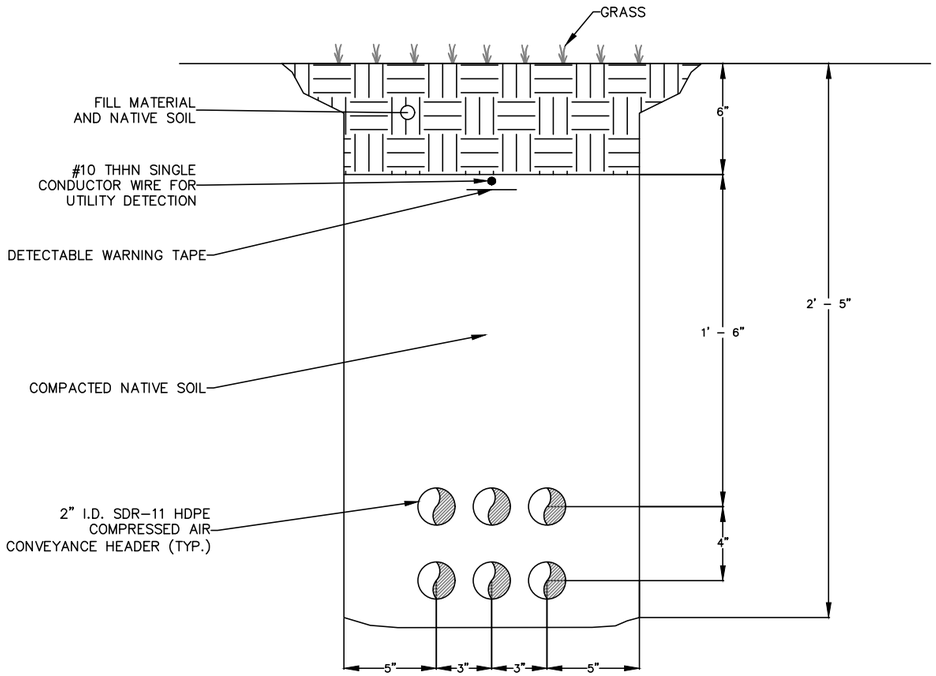
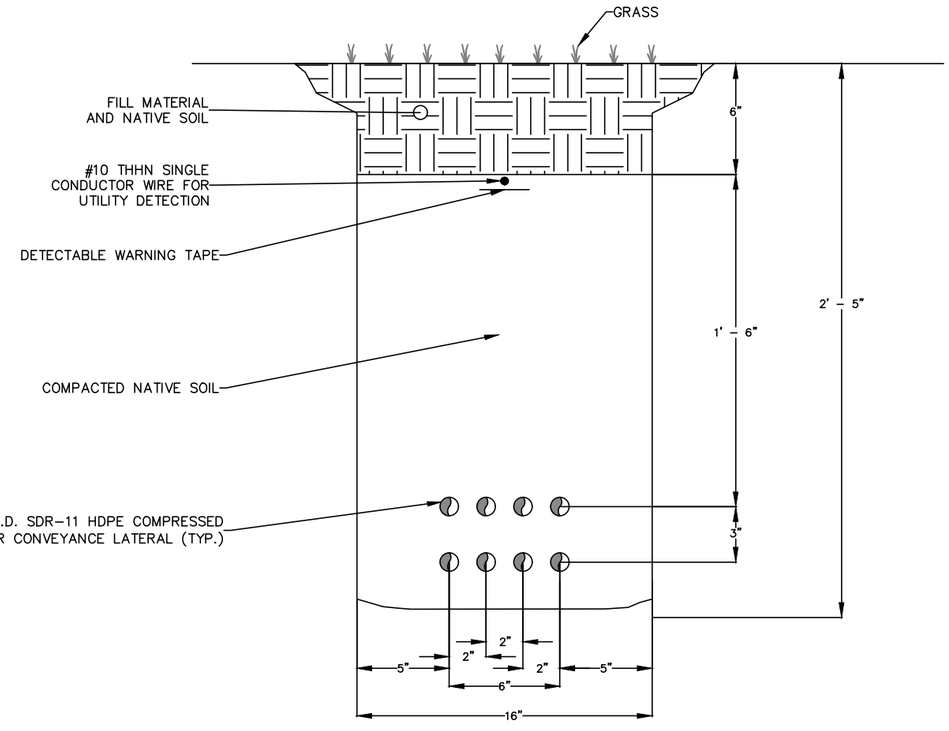


HEADER TRENCHING CROSS SECTION
NOT TO SCALE



LATERAL TRENCHING CROSS SECTION
NOT TO SCALE

FIGURE 2-4 AIR SPARGING PIPING AND INSTRUMENTATION DIAGRAM

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

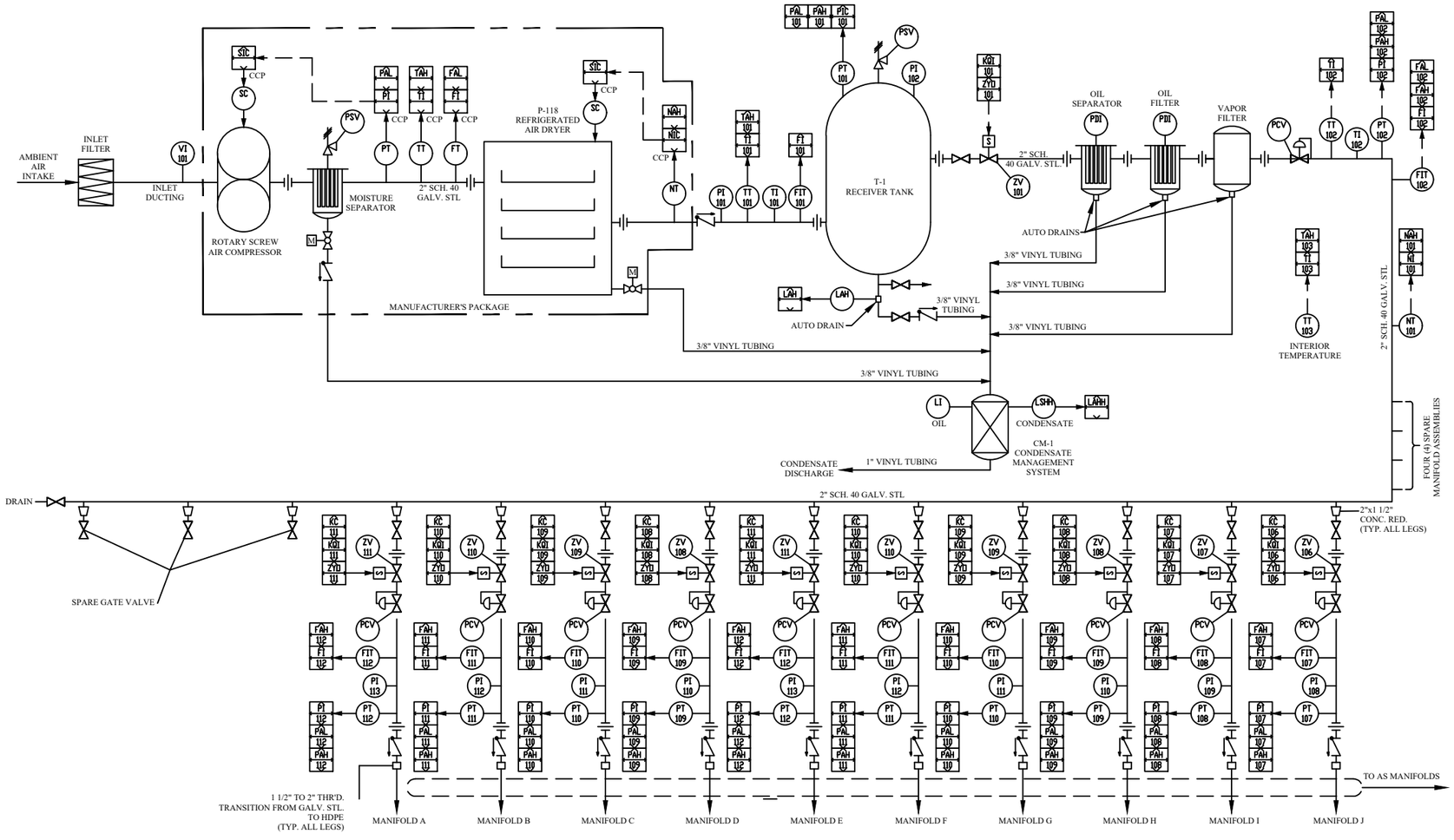
LEGEND

- VI X — VACUUM INDICATOR
- PT X — PRESSURE TRANSMITTER
- FT X — FLOW TRANSMITTER
- TT X — TEMPERATURE TRANSMITTER
- NT X — DEW POINT TRANSMITTER
- PI X — PRESSURE INDICATOR
- SC X — SPEED CONTROLLER
- PCV X — PRESSURE CONTROL VALVE
- PSV X — PRESSURE RELIEF VALVE
- ZV X — POSITIONING VALVE (SOLENOID VALVE)
- GATE VALVE
- S — SOLENOID VALVE
- CHECK VALVE
- PRESSURE CONTROL VALVE
- NEEDLE VALVE
- PRESSURE RELIEF VALVE
- AUTO DRAIN VALVE
- PIPING
- ELECTRICAL

SIC X — LOOP FUNCTION (SEE LIST BELOW); MAIN CONTROL PANEL DEVICE (EXCEPT AS NOTED); LOOP NUMBER

LOOP FUNCTIONS:

- SIC - SPEED CONTROLLER INDICATOR
- PIC - PRESSURE CONTROLLER INDICATOR
- NIC - DEW POINT CONTROLLER INDICATOR
- NAH - HIGH DEW POINT ALARM
- PAH - HIGH PRESSURE ALARM
- PAL - LOW PRESSURE ALARM
- TAH - HIGH TEMPERATURE ALARM
- FAL - LOW FLOW ALARM
- TI - TEMPERATURE INDICATOR
- FI - FLOW INDICATOR
- PI - PRESSURE INDICATOR
- ZYO - OPEN POSITION
- KC - TIME CONTROLLER
- KQI - TIME TOTALER (RUN TIME METER)
- CCP - COMPRESSOR CONTROL PANEL



NOT TO SCALE

SECTION III
BASELINE SAMPLING

A baseline groundwater monitoring event was conducted prior to start-up and operation of the AS system to verify levels of contamination identified in the IMWP (NASA, 2017a) and IWP (NASA, 2019b), as well as to provide a baseline for comparison during system operation. Air quality was monitored during sampling activities using a Photoionization Detector (PID).

3.1 GROUNDWATER SAMPLING METHODS

Baseline groundwater sampling was conducted from June 2-5, 2020 (before system start-up) and included the sampling of 27 performance monitoring wells (see Table 5-1 for list of baseline sampling wells). Groundwater sampling activities were conducted in accordance with the KSC Sampling and Analysis Plan (SAP) for the RCRA Program at KSC (NASA, 2017b) and FDEP Standard Operating Procedure FS 2200 (FDEP, 2017). Baseline depth-to-water was recorded on June 1, 2020. Peristaltic pumps were used for purging and sampling. Baseline dissolved oxygen (DO) concentrations were recorded, and VOC samples were collected using a low-flow sampling technique. During monitoring activities, PID readings were collected from the breathing zone continuously each day. No PID readings higher than background were observed. Samples were submitted to ENCO of Orlando, FL for analysis of VOCs via Method SW-846 8260B. Sample log sheets are provided in Appendix E, and chain-of-custody forms and laboratory analytical results are provided in Appendix F.

3.2 BASELINE GROUNDWATER RESULTS

Based on depth-to-water measurements collected during the baseline sampling event in June 2020, groundwater generally flows to the east/southeast toward the borrow ponds, as shown in Figures 3-1 through 3-3. For wells screened in the intermediate zone from 20-40 feet bls, groundwater flows towards the northeast with a shallow gradient before turning to the southeast and flowing at a steeper gradient toward the borrow pond to the east of G Avenue SE.

The results of the baseline groundwater sampling event for the contaminants of concern (COCs) (TCE, cDCE, trans-1,2-dichloroethene [tDCE], VC, and Freon 113) are summarized in

Table 3-1; this table also includes data from quarterly performance monitoring events, which are later discussed in Section V. Monitoring well locations (in relation to AS radius of influence) are presented on Figure 3-4, and baseline data is presented on Figures 5-14 through 5-16, which also shows data from the quarterly performance monitoring events later discussed in Section V.

TCE was detected in 17 of the 27 groundwater samples collected, with 13 of those samples above the NADC of 300 µg/L. The highest TCE concentration of 240,000 µg/L was observed at monitoring well MW0028, which is screened from 45 to 50 feet bls. In general, the highest TCE concentrations were detected in monitoring wells screened between 40 to 50 feet bls within SZ2 (160,000 µg/L at MW0027; 120,000 µg/L at MW0032; and 83,000 µg/L at MW0033).

Concentrations of cDCE ranged from less than 0.53 µg/L to 42,000 µg/L. The highest cDCE concentrations of 42,000 µg/L and 38,000 µg/L were measured in groundwater collected from MW0032 and MW0033, respectively. MW0032 and MW0033 are both screened in SZ2 (40 to 45 ft bls and 45 to 50 ft bls, respectively), within the western HS2 area. tDCE was only detected in groundwater collected from two monitoring wells (MW0035 and MW0038) with concentrations of 58 I µg/L and 2.8 µg/L, respectively. It should be noted though that nine of the samples with non-detect results for tDCE were collected from monitoring wells with elevated cDCE concentrations; one of the non-detect locations had detection limits above the GCTL for tDCE of 100 µg/L, and one sample with a non-detect result had a detection limit above the NADC of 1,000 µg/L.

VC was detected above the GCTL and NADC in groundwater collected from 24 of the 27 monitoring wells sampled during the June 2020 baseline sampling event. The highest VC concentration of 41,000 µg/L was detected in MW0031, which is screened from 30 to 40 feet bls in SZ2, within the western hot spot, HS2.

Concentrations of Freon-113 in groundwater collected during the June 2020 baseline sampling event ranged from less than 0.73 µg/L to 82,000 µg/L. All detections of Freon-113 were below the GCTL of 210,000 µg/L.

3.3 BASELINE AIR MONITORING

During construction activities, PID readings were collected from the breathing zone continuously each day. No PID readings were detected above pre-construction ambient air conditions.

Prior to and during system start-up, 8-hour composite air samples were collected from two locations, as shown on Figure 3-4. HMFN-VMP01 is located in the vicinity of the AS and manifold trailers and HMFN-VMP02 is located on the northern edge of the M7-1011 parking lot. The air samples were collected on five sampling dates between August 18, 2020 and September 9, 2020 using a 6-liter Summa canister and an 8-hour composite pressure regulator. The Summa canister samples were analyzed by ENCO Laboratories, Inc. of Jacksonville, Florida, using USEPA Method TO-15.

No analytes were detected at concentrations exceeding the Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs) or American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) during these sampling events. Table 3-2 provides a summary of the air sample collection dates and laboratory analytical results for corresponding groundwater COCs. Laboratory analytical results are provided in Appendix F.

Table 3-1. Baseline and Year 1 Performance Monitoring Analytical Results

Sample Location	Screened Interval (feet bls)	Sample Date	TCE	cDCE	tDCE	VC	Freon 113
MW0002	30 to 40	6/4/2020	**49000**	**5000**	360 U	**380 I**	**19000**
		10/29/2020	**2000**	**440**	18 U	18 U	**2200**
		2/1/2021	**690**	**140**	7.3 U	7.1 U	**1100**
		4/22/2021	**320**	**86**	7.3 U	7.1 U	**850**
		7/22/2021	**120**	**51**	3.6 U	3.6 U	**470**
MW0004	5 to 15	6/2/2020	8.9 U	**840**	7.3 U	**40**	7.3 U
		10/28/2020	**46**	**36**	**2.7**	**1.9 I**	0.73 U
		1/31/2021	**33**	**12**	**1.1 I**	0.71 U	**1.1 I**
		4/21/2021	**29**	**6.5**	0.73 U	0.71 U	**1.4 J**
		7/22/2021	**12**	**3.6**	0.73 U	0.71 U	0.73 U
MW0008	20 to 30	6/4/2020	**4100**	**6300**	150 U	**700**	**12000**
		10/27/2020	**60**	**330**	**2.9**	**12**	**12**
		1/29/2021	**14**	**41**	**0.76 I**	**0.89 I**	**3.8**
		4/22/2021	**14**	**42**	0.73 U	**1.6 J**	**2.1 J**
		7/22/2021	**3.6**	**18**	0.73 U	**1.2 I**	**1.6 I**
MW0009	10 to 15	6/3/2020	**320**	**6700**	73 U	**4400**	73 U
		10/27/2020	**190**	**640**	7.3 U	**88**	7.3 U
		1/31/2021	**49**	**360**	3.6 U	**30**	3.6 U
		4/20/2021	**7.3**	**74**	0.73 U	**11**	0.73 U
		7/21/2021	**13**	**76**	0.73 U	**9.2**	0.73 U
MW0011	20 to 30	6/3/2020	44 U	**2300**	36 U	**3400**	36 U
		10/28/2020	4.4 U	**430**	**6.8 I**	**140**	3.6 U
		1/29/2021	0.89 U	**49**	**0.91 I**	**23**	0.73 U
		4/20/2021	0.89 U	**11**	0.73 U	**4.3**	0.73 U
		7/21/2021	0.89 U	**5.8**	0.73 U	**8.1**	0.73 U
MW0016	5 to 15	10/28/2020	0.89 U	**190**	**6.9**	**17**	0.73 U
		2/1/2021	0.89 U	**71**	**6**	**8.7**	0.73 U
		4/21/2021	0.89 U	**66**	**5.7**	**10**	0.73 U
		7/22/2021	0.89 U	**6.3**	0.73 U	**0.91 I**	0.73 U
MW0024	55 to 65	6/4/2020	**3.5**	0.53 U	0.73 U	**0.75 I**	0.73 U
		10/28/2020	**1.1 I**	**0.76 I**	0.73 U	0.71 U	0.73 U
		1/29/2021	0.89 U	0.53 U	0.73 U	0.71 U	0.73 U
		4/22/2021	**0.9 J**	0.53 U	0.73 U	0.71 U	0.73 U
		7/22/2021	0.89 U	0.53 U	0.73 U	0.71 U	0.73 U
MW0027	40 to 45	6/5/2020	**160000**	**17000**	360 U	**1200**	**11000**
		10/28/2020	**65000**	**2100 I**	730 U	710 U	**23000**
		2/1/2021	**50000**	**2000**	360 U	360 U	**21000**
		4/21/2021	**98000**	**3200**	730 U	710 U	**27000**
		7/20/2021	**97000**	**2700**	730 U	710 U	**37000**
MW0028	45 to 50	6/5/2020	**240000**	**11000**	730 U	710 U	**81000**
		10/29/2020	**400000**	**9800**	1500 U	1400 U	**120000**
		2/1/2021	**460000**	**11000**	730 U	710 U	**110000**
		4/21/2021	**430000**	**16000**	3600 U	3600 U	**140000**
		7/20/2021	**490000**	**15000**	3600 U	3600 U	**120000**

Table 3-1. Baseline and Year 1 Performance Monitoring Analytical Results (Continued)

Sample Location	Screened Interval (feet bls)	Sample Date	TCE	cDCE	tDCE	VC	Freon 113
MW0029	10 to 20	6/4/2020	89 U	13000	73 U	610	1700
		10/27/2020	66	310	5.1 I	22	3.6 U
		1/29/2021	25	48	1.4 I	4.1	3.2
		4/19/2021	13	21	0.73 U	1.6 J	1.3 J
		7/22/2021	5.6	16	0.73 U	0.71 U	0.96 I
MW0030	20 to 30	6/4/2020	14000	15000	150 U	3700	17000
		10/27/2020	180	450	4 I	18	15
		1/29/2021	180	150	1.8 U	6 I	14
		4/19/2021	61	66	0.73 U	5.5	6
		7/22/2021	15	35	0.73 U	2.2 I	3.4
MW0031	30 to 40	6/4/2020	8400	15000	360 U	41000	360 U
		10/27/2020	1100	1600	15 U	54	15 U
		1/29/2021	510	490	7.3 U	13 I	7.3 U
		4/19/2021	1400	1500	7.4 J	46	7.3 U
		7/22/2021	310	570	7.3 U	22 I	7.3 U
MW0032	40 to 45	6/4/2020	120000	42000	1500 U	1800 I	1500 U
		10/27/2020	14000	12000	150 U	430 I	150 U
		1/29/2021	7400	5700	73 U	170 I	73 U
		4/20/2021	5400	5200	73 U	170 J	73 U
		7/22/2021	3600	4900	36 U	260	36 U
MW0033	45 to 50	6/4/2020	83000	38000	730 U	1800 I	730 U
		10/27/2020	22000	24000	180 U	950	180 U
		1/29/2021	22000	21000	180 U	990	180 U
		4/20/2021	23000	21000	290 U	910 J	290 U
		7/22/2021	11000	15000	150 U	890	150 U
MW0034	10 to 20	6/3/2020	18 U	2000	15 U	200	15 U
		10/26/2020	13	74	1.4 I	8.9	3
		1/29/2021	6.3	15	0.73 U	1.4 I	1.1 I
		4/21/2021	6.4	11	0.73 U	0.71 U	0.73 U
		7/21/2021	1.1 I	5.7	0.73 U	0.71 U	0.73 U
MW0035	30 to 40	6/4/2020	200	4500	58 I	6500	36 U
		10/26/2020	6.5	240	1.2 I	14	0.73 U
		1/29/2021	9.8	81	1.3 I	5.5	0.73 U
		4/21/2021	2.5	18	0.73 U	0.95 J	0.73 U
		7/21/2021	0.89 U	7.9	0.73 U	0.71 U	0.73 U
MW0036	10 to 20	6/3/2020	2.2 U	11	1.8 U	230	1.8 U
		10/28/2020	0.89 U	56	0.73 U	3.3	0.73 U
		1/29/2021	0.89 U	11	0.73 U	1.2 I	0.73 U
		4/20/2021	0.89 U	2.5	0.73 U	0.71 U	0.73 U
		7/21/2021	0.89 U	0.6 I	0.73 U	0.71 U	0.73 U
MW0037	5 to 15	6/2/2020	4.4 U	150	3.6 U	500	3.6 U
		10/27/2020	0.89 U	5.4	1.4 I	23	0.73 U
		1/29/2021	0.89 U	2.3 I	0.74 I	4.8	0.73 U
		4/21/2021	0.89 U	3.1	1.4 J	120	0.73 U
		7/20/2021	0.89 U	0.84 I	0.73 U	14	0.73 U

Table 3-1. Baseline and Year 1 Performance Monitoring Analytical Results (Continued)

Sample Location	Screened Interval (feet bls)	Sample Date	TCE	cDCE	tDCE	VC	Freon 113
MW0038	15 to 25	6/2/2020	0.89 U	0.53 U	**2.8**	**96**	0.73 U
		10/27/2020	0.89 U	0.53 U	**1.7 I**	**74**	0.73 U
		1/29/2021	0.89 U	0.53 U	0.73 U	**10**	0.73 U
		4/21/2021	0.89 U	**0.58 J**	0.73 U	**22**	0.73 U
		7/20/2021	0.89 U	0.53 U	0.73 U	**4**	0.73 U
MW0039	30 to 40	6/2/2020	**8400**	**16000**	150 U	**1300**	150 U
		10/26/2020	**290**	**3300**	36 U	**250**	36 U
		1/31/2021	**38 I**	**1400**	18 U	**210**	18 U
		4/19/2021	**11 J**	**680**	7.3 U	**200**	7.3 U
		7/20/2021	**6 I**	**280**	3.6 U	**150**	3.6 U
MW0040	40 to 45	6/2/2020	**1400**	**7600**	73 U	**2000**	73 U
		10/26/2020	**7.5**	**83**	**1.8 I**	**20**	0.73 U
		1/31/2021	**12**	**56**	0.73 U	**12**	0.73 U
		4/19/2021	**2.2 J**	**17**	0.73 U	**1.5 J**	0.73 U
		7/20/2021	**2.4 I**	**19**	0.73 U	**1.7 I**	0.73 U
MW0041	30 to 40	6/3/2020	**1 I**	**5.8**	0.73 U	**15**	0.73 U
		10/28/2020	**26**	**55**	**0.75 I**	**17**	0.73 U
		1/28/2021	**23**	**99**	**0.95 I**	**32**	0.73 U
		4/19/2021	**52**	**210**	**1.6 J**	**43**	0.73 U
		7/21/2021	**19**	**92**	**0.77 I**	**28**	0.73 U
MW0042	40 to 45	6/3/2020	**2100**	**2800**	36 U	**1500**	36 U
		10/28/2020	**600**	**2100**	15 U	**550**	15 U
		1/28/2021	**540**	**2600**	36 U	**170**	36 U
		4/22/2021	**960**	**3800**	36 U	**180**	36 U
		7/21/2021	**1100**	**3400**	18 U	**140**	18 U
MW0043	30 to 40	6/2/2020	**15**	**75**	3.6 U	3.6 U	**1400**
		10/26/2020	**29**	**85**	0.73 U	0.71 U	**26**
		1/28/2021	**25**	**89**	0.73 U	0.71 U	**1.8 I**
		4/22/2021	**7.8**	**52**	0.73 U	0.71 U	**14**
		7/21/2021	**2 I**	**15**	0.73 U	0.71 U	**0.88 I**
MW0044	40 to 45	6/3/2020	**1100**	**930**	15 U	14 U	**82000**
		10/26/2020	**510**	**780**	150 U	140 U	**15000**
		1/28/2021	**480 I**	**540 I**	360 U	360 U	**32000**
		4/19/2021	**460 I**	**900 I**	290 U	280 U	**27000**
		7/21/2021	**220 I**	**340 I**	150 U	140 U	**17000**
MW0045	25 to 35	6/5/2020	89 U	**1500**	73 U	**9400**	73 U
		10/28/2020	**2.3 I**	**34**	**1.7 I**	**23**	0.73 U
		2/1/2021	**8.1**	**6.3**	**0.94 I**	**5.9**	0.73 U
		4/21/2021	**1.2 J**	**6.2**	0.73 U	**1.6 J**	0.73 U
		7/21/2021	0.89 U	**1.8 I**	0.73 U	**1.9 I**	0.73 U
MW0046	10 to 20	6/2/2020	2.2 U	**170**	1.8 U	**280**	1.8 U
		10/27/2020	0.89 U	**51**	0.73 U	**37**	0.73 U
		1/29/2021	0.89 U	**7.3**	0.73 U	**6**	0.73 U
		4/21/2021	0.89 U	**2.5**	0.73 U	0.71 U	0.73 U
		7/20/2021	0.89 U	**0.6 I**	0.73 U	0.71 U	0.73 U

Table 3-1. Baseline and Year 1 Performance Monitoring Analytical Results (Continued)

Sample Location	Screened Interval (feet bls)	Sample Date	TCE	cDCE	tDCE	VC	Freon 113
MW0047	20 to 30	6/2/2020	1.8 U	**9.8**	1.5 U	**160**	1.5 U
		10/27/2020	2.2 U	**17**	1.8 U	**150**	1.8 U
		1/29/2021	0.89 U	**17**	0.73 U	**37**	0.73 U
		4/21/2021	0.89 U	**2.4 J**	0.73 U	**0.9 J**	0.73 U
		7/20/2021	0.89 U	**0.76 I**	0.73 U	0.71 U	0.73 U

Notes:

Concentrations in micrograms per liter (µg/L).
Bold indicates a concentration is greater than the method detection limit.
Shading indicates State of Florida Groundwater Cleanup Target Level (GCTL) exceedance,
TCE = 3 µg/L, cDCE = 70 µg/L, tDCE = 100 µg/L, VC = 1 µg/L, Freon 113 = 210,000 µg/L.
bls = below land surface.
U = Value was reported as below the method detection limit, therefore the detection limit is shown.
I = Value is between method detection limit and practical quantitation limit.
cDCE = cis-1,2-dichloroethene.
TCE = trichloroethene.
tDCE = trans-1,2-dichloroethene.
VC = vinyl chloride.
MW0024, MW0028, and MW0033 are screened below the AS treatment interval of 45 feet bls

Table 3-2. Air Sample Analytical Results

LOCATION ID	SAMPLE ID	SAMPLE DATE	TCE ($\mu g/m^3$)	cDCE ($\mu g/m^3$)	tDCE ($\mu g/m^3$)	VC ($\mu g/m^3$)	Freon 113 ($\mu g/m^3$)
HMPN-VMP0001	HMPN-VMP1-FIELD-20200818	08/18/2020	2.6 U	2.1 U	1.7 U	2 U	3.4 U
HMPN-VMP0002	HMPN-VMP2-P.LOT-20200818	08/18/2020	2.5 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0001	HMPN-VMP1-FIELD-20200820	08/20/2020	39	20	1.6 U	3.4 I	48
HMPN-VMP0002	HMPN-VMP2-P.LOT-20200820	08/20/2020	2.5 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0001	HMPN-VMP1-FIELD-20200826	08/26/2020	18 I	30	2.1 U	32	150
HMPN-VMP0002	HMPN-VMP2-P.LOT-20200826	08/26/2020	2.6 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0001	HMPN-VMP1-FIELD-20200902	09/02/2020	46	93	3.8 I	34	57
HMPN-VMP0002	HMPN-VMP2-P.LOT-20200902	09/02/2020	2.6 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0001	HMPN-VMP1-FIELD-20200909	09/09/2020	24	59	1.8 I	11	22 I
HMPN-VMP0002	HMPN-VMP2-P.LOT-20200909	09/09/2020	2.6 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0001	HMPN-VMP01-20201111	11/11/2020	2.5 U	2 U	1.7 U	1.9 U	3.2 U
HMPN-VMP0002	HMPN-VMP02-20201111	11/11/2020	2.4 U	2 U	1.6 U	1.9 U	3.2 U
HMPN-VMP0001	HMPN-VMP01-FIELD-20210210	02/10/2021	2.5 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0002	HMPN-VMP02-PLOT-20210210	02/10/2021	2.5 U	2 U	1.7 U	1.9 U	3.2 U
HMPN-AMB0001	HMPN-AMB0001-FIELD-20210426	04/26/2021	2.5 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-AMB0002	HMPN-AMB0002-PLOT-20210426	04/26/2021	2.5 U	2 U	1.7 U	1.9 U	3.3 U
HMPN-VMP0001	HMPN-VMP0001-FIELD-20210726	07/26/2021	2.8 U	2.2 U	1.9 U	2.1 U	3.8 I
HMPN-VMP0002	HMPN-VMP0002-PILOT-20210726	07/26/2021	2.6 U	2.1 U	1.8 U	2 U	3.4 U
OSHA PEL	--	--	100,000	NV	NV	NV	7,600,000
ACGIH TLV	--	--	10,000	NV	NV	1,000	1,000,000

$\mu g/m^3$ - micrograms per cubic meter.
U = Value was reported as below the method detection limit, therefore the detection limit is shown.
I = Value is between method detection limit and practical quantitation limit.
cDCE = cis-1,2-dichloroethene.
TCE = Trichloroethene.
tDCE = trans-1,2-dichloroethene
VC = vinyl chloride.
OSHA PEL refers to the Occupational Safety and Health Administration Permissable Exposure Limits
ACGIH TLV refers to the American Conference of Governmental Industrial Hygienists Thershold Limit Values
NV = No Value

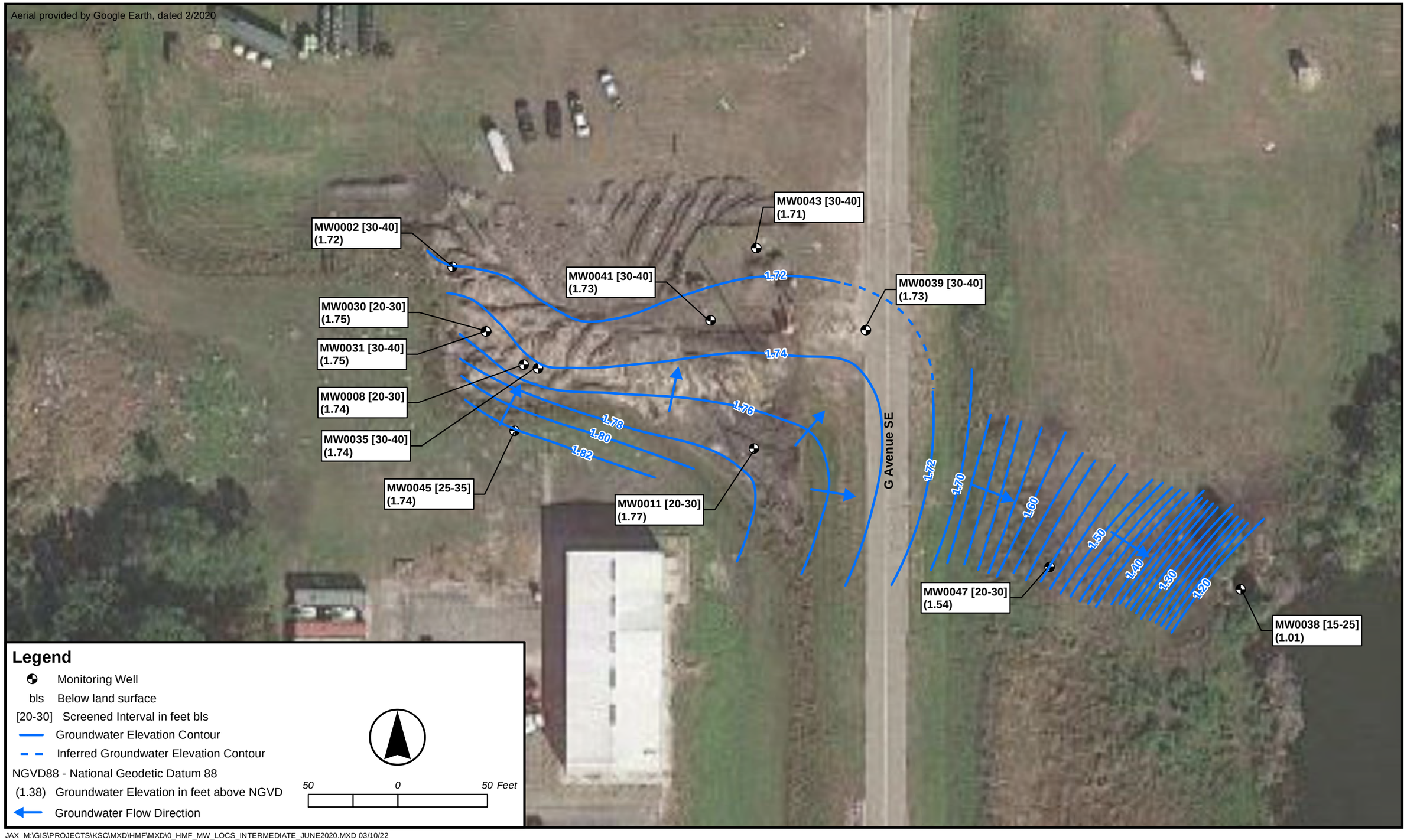
FIGURE 3-1 JUNE 2020 SHALLOW GROUNDWATER CONTOUR MAP [0-20 FEET BLS]

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

JAX M:\GIS\PROJECTS\KSC\MXD\HMF\MXD\0_HMF_MW_LOCS_SHALLOW_JUNE2020.MXD 03/10/22

FIGURE 3-2 JUNE 2020 INTERMEDIATE GROUNDWATER CONTOUR MAP (20-40 FEET BLS)

SWMU 090, KENNEDY SPACE CENTER, FLORIDA



JAX M:\GIS\PROJECTS\KSC\MXD\HMF\MXD\0_HMF_MW_LOCS_INTERMEDIATE_JUNE2020.MXD 03/10/22

FIGURE 3-3 JUNE 2020 DEEP GROUNDWATER CONTOUR MAP (>40 FEET BLS)
SWMU 090, KENNEDY SPACE CENTER, FLORIDA

HMFN CC-PMR
Revision: 0
March 2022

Aerial provided by Google Earth, dated 2/2020

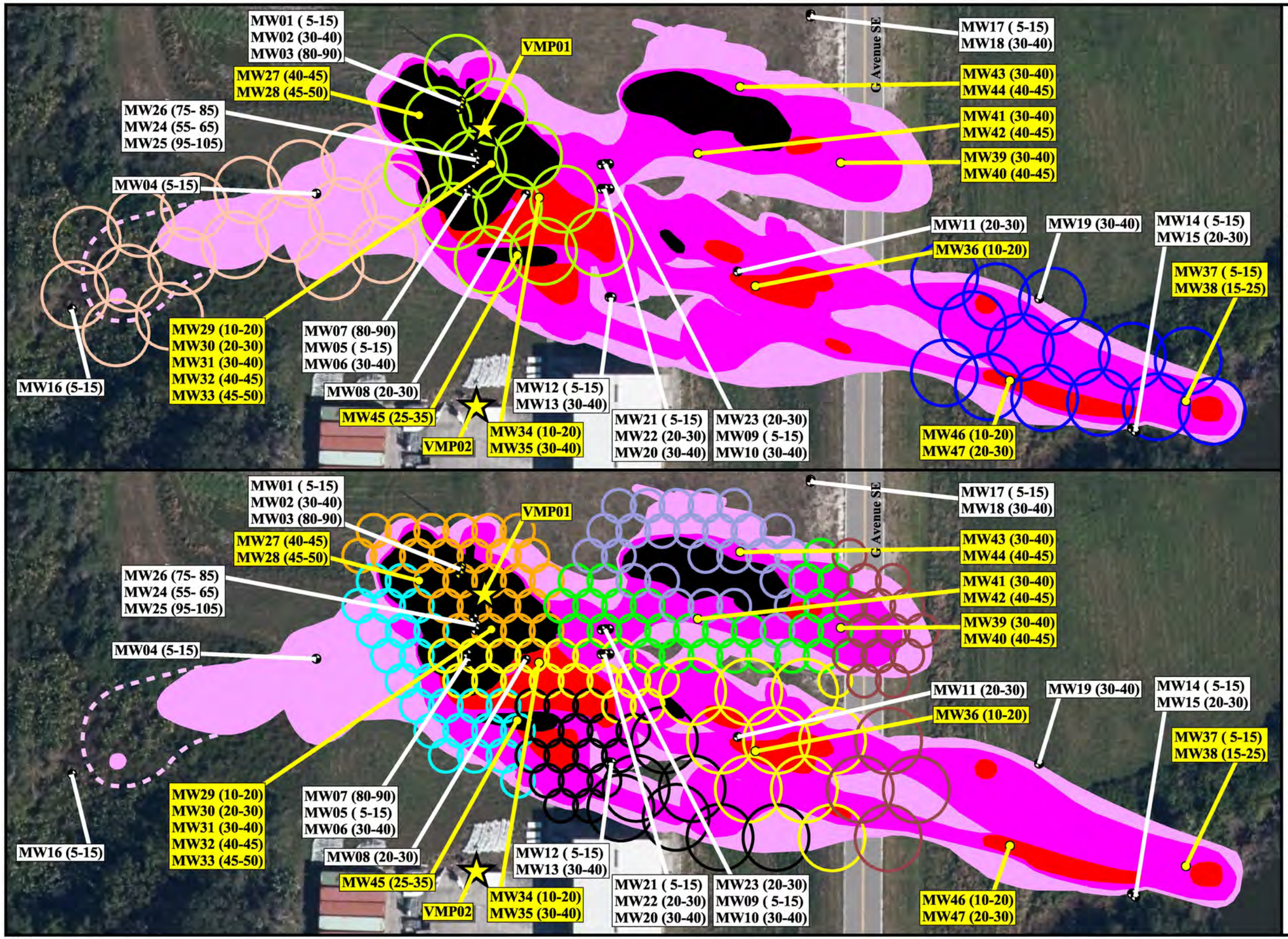
MW0028 [45-50] (1.74)
MW0027 [40-45] (1.75)
MW0032 [40-45] (1.73)
MW0033 [45-50] (1.73)
MW0024 [55-65] (1.72)*
MW0044 [40-45] (1.72)
MW0042 [40-45] (1.74)
MW0040 [40-45] (1.69)
1.74
1.72
1.70
G Avenue SE

Legend

- Monitoring Well
- bls Below land surface
- [40-45] Screened Interval in feet bls
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour
- * - Deeper values not included in contour
- NGVD88 - National Geodetic Datum 88
- (1.38) Groundwater Elevation in feet above NGVD
- Groundwater Flow Direction

50 0 50 Feet

JAX M:\GIS\PROJECTS\KSC\MXD\HMF\MXD\0_HMF_MW_LOCS_DEEP_JUNE2020.MXD 03/10/22



Legend

- Existing Monitoring Well
- New Monitoring Well
- Summa Canister Location
- Source Zone TCE 11,000 ug/L
- 100xNADC
- 10xNADC
- NADC
- NADC (inferred)

Notes:

1) Monitoring well designations have been abbreviated on figure as MW01, full RIS designation would be HMPN-MW0001
2) Monitoring well label includes screen interval in feet below land surface
3) Treatment zones 1, 2, and 3 shown on upper image, remaining zones shown on lower image

ASW ROI	ZONE	DEPTH BLS	ROI FT	ASWS
	1	25'	20'	17
	2	32'	20'	12
	3	32'	20'	14
	4	45'	10'	24
	5	45'	10'/20'	16/7
	6	45'	20'	27
	7	45'	10'	26
	8	45'	10'	26
	9	45'	10'	26
	10	45'	20'	18

60 0 60 Feet

20220310

SECTION IV
SYSTEM OPERATION AND MAINTENANCE

This section identifies the activities conducted during start-up and commissioning, full-scale operation, and Year 1 OM&M for the HMFN AS system. Air monitoring activities are also discussed in this section. The Year 1 reporting period for AS operations presented in this report runs from August 2020 to August 2021. System start-up and full-scall operational information was presented to the KSCRT during the February 2021 meeting (Meeting Minute 2102-M12) and January 2022 meeting (Meeting Minute 2201-M03).

4.1 SYSTEM START-UP

AS system commissioning and start-up procedures were initiated on August 19, 2020 and continued through September 4, 2020. The objective of commissioning was to confirm that the AS system had been constructed as designed and operates as specified to facilitate any necessary modifications to the system, as well as to gather and evaluate initial operational data.

The inspections verified that all the components of the system, below and above ground, were properly installed in accordance with the IWP (NASA, 2019b). A site-specific checklist was completed to ensure that all equipment and instrumentation were properly prepared and lubricated and that protective covers on rotating equipment were in place. Inspections of equipment lockout, safety valves and/or pressure relief devices, and site security devices were also completed. Performance checks and individual component testing were performed to verify that the manifold legs cycled appropriately.

Start-up of the AS system was performed sequentially, with focus on each specific unit at a given time. The strategy for start-up was to conduct these activities sequentially in order to compare observations and test data to design and performance criteria. The start-up check-out involved demonstrating proper functionality of the fail-safe instrumentation and logic, rotary screw air compressor, refrigerated air dryer, all valves and orifices, and condensate treatment. All related health, safety, and emergency response procedures were in place and reviewed before the start-

up phase of operation. Before process systems were started, a final check was conducted on the alignment and positioning of all motor drives, valves, safety devices, and control setpoints.

After operation was verified and acceptable at the AS system location, conditions were inspected at the distribution manifolds. At the distribution manifolds, all wells were initially set at 5.0 cfm and at pressures of 15, 18, and 27 psig in the shallow, shallow-intermediate, and intermediate depths, respectively. The distribution manifolds were checked to ensure that the wellhead pressure applied to each well was within design. The pressure regulators at the system manifolds were adjusted to reach the following pressures at the lateral pressure gauges:

- Leg 1 (shallow) – 15.0 psig;
- Leg 2 (shallow intermediate) – 18.3 psig;
- Leg 3 (shallow-intermediate) – 18.3 psig;
- Leg 4 (intermediate) – 26.8 psig;
- Leg 5 (intermediate) – 26.8 psig;
- Leg 6 (intermediate) – 26.8 psig;
- Leg 7 (intermediate) – 26.8 psig;
- Leg 8 (intermediate) – 26.8 psig;
- Leg 9 (intermediate) – 26.8 psig; and
- Leg 10 (intermediate) – 26.8 psig.

After the system was running within the expected operating conditions and in accordance with the flow design provided in Table 4-1, the entire system was checked. Readings for flow and pressure at each AS well were collected, as well as operational flows, pressures, and temperatures at all monitoring points in the system. Field data recorded during system start-up included temperature and pressure readings at the air dryer discharge and manifold legs, and the total flow from the discharge of the air compressor and manifold legs. In addition, headspace within select performance monitoring wells was screened once per week for the first four weeks of operation with a PID for health and safety monitoring, as well as to verify surface emissions of COCs were in compliance with the KSC Title V Air Operation Permit. During the start-up phase, OM&M activities were performed daily during Week 1 to conduct troubleshooting and

debugging activities, as well as to ensure that the system operated as designed. The equipment operations manual was followed for detailed direction of system OM&M.

Start-up activities concluded when the design and equipment performance was documented to comply with specifications, and the system was ready for transition into the OM&M phase. All relevant observations collected in the start-up field logbook are provided in Appendix G. System adjustments were made until the system reached a steady-state condition wherein all design criteria were satisfied. Steady-state operation occurred when all systems were running without shutdowns, the mechanical systems were functioning, and the flowrates stabilized. At that point, commissioning and startup of the system was considered complete.

4.2 SYSTEM OPERATION

Following completion of commissioning and start-up activities on September 4, 2020, the AS system entered steady-state operation. Prove-out OM&M was performed for the remaining first month of operation to ensure all components of the AS system continued to operate within the design parameters.

Following Month 1 of operation, the remedial system operated as a stand-alone system and only required monthly OM&M visits. Monthly OM&M visits included the following:

- Inspection of the AS system for leakage and excessive vibration, noise, or temperature;
- Inspection of oil levels and lubrication;
- Inspection of the condensate treatment system;
- Inspection of the refrigerated air dryer;
- Assessment of differential pressure across filtration units and process equipment;
- Recording of system operational data and comparing data to design conditions and previous operating data; and
- Performing housekeeping.

The system was operated in automatic mode, with the ON/OFF/AUTO and START/STOP functions of the system controlled by the Programmable Logic Controller (PLC) and observed through a Windows-based Human-Machine Interface (HMI). Table 4-1 shows the initial flow

design and pulse cycle that ran from start-up to February 2021, as well as the modified flow and pulse cycle from February 2021 onward based on optimization and balancing. Air sparging flows were able to consistently meet the design flow rate of 5 cubic feet per minute (cfm). During each site visit, the AS wells were observed to meet the design pressures for each respective depth of 15.0 pound per square inch (psi) (shallow depth), 18.3 psi (shallow-intermediate depth), and 26.8 psi (intermediate depth).

The system was shut down for various monitoring and maintenance activities throughout the Year 1 operational period. The AS system (including receiver tank, manifolds, etc.) and associated process lines were depressurized prior to conducting maintenance activities. The AS system was shut-down approximately one week prior to each groundwater sampling event in October 2020, January/February 2021, April 2021, and July 2021, and during completion of professional surveying in March 2021. Additional system shutdowns included:

- An air compressor general alarm in February 2021
- Receiver tank high pressure in March 2021
- HMI malfunction and firmware update in May 2021
- 8,000-hour compressor service in August 2021
- Cleaning of a minor clog in the oil-water separator in August 2021

A summary of system runtime and system downtime during Year 1 is provided in Table 4-2. The overall runtime over the reporting period (August 2020 to August 2021) was 81.7%.

Table 4-1. Pulsing Flow Balance

August 2020 (start-up) to February 2021 (Initial Design Balance)

Zone	Number of AS Wells	Flow Per Well (cfm)	Total Zone Flow (cfm)	Time						Operational Hours/Day	cf/day
				0:00	4:00	8:00	12:00	16:00	20:00		
Zone 1	17	5	85	-	-	-	85	85	-	8	40,800
Zone 2	12	5	60	60	-	60	-	60	-	12	43,200
Zone 3	14	5	70	70	70	-	-	70	-	12	50,400
Zone 4	24	5	120	120	-	120	-	120	-	12	86,400
Zone 5	23	5	115	-	115	-	115	-	115	12	82,800
Zone 6	27	5	135	135	135	135	-	135	-	16	129,600
Zone 7	26	5	130	-	130	130	130	-	130	16	124,800
Zone 8	25	5	125	125	-	125	-	125	125	16	120,000
Zone 9	26	5	130	-	130	-	130	-	130	12	93,600
Zone 10	19	5	95	95	-	-	95	-	95	12	68,400
Total AS Wells	**213**	**Total Flow (cfm)**		**605**	**580**	**570**	**555**	**595**	**595**	**128**	**-**
		Within System		Under	Under	Under	Under	Under	Under	(Target 90%)	
		Compressor Duty		93%	90%	88%	86%	92%	92%		
		Wells Operating		121	116	114	111	119	119		

System Compressor: Atlas Copco GA90+VSD-175-AFF (125 HP) 230/460V/3P motor operating at 103-648 cfm at 102 psi

AS - air sparge.

cfm - cubic feet per minute.

cf - cubic feet.

Table 4-1. Pulsing Flow Balance (continued)

February 2021 to August 2021 (Optimized Balance)

Zone	Number of AS Wells	Flow Per Well (cfm)	Total Zone Flow (cfm)	Time						Operational Hours/Day	cf/day
				0:00	4:00	8:00	12:00	16:00	20:00		
Zone 1	17	5	85	-	85	-	-	-	85	8	40,800
Zone 2	12	5	60	60	60	60	-	60	-	16	57,600
Zone 3	14	5	70	-	-	70	70	-	-	8	33,600
Zone 4	24	5	120	-	120	120	-	120	120	16	115,200
Zone 5	23	5	115	-	115	-	115	115	-	12	82,800
Zone 6	27	5	135	135	-	-	135	135	135	16	129,600
Zone 7	26	5	130	130	130	130	-	130	130	20	156,000
Zone 8	25	5	125	125	-	125	125	-	125	16	120,000
Zone 9	26	5	130	130	-	-	130	-	-	8	62,400
Zone 10	19	5	95	-	95	95	-	-	-	8	45,600
Total AS Wells	**213**	**Total Flow (cfm)**		**580**	**605**	**600**	**575**	**560**	**595**	**128**	**840,000**
		Within System		Under	Under	Under	Under	Under	Under	(Target 90%)	
		Compressor Duty		90%	93%	93%	89%	86%	92%		
		Wells Operating		116	121	120	115	112	119		

System Compressor: Atlas Copco GA90+VSD-175-AFF (125 HP) 230/460V/3P motor operating at 103-648 cfm at 102 psi

AS = air sparge.

cfm = cubic feet per minute.

cf = cubic feet.

Table 4-2. Air Sparge System Operational Runtime

Total Available Time			System Operational Time				Downtime Contributing Factor
Month	**Days In Month**	**Hours in Month**	**Downtime (day)**	**Downtime (hour)**	**Runtime (hour)**	**Runtime (%)**	
August 2020	0	0	0.00	0	0	0%	System Commissioning
September 2020	30	720	0.00	0	720	100%	System Start-up. Minor commissioning conducted, adjusting alarms for operating parameters
October 2020	31	744	10.50	252	492	66%	Performance monitoring sampling
November 2020	30	720	0.00	0	720	100%	
December 2020	31	744	0.00	0	744	100%	
January 2021	31	744	19.00	456	288	39%	Performance monitoring sampling
February 2021	28	672	1.75	42	630	94%	Performance monitoring sampling. Outside contractor sampling; Air compressor general alarm
March 2021	31	744	4.50	108	636	85%	Professional surveyor onsite; Alarm shutdown (Receiver Tank High Pressure)
April 2021	30	720	10.00	240	480	67%	Performance monitoring sampling
May 2021	31	744	4.00	96	648	87%	HMI malfunctioned and restarted; HMI programming and firmware updated
June 2021	30	720	0.00	0	720	100%	
July 2021	31	744	11.50	276	468	63%	Performance monitoring sampling
Total	**334**	**8,016**	**61.25**	**1,470**	**6,546**	**81.7%**	

SECTION V
PERFORMANCE MONITORING

Performance monitoring was conducted to establish if the AS system is operating properly and if additional action or adjustments are needed. This section discusses the performance monitoring program to evaluate the progress and performance of the HMFN AS IM. As stated in Section 4.2, the AS system was shut-down approximately one week prior to each groundwater sampling event. Year 1 performance monitoring activities and results were presented to the KSCRT during the January 2022 meeting (Meeting Minute 2201-M03).

5.1 PERFORMANCE MONITORING PROGRAM

Groundwater performance monitoring was conducted on a quarterly basis during the first year of operation in October 2020, January 2021, April 2021, and July 2021. A total of 28 performance monitoring wells were sampled during each event, which included the 27 monitoring wells sampled during the June 2020 baseline sampling event (described in Section III), as well as MW0016 which was added to the performance monitoring network to provide horizontal coverage of the plume to the west. The locations of the 28 performance monitoring wells are shown on Figure 5-1. All groundwater samples collected were analyzed for VOCs by USEPA Method 8260D. Table 5-1 summarizes the performance monitoring program locations, sampling rationale, frequencies, and analytes.

Prior to groundwater sample collection, depth-to-water measurements were obtained from each performance monitoring well to generate groundwater elevation contour maps and determine groundwater flow direction. Low-flow sampling techniques were employed during groundwater sampling activities, and each monitoring well was purged and sampled using a peristaltic pump and dedicated HDPE tubing. Sample tubing was placed at the mid-point of the well screen. All monitoring wells were purged and sampled in accordance with FDEP SOPs, and applicable sections of the KSC SAP for the RCRA Corrective Action Program (NASA, 2017b). All purge water generated through sampling was containerized on-site in new 55-gallon drums. The drums were placed on a NASA-provided spill pallet and the bell cover was secured with a strap. The

bell cover and drums were labeled. Each drum of purge water was sampled and characterized for disposal. IDW information is provided in Appendix I.

Headspace within all 28 performance monitoring wells was screened with a PID during each performance monitoring event for health and safety monitoring. In addition, 8-hour composite air samples were collected on November 11, 2020, February 10, 2021, April 26, 2021, and July 26, 2021 from the two locations shown in Figure 5-1 (HMFN-VMP01, located in the vicinity of the AS air manifold trailers and HMFN-VMP02, located on the northern edge of the M7-1011 parking lot). The air samples were collected using a 6-liter Summa canister and an 8-hour composite pressure regulator. The Summa canister samples were analyzed by ENCO Laboratories, Inc. of Jacksonville, Florida, using USEPA Method TO-15. These samples were used for health and safety monitoring, as well as to verify compliance with the KSC Title V Air Operation Permit. No analytes were detected during any of these sampling events (Table 3-2).

Sample log sheets are provided in Appendix E, and chain-of-custody forms and laboratory analytical results for all groundwater and air samples are provided in Appendix F.

5.2 PERFORMANCE MONITORING RESULTS

The results of groundwater performance monitoring events were used to assess and confirm the performance of the AS IM and to support optimization of the IM. The Year 1 analytical groundwater results are shown with the baseline results in Table 3-1. A groundwater elevation summary table for the four quarterly performance monitoring events is provided in Table 5-2. Baseline groundwater water levels are also provided in Table 5-2 for reference. Field measurement data including pH, temperature, conductivity, turbidity, DO and oxidation reduction potential (ORP) is shown in Table 5-3. These data are discussed in the following sections.

5.2.1. Water Levels

Water levels were measured at 27 permanent monitoring wells during the baseline event in June 2020 (See Section III of this report) and 28 permanent monitoring wells (with MW0016 added following the baseline event) during quarterly events after AS system start-up. These synoptic

measurements were converted to groundwater elevations (See Table 5-2), organized into shallow (5 to 20 feet bls), intermediate (20-40 feet bls), and deep (greater than 40 feet bls) zones in accordance with the screened intervals, and interpreted onto groundwater contour maps. The resulting potentiometric surface maps, presented as Figures 3-1 to 3-3 for the baseline event prior to system start-up, and Figures 5-2 to 5-13 for the October 2020, January 2021, April 2021, and July 2021 post-startup quarterly events, were used to illustrate the behavior of groundwater flow specific to each zone and measurement event, and how flow may be affected by AS system operations. The following presents a more detailed discussion of the groundwater flow trends as AS system operations progressed during its first year of operation.

5.2.1.1 Potentiometric Surface Of The Shallow Zone

During Year 1 of AS system operation, groundwater flow in the shallow zone of the surficial aquifer showed an initial flow trend to the southeast after three months of AS system operation (October 2020) with an inward radial component and high point at MW0036, then continuing to flow in a southeastern direction toward the borrow pond. After six months of AS system operation (January 2021), groundwater flow became more southward with a local groundwater flow direction reversal away from the borrow pond toward the AS treatment area. In April 2021, there was a strong northwestern flow trend from the borrow pond area toward the site and an eastern flow from MW0016, marking the western edge of the site toward the AS treatment area, which showed continued evidence of AS system influence and local flow predominance toward the treatment area.

5.2.1.2 Potentiometric Surface of the Intermediate Zone

Flow within the intermediate zone of the surficial aquifer at HMFN goes from a northeastern flow, bending to a steeper gradient toward the borrow pond during pre-AS system operation conditions, and then becoming more uniform in October 2020 after the initial quarter of operation. In January 2021, after approximately six months of AS system operation, the groundwater flow reverses at a steep hydraulic gradient from the borrow pond toward G Avenue SE, mounding near MW0039 and continuing a northwestern trend toward the AS treatment area. Flow patterns in April 2021 within the intermediate zone of the surficial aquifer continue to the northwest toward the center and bending slightly to the west at a shallower gradient across the

treatment area. In July 2021, the potentiometric surface within the intermediate zone continues to flow to the northwest away from the borrow pond and converging gradually toward the center of the AS treatment area from the west.

5.2.1.3 Potentiometric Surface of the Deep Zone

The potentiometric surface of the deep zone measured during baseline in June 2020, prior to AS system operation, generally flows from the west to the east, with the potential for radial flow toward the center of the site. This radial trend is inferred due to insufficient groundwater level data within this zone. A general flow from the east and northeast is observed after the first quarter of Year 1 AS system operation, with this eastern trend continuing from the west after the second quarter, but with flow reversal to the southwest at MW0040, located along the western edge of G Avenue SE. This flow reversal is probably an indication of increased influence of AS system operation on groundwater flow conditions at this depth. In April 2021, with continued AS system operation, groundwater flow occurs radially toward the center of the treatment within this deep zone, with potentiometric lows at MW0032 and MW0042. After one year of AS system operation, groundwater flow occurs to the east toward the center of the AS treatment area with low areas found closer to G Avenue SE in the vicinity of MW0042.

5.2.2. Field Measurements

Temperature, pH, specific conductance, DO, turbidity, and ORP were measured and recorded in the field during monitoring well sampling activities. These field measurements, compiled during baseline sampling activities in June 2020 and also during the quarterly sampling events during the initial year of AS system operation, are summarized in Table 5-3. The sample log sheets prepared in the field are presented in Appendix E. For each well, groundwater was pumped using a low-flow technique and field readings were collected at set time intervals until the readings stabilized. At that time, a groundwater sample was collected for laboratory analysis. The field measurements were collected and stabilized in accordance with FDEP's Standard Operating Procedures for Field Sampling (FS 2200) before groundwater sample collection, ensuring samples were representative of surficial aquifer conditions. The water pumped from each well was collected and managed as IDW (see IDW logs included in Appendix I). The

following presents a summary of field measurements taken prior to each of the quarterly sampling events conducted during Year 1 of AS system operation at HMFN.

During the June 2020 baseline sampling event, groundwater temperatures in 24 wells sampled ranged from 23.53 to 25.53 °C, with an average of 24.26 °C. Readings of pH ranged from 6.13 to 11.61, with an average of 8.46. Specific conductance ranged from 183 to 4,377 microSiemens per centimeter (µS/cm), with an average of 2,088 µS/cm. DO values varied from 0.06 to 0.71 milligrams per liter (mg/L), with an average value of 0.26 mg/L. Turbidity readings ranged from 0.43 to 35.90 nephelometric units (NTU), with an average value of 6.62 NTU. ORP readings ranged from -308.1 to 625.9 millivolts (mV), with an average reading of -51.8 mV.

During the October 2020 first quarter sampling event, groundwater temperatures in 26 wells sampled ranged from 22.60 to 29.50 °C, with an average of 25.64 °C. Readings of pH ranged from 2.82 to 7.80, with an average of 6.86. Specific conductance ranged from 45.9 to 5,138 µS/cm, with an average of 3,223 µS/cm. DO values varied from 0.02 to 4.02 mg/L, with an average value of 1.11 mg/L. Turbidity readings ranged from 0.13 to 14.80 NTU, with an average value of 6.53 NTU. ORP readings ranged from -158.1 to 376.3 mV, with an average reading of 40.5 mV.

During the January 2021 second quarter sampling event, groundwater temperatures in 28 wells sampled ranged from 16.90 to 25.20 °C, with an average of 21.81 °C. Readings of pH ranged from 2.58 to 7.14, with an average of 6.02. Specific conductance ranged from 573 to 5,166 µS/cm, with an average of 3,597 µS/cm. DO values varied from 0.05 to 5.32 mg/L, with an average value of 0.92 mg/L. Turbidity readings ranged from 1.13 to 47.30 NTU, with an average value of 16.45 NTU. ORP readings ranged from 21.3 to 300.0 mV, with an average reading of 162.3 mV.

During the April 2021 third quarter sampling event, groundwater temperatures in 28 wells sampled ranged from 21.20 to 26.20 °C, with an average of 24.20 °C. Readings of pH ranged from 3.26 to 7.64, with an average of 6.57. Specific conductance ranged from 1,194 to 5,773 µS/cm, with an average of 3,998 µS/cm. DO values varied from 0.07 to 9.03 mg/L, with an average value of 2.08 mg/L. Turbidity readings ranged from 0.46 to 72.60 NTU, with an

average value of 10.48 NTU. ORP readings ranged from 36.0 to 388.9 mV, with an average reading of 215.4 mV.

During the July 2021 fourth quarter sampling event, groundwater temperatures in 28 wells sampled ranged from 26.60 to 30.80 °C, with an average of 29.03 °C. Readings of pH ranged from 3.33 to 7.56, with an average of 6.60. Specific conductance ranged from 2,107 to 6,444 µS/cm, with an average of 4,437 µS/cm. DO values varied from 0.01 to 7.36 mg/L, with an average value of 1.21 mg/L. Turbidity readings ranged from 1.39 to 96.40 NTU, with an average value of 14.90 NTU. ORP readings ranged from -123.9 to 426.5 mV, with an average reading of 110.7 mV.

Overall, field parameter data was relatively consistent between sampling events; however, pH readings from several wells showed a wide-range of values over the reporting period. No issues were identified with stabilization or equipment calibration, and review of historical field parameter data did not find overall similar or inconsistent readings from the past. Field parameter data will continue to be collected and evaluated during future sampling events to determine if there are any seasonal or data trends as active AS operations continue.

5.2.3. Groundwater Analytical Results

Quarterly performance monitoring groundwater samples were collected and analyzed in accordance with the prescribed schedule and analyte list. A summary of results for the baseline event and Year 1 quarterly performance monitoring events for the site's primary COCs are presented in Table 3-1. Laboratory analytical reports are provided in Appendix F. Analytical data is presented on Figures 5-14 to 5-16, with trend graphs presented on Figures 5-17 to 5-19.

5.2.3.1 First Quarter Results - October 2020

First quarter performance monitoring activities were conducted from October 26-28, 2020, approximately two months after completion of system start-up activities.

Maximum concentrations of TCE, cDCE, tDCE, and VC in October 2020 were 400,000 µg/L, 24,000 µg/L, 6.9 µg/L, and 950 µg/L, respectively. Of the 28 samples, 11 (39 percent of samples) had concentrations of at least one COC greater than NADCs during this sampling

event. October 2020 groundwater sample locations and performance monitoring results, including NADC exceedances, are shown on Figures 5-14, 5-15, and 5-16 for the shallow, intermediate, and deep intervals, respectively.

Shallow Wells: After two months of system operation, concentrations of TCE, cDCE, tDCE, and VC were reduced to below NADC levels in all eight shallow wells screened between 5 and 20 feet bls (MW0004, MW0009, MW0016, MW0029, MW0034, MW0036, MW0037, and MW0046). Only MW0009 reported TCE concentrations above the NADC or GCTL during baseline sampling, and TCE decreased from 320 µg/L to 190 µg/L during the first quarter of operations. tDCE concentrations continued to not be detected above the GCTL of 100 µg/L in shallow monitoring wells. cDCE concentrations in groundwater at MW0029, which is located within the source zone and centerline of the plume, decreased from 13,000 µg/L to 310 µg/L, which represents a reduction of more than 97%. During baseline sampling TCE, cDCE, and VC concentrations in groundwater at MW0009 exceeded NADCs, and concentrations for these contaminants were reduced by 41%, 90%, and 98%, respectively, to below NADCs two months after system operation, during the October 2020 sampling event.

Intermediate Wells: After two months of system operation, concentrations of TCE, cDCE, tDCE, and VC were reduced to below 10x NADC levels in all 12 intermediate wells screened between 20 and 40 feet bls (MW0002, MW0008, MW0011, MW0030, MW0031, MW0035, MW0038, MW0039, MW0041, MW0043, MW0045, and MW0047). Concentrations of TCE within the plume centerline decreased significantly during the first two months of operation, as indicated by VOC concentrations in groundwater at MW0030 and MW0031 where TCE decreased from 14,000 µg/L to 180 µg/L (99% reduction) and from 8,400 µg/L to 1,100 µg/L (87% reduction). Concentrations of cDCE and VC in groundwater at these monitoring wells were also significantly reduced during the first quarter of operation.

Deep Wells (within treatment interval): During the October 2020 sampling event, VOC concentrations in groundwater at the five deep monitoring wells screened deeper than 40 feet bls and within the treatment interval (MW0027, MW0032, MW0040, MW0042, and MW0044) generally decreased, but remained elevated above 10x NADC for TCE and cDCE at several

monitoring wells. For example, TCE in groundwater at MW0032 decreased from 120,000 µg/L to 14,000 µg/L during the first quarter of AS operation, which represents a reduction of 88%. TCE, cDCE, and VC were all reduced to below NADCs at MW0040, which was within the 10x NADC impacted area.

Deep Wells (below treatment interval): Three wells screened below the target treatment depth (MW0024, MW0028, and MW0033) were also sampled during the October 2020 sampling event. At MW0024, VOCs were either not detected or detected at very low concentrations (less than 1 µg/L), which is screened from 55-65 feet bls below the impacted aquifer. At MW0028 and MW0033, which are screened 45-50 feet bls, TCE, cDCE, and VC generally decreased with the exception of TCE concentrations at MW0028 which increased from 240,000 µg/L during the baseline event to 400,000 µg/L during the October 2020 sampling event. MW0028 is screened within the source zone, below the targeted treatment depth.

Freon: Concentrations of Freon-113 in groundwater collected during the October 2020 performance monitoring sampling event ranged from less than 0.73 µg/L to 120,000 µg/L. All detections of Freon-113 were below the GCTL of 210,000 µg/L. In general, Freon-113 concentrations decreased in groundwater collected from monitoring wells screened in the shallow and intermediate intervals from 5 feet to 40 feet bls during the first quarter of operations. Freon-113 was detected in three of the eight monitoring wells screened greater than 40 feet bls, with concentrations at MW0027 and MW0028 increasing during the first quarter of operation compared to baseline concentrations, and concentrations at MW0044 decreasing compared to baseline concentrations.

5.2.3.2 Second Quarter Results - January 2021

Second quarter performance monitoring activities were conducted from January 28, 2021 to February 1, 2021, approximately five months after completion of system start-up activities.

Maximum concentrations of TCE, cDCE, tDCE, and VC in January 2021 were 460,000 µg/L, 21,000 µg/L, 6.0 µg/L, and 990 µg/L, respectively. Eight of the 28 samples (29 percent of samples) had concentrations of at least one COC greater than the NADC during this sampling event. January 2021 groundwater sample locations and performance monitoring results,

including NADC exceedances, are shown on Figures 5-14, 5-15, and 5-16 for the shallow, intermediate, and deep intervals, respectively.

Shallow Wells: After five months of system operation, concentrations of TCE, cDCE, tDCE, and VC continued to measure below NADC levels in all eight shallow wells screened between 5 and 20 feet bls (MW0004, MW0009, MW0016, MW0029, MW0034, MW0036, MW0037, and MW0046). Only MW0009 detected TCE concentrations above the GCTL during baseline sampling, and TCE continued to decrease from 190 µg/L (first quarter) to 49 µg/L during the second quarter of operations. cDCE concentrations in groundwater at MW0029, which is located within the source zone and centerline of the plume, continued to decrease during the second quarter of operation from 310 µg/L during October 2020 to 48 µg/L during January 2021, which represents a reduction of more than 99% from the baseline concentration of 13,000 µg/L. cDCE concentrations in groundwater at MW0034 was similarly reduced to below the GCTL of 70 µg/L during the second quarter of operation.

Intermediate Wells: After five months of system operation, concentrations of TCE, cDCE, tDCE, and VC continued to measure below 10x NADC levels in all 12 intermediate wells screened between 20 and 40 feet bls (MW0002, MW0008, MW0011, MW0030, MW0031, MW0035, MW0038, MW0039, MW0041, MW0043, MW0045, and MW0047). Concentrations of TCE within the plume centerline decreased significantly during the second quarter of operations, as indicated by concentrations in groundwater at MW0031 (1,100 µg/L in October 2020 to 510 µg/L in January 2021). Groundwater at MW0031 also measured below the NADC for cDCE and VC with reductions of 1,600 µg/L to 490 µg/L for cDCE (15,000 µg/L during baseline) and from 54 µg/L to 13 I µg/L (41,000 µg/L during baseline) for VC during the second quarter of AS system operation. In all, during the January 2021 event, only three of the 11 intermediate wells screened between 20 and 40 feet bls measured above the NADC for at least one VOC contaminant (MW0002, MW0031, and MW0039).

Deep Wells (within treatment interval): During the January 2021 sampling event, VOC concentrations in groundwater at the five deep monitoring wells screened deeper than 40 feet bls and within the treatment interval (MW0027, MW0032, MW0040, MW0042, and MW0044)

generally decreased, but remained elevated above 10x NADC for TCE at several monitoring wells. For example, TCE in groundwater at MW0032 decreased from 120,000 µg/L to 14,000 µg/L during the first quarter of AS operation, and to 7,400 µg/L during the second quarter of operation, which represents an overall reduction of 94%. cDCE, and VC were reduced to below 10x NADCs at all five of the deep monitoring wells during the January 2021 sampling event, with detected concentrations ranging from 56 µg/L to 5,700 µg/L for cDCE and 12 µg/L to 170 µg/L for VC.

Deep Wells (below treatment interval): Three wells screened below the target treatment depth (MW0024, MW0028, and MW0033) were also sampled during the January 2021 sampling event. VOCs were not detected above sample detection limits at MW0024, which is screened from 55-65 feet bls below the impacted aquifer. TCE, cDCE, and VC concentrations were relatively stable at MW0028 and MW0033 compared to the first quarter October 2020 results. TCE concentrations at MW0028, which is screened in the source zone below the targeted treatment depth, continued to increase from 400,000 µg/L during the October 2020 sampling event to 460,000 µg/L during the January 2021 sampling event.

Freon: Concentrations of Freon-113 in groundwater collected during the January 2021 performance monitoring sampling event ranged from less than 0.73 µg/L to 110,000 µg/L. All detections of Freon-113 were below the GCTL of 210,000 µg/L. In general, Freon-113 concentrations decreased in groundwater collected from monitoring wells screened in the shallow and intermediate intervals from 5 feet to 40 feet bls during the second quarter of operations. Freon-113 was detected in three of the eight monitoring wells screened greater than 40 feet bls (MW0027, MW0028, and MW0044), with concentrations of Freon-113 at these monitoring wells similar to first quarter results.

5.2.3.3 Third Quarter Results - April 2021

Third quarter performance monitoring activities were conducted from April 16-21, 2021, approximately eight months after completion of system start-up activities.

Maximum concentrations of TCE, cDCE, tDCE, and VC in April 2021 were 430,000 µg/L, 21,000 µg/L, 5.7 µg/L, and 910 µg/L, respectively. Ten of the 28 samples (36 percent of

samples) had concentrations of at least one COC greater than NADCs during this sampling event. April 2021 groundwater sample locations and performance monitoring results, including NADC exceedances, are shown on Figures 5-14, 5-15, and 5-16 for the shallow, intermediate, and deep intervals, respectively.

Shallow Wells: After eight months of system operation, concentrations of TCE, cDCE, tDCE, and VC continued to measure below NADCs in all eight shallow wells screened between 5 and 20 feet bls (MW0004, MW0009, MW0016, MW0029, MW0034, MW0036, MW0037, and MW0046). Only MW0009 reported TCE concentrations above the GCTL during baseline sampling, and TCE decreased to 13 µg/L during the third quarter of operations. cDCE concentrations in groundwater at MW0009, which is located within the 10x NADC impacted area, continued to decrease during the third quarter of operation from 360 µg/L in January 2021 to 74 µg/L during April 2021, which represents a reduction of 99% from the baseline concentration of 6,700 µg/L. cDCE concentrations in groundwater at all seven of the other shallow monitoring wells measured below the GCTL of 70 µg/L during the third quarter of operation.

Intermediate Wells: After eight months of system operation, concentrations of TCE, cDCE, tDCE, and VC continued to measure below 10x NADC levels in all 12 intermediate wells screened between 20 and 40 feet bls (MW0002, MW0008, MW0011, MW0030, MW0031, MW0035, MW0038, MW0039, MW0041, MW0043, MW0045, and MW0047). With the exception of samples collected from MW0002 and MW0031, which are both located within the source zone and plume centerline, groundwater at intermediate monitoring wells measured less than NADCs for TCE, cDCE, and tDCE during the third quarter of operation.

Concentrations of TCE within the plume centerline rebounded slightly during the third quarter of operation. TCE concentration in groundwater at MW0031 increased from 510 µg/L to 1,400 µg/L during the April 2021 sampling event, which still represents an overall reduction of 83% compared to the baseline concentration of 8,400 µg/L. Similarly, cDCE concentration in groundwater from MW0031 increased from 490 µg/L to 1,500 µg/L, which still represents an overall reduction of 90% compared to the baseline concentration of 15,000 µg/L. With the

exception of groundwater collected from MW0039 (200 µg/L VC), groundwater at all intermediate monitoring wells measured below the NADC for VC.

Deep Wells (within treatment interval): During the April 2021 sampling event, TCE concentrations in groundwater at the five deep monitoring wells screened deeper than 40 feet bls and within the treatment interval (MW0027, MW0032, MW0040, MW0042, and MW0044) rebounded slightly in three of the five monitoring wells and remained elevated above the NADCs for VOCs at four of the five monitoring wells. TCE in groundwater at MW0032 continued to decrease during the third quarter, reducing from 7,400 µg/L to 5,400 µg/L, which represents an overall reduction of 96% compared to the baseline concentration of 120,000 µg/L. cDCE and VC continued to be reduced to below 10x NADCs at all five of the deep monitoring wells during the April 2021 sampling event, with detected concentrations ranging from 17 µg/L to 5,200 µg/L for cDCE and 1.5 J µg/L to 180 µg/L for VC.

Deep Wells (below treatment interval): Three wells screened below the target treatment depth (MW0024, MW0028, and MW0033) were also sampled during the April 2021 sampling event. VOCs were either not detected or detected at very low concentrations (less than 1 µg/L) at MW0024, which is screened from 55-65 feet bls below the impacted aquifer. TCE, cDCE, and VC concentrations were relatively stable at MW0028 and MW0033 compared to the second quarter January 2021 results. TCE concentrations at MW0028, which is screened in the source zone below the targeted treatment depth, continued to measure the highest of all samples collected at 430,000 µg/L.

Freon: Concentrations of Freon-113 in groundwater collected during the April 2021 performance monitoring sampling event ranged from less than 0.73 µg/L to 140,000 µg/L. All detections of Freon-113 were below the GCTL of 210,000 µg/L. In general, Freon-113 concentrations decreased in groundwater collected from monitoring wells screened in the shallow and intermediate intervals from 5 feet to 40 feet bls during third quarter operations. Freon-113 was detected in three of the eight monitoring wells screened greater than 40 feet bls, and concentrations at two of these wells increased relative to second quarter results (MW0027 and MW0028) and decreased at the other (MW0044).

5.2.3.4 Fourth Quarter Results - July 2021

Fourth quarter performance monitoring activities were conducted from July 19-23, 2021, approximately 11 months after completion of system start-up activities.

Maximum concentrations of TCE, cDCE, tDCE, and VC in July 2021 were 490,000 µg/L, 15,000 µg/L, 0.77 µg/L, and 890 µg/L, respectively. Eight of the 28 samples (29 percent of samples) had concentrations of at least one COC greater than NADCs during this sampling event. July 2021 groundwater sample locations and performance monitoring results, including NADC exceedances, are shown on Figures 5-14, 5-15, and 5-16 for the shallow, intermediate, and deep intervals, respectively.

Shallow Wells: After eleven months of system operation, concentrations of TCE, cDCE, tDCE, and VC continued to measure below NADCs in all eight shallow wells screened between 5 and 20 feet bls (MW0004, MW0009, MW0016, MW0029, MW0034, MW0036, MW0037, and MW0046). The highest cDCE concentrations in shallow groundwater continued to be detected at MW0009, where cDCE measured 76 µg/L during the July 2021 sampling event. cDCE concentrations in groundwater at all seven other shallow monitoring wells continued to measure below the GCTL of 70 µg/L during the fourth quarter of operation. Similarly, of the six shallow wells where VC concentrations were above the NADC of 100 µg/L during the June 2020 baseline event, groundwater concentrations at five of these wells have been reduced to less than the GCTL of 1 µg/L during the fourth quarter of operation.

Intermediate Wells: After eleven months of system operation, concentrations of TCE, cDCE, tDCE, and VC continued to decrease, with concentrations below NADCs for each COC in 10 of the 12 intermediate wells screened between 20 and 40 feet bls (MW0002, MW0008, MW0011, MW0030, MW0035, MW0038, MW0041, MW0043, MW0045, and MW0047). Exceptions include samples collected from MW0031 and MW0039, where NADC exceedances include detections of 310 µg/L TCE at MW0031 and 150 µg/L VC at MW0039. After concentrations of TCE within the plume centerline rebounded slightly during the third quarter of operation, TCE concentrations in groundwater decreased to the lowest detected levels during the first year of system operation.

Deep Wells (within treatment interval): During the July 2021 sampling event, TCE concentrations in groundwater at two of the five deep monitoring wells screened deeper than 40 feet bls and within the treatment interval (MW0027 and MW0042) generally continued to indicate higher concentrations than those measured during previous quarterly sampling events. Concentrations at MW0032, MW0040, and MW0044 continued to decrease during the fourth quarter of operation. For example, TCE in groundwater at MW0032 reduced from 5,400 µg/L in April 2021 to 3,600 µg/L in July 2021, with an overall reduction of 97% compared to the baseline concentration of 120,000 µg/L. cDCE, and VC continued to decrease to below 10x NADCs at all five deep monitoring wells during the July 2021 sampling event, with detected concentrations ranging from 19 µg/L to 4,900 µg/L for cDCE and 1.7 J µg/L to 260 µg/L for VC.

Deep Wells (below treatment interval): Three wells screened below the target treatment depth (MW0024, MW0028, and MW0033) were also sampled during the July 2021 sampling event. VOCs were not detected above the sample detection limits at MW0024, which is screened from 55-65 feet bls below the impacted aquifer. TCE, cDCE, and VC concentrations were relatively stable at MW0028 and MW0033 compared to the second and third quarter results. TCE concentrations at MW0028, which is screened in the source zone below the targeted treatment depth, continued to measure the highest of all samples collected at 490,000 µg/L.

Freon: Concentrations of Freon-113 in groundwater collected during the July 2021 performance monitoring sampling event ranged from less than 0.73 µg/L to 120,000 µg/L. All detections of Freon-113 were below the GCTL of 210,000 µg/L. In general, Freon-113 concentrations decreased in groundwater collected from monitoring wells screened in the shallow and intermediate intervals from 5 feet to 40 feet bls during third quarter operations. Freon-113 was detected in three of the eight monitoring wells screened greater than 40 feet bls, and concentrations at these three monitoring wells (MW0027, MW0028, and MW0044) were relatively stable compared to previous performance sampling events.

5.3 PERFORMANCE EVALUTION AND CONTAMINANT REDUCTION

Trend analysis graphs for TCE, cDCE, and VC are provided in Figures 5-17 through 5-19, respectively, with an overview provided for each interval below. Concentration reduction

calculations for TCE, cDCE, and VC are included in Tables 5-4 to 5-6, respectively. The percent reduction values presented in this section (when referencing multiple wells for a certain contaminant) are based on the geometric means between the baseline and July 2021 datasets.

Shallow: The baseline plume generally mimics baseline groundwater flow orientation towards the borrow pond, with GCTL exceedances encountered adjacent to the northwest shore of the pond. In the vicinity of the source zone, 10x NADC exceedances were encountered during the June 2020 baseline sampling event in the shallow zone.

During the first year of IM operations, groundwater concentrations in the shallow plume decreased to just above GCTLs for TCE, cDCE, and VC (Figure 5-14). No exceedances of tDCE were detected during the Year 1 performance sampling events within the shallow zone (Figure 5-14).

In the shallow interval from 5 to 20 feet bls, one sample collected from monitoring well (MW0009) had a detection of TCE greater than the GCTL during baseline sampling. TCE concentrations at MW0009 decreased from 320 µg/L to 13 µg/L over the course of Year 1 operations, which represents a 96% reduction of TCE since baseline sampling. During the July 2021 sampling event, groundwater at three shallow wells (MW0004, MW0009, and MW0029) measured above the GCTL with the highest TCE concentration of 12 µg/L at MW0004. Groundwater cDCE concentrations at the seven monitoring wells where cDCE was detected above the GCTL (MW0004, MW009, MW0029, MW0034, MW0036, MW0037, and MW0046) have been reduced by 99% (average) compared to baseline concentrations. Similarly, VC concentrations in the shallow interval have been reduced by more than 99% (average) over the first year of operations compared to baseline concentrations.

Intermediate: The baseline intermediate plume mimics baseline flow orientation toward the borrow pond, but with a decrease in western and southeastern extent. The area of the plume with 10x NADC exceedances increases from shallow to intermediate depths. No exceedances of tDCE were detected during the Year 1 performance sampling events within the intermediate zone. In the intermediate interval from 20 to 40 feet bls, groundwater TCE concentrations at the seven monitoring wells where TCE was detected above the GCTL (MW0002, MW0008,

MW0030, MW0031, MW0035, MW0039, and MW0043) have been reduced by 99% (average) compared to baseline conditions. Similarly, cDCE concentrations at the nine monitoring wells where cDCE was detected above the GCTL (MW0002, MW0008, MW0011, MW0030, MW0031, MW0035, MW0039, MW0043, and MW0041) have been reduced by 99% (average) during Year 1 operations. VC concentrations in the intermediate interval have also been reduced by more than 99% (average) over the first year of operations compared to baseline concentrations.

Deep: During Year 1 operations, the deep plume orientation elongated in the east-west direction compared to baseline conditions. The deep plume has a larger areal extent of exceedances between NADC and 10x NADC compared to the intermediate interval. Although the aerial extent of the deep plume decreased during Year 1 operations, TCE, cDCE, and VC concentrations in groundwater continued to exceed 10x NADCs. tDCE continues to be un-detected, but laboratory dilution factors did not allow detection sensitivity at lower concentrations. The 10x NADC and 100x NADC areas of the deep plume are comparable to the TCE source zone. Located in the source zone, monitoring wells MW0027 (screened 40-45 feet bls, within the treatment interval) and MW0028 (screened 45-50 feet bls, below the treatment interval) showed large fluctuations in TCE concentrations throughout the Year 1 sampling events. While MW0032 and MW0033, which are also screened in the source zone, have shown consistent decreases in TCE concentration throughout the sampling events, MW0042 showed increasing concentrations during the April 2021 and July 2021 sampling events. Overall TCE concentrations at MW0044 decreased over the course of Year 1 sampling events.

At MW0024, screened from 55-65 feet bls, concentrations reduced to non-detect by July 2021, likely due to its position below a confining layer. Nearby wells, with a screen depth of 50 feet bls (MW0027 and MW0028) showed TCE and cDCE concentrations exceeding 10x NADC, with TCE levels exceeding 100x NADC within these source zone locations (from June 2020 to July 2021 sampling events). This data suggests a vertical extent of TCE within this interval, which indicates that treatment below the air sparging well network is not appreciably occurring.

Overall Contaminant Reduction: After the first year of operation, overall reduction in contaminant concentrations for TCE, cDCE, and VC were approximately 94%, 97%, and 99%, respectively (see Tables 5-4 to 5-6). These values are based on the geometric means between the baseline and July 2021 datasets. Reduction calculations for individual wells are also provided in the tables.

Table 5-1. Year 1 Performance Monitoring Network

Montoring Well (HMFN-)	Screen Interval (ft bls)	Monitoring Function	June 2020 (Baseline)	October 2020	January 2021	April 2021	July 2021
MW0002	[30-40]	Within SZ and centerline of the plume (HS1).	X	X	X	X	X
MW0004	[5-15]	Within VOC NADC impacted area and centerline of the plume (HS1).	X	X	X	X	X
MW0008	[20-30]	Within VOC 100xNADC impacted area and centerline of the plume (HS1).	X	X	X	X	X
MW0009	[5-15]	Within shallow interval of 10xNADC impacted area.	X	X	X	X	X
MW0011	[20-30]	Within CVOC 10xNADC impacted area; TCE and VC exceedances in December 2011.	X	X	X	X	X
MW0016	[5-15]	Provides horizontal delineation of plume to the west.		X	X	X	X
MW0024	[55-65]	Within HS SZ.	X	X	X	X	X
MW0027	[40-45]	Within HS SZ.	X	X	X	X	X
MW0028	[45-50]	Within HS SZ.	X	X	X	X	X
MW0029	[10-20]	Within HS1 SZ and centerline of the plume.	X	X	X	X	X
MW0030	[20-30]	Within HS1 SZ and centerline of the plume.	X	X	X	X	X
MW0031	[30-40]	Within HS1 SZ and centerline of the plume.	X	X	X	X	X
MW0032	[40-45]	Within HS1 SZ and centerline of the plume.	X	X	X	X	X
MW0033	[45-50]	Within HS1 SZ and centerline of the plume.	X	X	X	X	X
MW0034	[10-20]	Within 100xNADC impacted area centerline of the plume (HS1).	X	X	X	X	X
MW0035	[30-40]	Within 100xNADC impacted area centerline of the plume (HS1).	X	X	X	X	X
MW0036	[10-20]	Within 100xNADC impacted area centerline of the plume (HS1).	X	X	X	X	X
MW0037	[5-15]	Within 10xNADC impacted area centerline of the plume (HS1).	X	X	X	X	X
MW0038	[15-25]	Within 10xNADC impacted area centerline of the plume (HS1).	X	X	X	X	X
MW0039	[30-40]	Within 10xNADC impacted area (HS2).	X	X	X	X	X
MW0040	[40-45]	Within 10xNADC impacted area (HS2).	X	X	X	X	X
MW0041	[30-40]	Within 10xNADC impacted area (HS2).	X	X	X	X	X
MW0042	[40-45]	Within 10xNADC impacted area (HS2).	X	X	X	X	X
MW0043	[30-40]	Within 10xNADC impacted area (HS2).	X	X	X	X	X
MW0044	[40-45]	Within 10xNADC impacted area (HS2).	X	X	X	X	X
MW0045	[25-35]	Within Hot Spot 1 Source Zone (HS1).	X	X	X	X	X
MW0046	[10-20]	Within 100xNADC impacted area (HS1).	X	X	X	X	X
MW0047	[20-30]	Within 100xNADC impacted area (HS1).	X	X	X	X	X

Notes:
X = Sampled for VOCs via EPA method 8260B (*Note: MW0016 added to network after baseline event)
ft bls = feet below land surface.
HCP = High Concentration Plume.
HS = Hot Spot.
NADC = Natural Attenuation Default Concentrations.
SZ = Source Zone.
VOC = volatile organic compound.

Table 5-2. Groundwater Elevations

Monitoring Well Name	Screened Interval (feet bls)	Top of Casing Elevation	Measurement Date	Depth to Groundwater (ft bls)	Groundwater Elevation
Shallow Monitoring Wells					
MW0004	5-15	4.18	Jun-20	2.32	1.86
		4.18	Oct-20	1.77	2.41
		4.18	Jan-21	3.41	0.77
		4.18	Apr-21	5.48	-1.3
		4.18	Jul-21	4.03	0.15
MW0009	5-15	5.65	Jun-20	3.93	1.72
		5.65	Oct-20	3.49	2.16
		5.65	Jan-21	4.81	0.84
		5.65	Apr-21	7.35	-1.7
		5.65	Jul-21	4.95	0.70
MW0016	5-15	7.82	Jun-20	NM	NM
		7.82	Oct-20	5.41	2.41
		7.82	Jan-21	NM	NM
		7.82	Apr-21	6.57	1.25
		7.82	Jul-21	7.62	0.20
MW0037	5-15	6.09	Jun-20	5.01	1.08
		6.09	Oct-20	4.15	1.94
		6.09	Jan-21	5.15	0.94
		6.09	Apr-21	5.85	0.24
		6.09	Jul-21	6.04	0.05
MW0029	10-20	5.60	Jun-20	3.83	1.77
		5.60	Oct-20	3.54	2.06
		5.60	Jan-21	4.98	0.62
		5.60	Apr-21	7.49	-1.89
		5.60	Jul-21	5.79	-0.19
MW0034	10-20	6.12	Jun-20	NM	NM
		6.12	Oct-20	3.96	2.16
		6.12	Jan-21	5.52	0.60
		6.12	Apr-21	7.95	-1.83
		6.12	Jul-21	6.35	-0.23
MW0036	10-20	3.90	Jun-20	2.15	1.75
		3.90	Oct-20	1.8	2.1
		3.90	Jan-21	3.28	0.62
		3.90	Apr-21	4.96	-1.06
		3.90	Jul-21	4.12	-0.22
MW0046	10-20	6.03	Jun-20	4.5	1.53
		6.03	Oct-20	4.06	1.97
		6.03	Jan-21	5.35	0.68
		6.03	Apr-21	6.2	-0.17
		6.03	Jul-21	6.0	0.03
MW0038	15-25	5.90	Jun-20	4.89	1.01
		5.90	Oct-20	3.97	1.93
		5.90	Jan-21	5	0.90
		5.90	Apr-21	5.73	0.17
		5.90	Jul-21	5.86	0.04
MW0008	20-30	6.22	Jun-20	4.48	1.74
		6.22	Oct-20	4.03	2.19
		6.22	Jan-21	5.69	0.53
		6.22	Apr-21	8.05	-1.83
		6.22	Jul-21	6.46	-0.24

Table 5-2. Groundwater Elevations - Continued

Monitoring Well Name	Screened Interval (feet bls)	Top of Casing Elevation	Measurement Date	Depth to Groundwater (ft bls)	Groundwater Elevation
Intermediate Monitoring Wells					
MW0011	20-30	4.1	Jun-20	2.33	1.77
		4.1	Oct-20	1.96	2.14
		4.1	Jan-21	3.5	0.60
		4.1	Apr-21	4.27	-0.17
		4.1	Jul-21	4.35	-0.25
MW0030	20-30	5.70	Jun-20	3.95	1.75
		5.70	Oct-20	3.45	2.25
		5.70	Jan-21	5.11	0.59
		5.70	Apr-21	7.56	-1.86
		5.70	Jul-21	5.89	-0.19
MW0047	20-30	5.95	Jun-20	4.41	1.54
		5.95	Oct-20	3.94	2.01
		5.95	Jan-21	5.35	0.60
		5.95	Apr-21	6.1	-0.15
		5.95	Jul-21	5.94	0.01
MW0045	25-35	7.02	Jun-20	5.2	1.82
		7.02	Oct-20	4.85	2.17
		7.02	Jan-21	6.47	0.55
		7.02	Apr-21	8.56	-1.54
		7.02	Jul-21	7.21	-0.19
MW0002	30-40	2.88	Jun-20	1.16	1.72
		2.88	Oct-20	0.6	2.28
		2.88	Jan-21	0.81	2.07
		2.88	Apr-21	4.44	-1.56
		2.88	Jul-21	2.99	-0.11
MW0031	30-40	5.65	Jun-20	3.9	1.75
		5.65	Oct-20	3.4	2.25
		5.65	Jan-21	5.02	0.63
		5.65	Apr-21	7.35	-1.7
		5.65	Jul-21	5.78	-0.13
MW0035	30-40	6.09	Jun-20	4.35	1.74
		6.09	Oct-20	3.89	2.2
		6.09	Jan-21	5.5	0.59
		6.09	Apr-21	7.88	-1.79
		6.09	Jul-21	6.29	-0.20
MW0039	30-40	5.69	Jun-20	3.96	1.73
		5.69	Oct-20	3.54	2.15
		5.69	Jan-21	5.04	0.65
		5.69	Apr-21	6.85	-1.16
		5.69	Jul-21	5.82	-0.13
MW0041	30-40	4.89	Jun-20	3.16	1.73
		4.89	Oct-20	2.7	2.19
		4.89	Jan-21	4.36	0.53
		4.89	Apr-21	6.44	-1.55
		4.89	Jul-21	5.16	-0.27
MW0043	30-40	4.76	Jun-20	3.05	1.71
		4.76	Oct-20	2.54	2.22
		4.76	Jan-21	4.19	0.57
		4.76	Apr-21	6.18	-1.42
		4.76	Jul-21	5.01	-0.25

Table 5-2. Groundwater Elevations - Continued

Monitoring Well Name	Screened Interval (feet bls)	Top of Casing Elevation	Measurement Date	Depth to Groundwater (ft bls)	Groundwater Elevation
Deep Monitoring Wells					
MW0027	40-45	6.35	Jun-20	4.6	1.75
		6.35	Oct-20	4.01	2.34
		6.35	Jan-21	5.58	0.77
		6.35	Apr-21	7.71	-1.36
		6.35	Jul-21	6.39	-0.04
MW0032	40-45	5.50	Jun-20	3.77	1.73
		5.50	Oct-20	3.2	2.3
		5.50	Jan-21	4.85	0.65
		5.50	Apr-21	7.13	-1.63
		5.50	Jul-21	5.59	-0.09
MW0040	40-45	5.76	Jun-20	4.07	1.69
		5.76	Oct-20	3.61	2.15
		5.76	Jan-21	5.16	0.60
		5.76	Apr-21	6.9	-1.14
		5.76	Jul-21	5.96	-0.20
MW0042	40-45	4.88	Jun-20	3.14	1.74
		4.88	Oct-20	2.66	2.22
		4.88	Jan-21	4.37	0.51
		4.88	Apr-21	6.54	-1.66
		4.88	Jul-21	5.09	-0.21
MW0044	40-45	4.77	Jun-20	3.05	1.72
		4.77	Oct-20	2.59	2.18
		4.77	Jan-21	4.17	0.60
		4.77	Apr-21	6.11	-1.34
		4.77	Jul-21	4.96	-0.19
MW0028	45-50	6.18	Jun-20	4.44	1.74
		6.18	Oct-20	3.85	2.33
		6.18	Jan-21	5.37	0.81
		6.18	Apr-21	6.58	-0.40
		6.18	Jul-21	6.19	-0.01
MW0033	45-50	5.61	Jun-20	3.87	1.74
		5.61	Oct-20	3.25	2.36
		5.61	Jan-21	4.89	0.72
		5.61	Apr-21	7.12	-1.51
		5.61	Jul-21	5.67	-0.06
MW0024	55-65	4.62	Jun-20	2.9	1.72
		4.62	Oct-20	1.85	2.77
		4.62	Jan-21	3.75	0.87
		4.62	Apr-21	3.98	0.64
		4.62	Jul-21	4.01	0.61

Notes:

All elevations are in feet above mean sea level (North American Vertical Datum of 1988).
ft bls = Feet below land surface.
TOC = Top of casing (elevation).
DTW = Depth to water in feet below TOC.
NM = Not measured

Table 5-3. Field Measurements

Well ID (HMFN-)	Sample Date	pH (S.U.)	Temp. (°C)	Cond. (µS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW0002	Jun-20	8.66	23.82	2,726	0.21	4.67	567.0
	Oct-20*	-	-	-	-	-	-
	Jan-21	6.15	19.70	4,813	0.43	1.13	197.1
	Apr-21	7.37	25.20	4,206	0.97	8.67	240.1
	Jul-21	7.35	28.80	4,848	3.92	2.66	103.1
MW0004	Jun-20	11.61	24.10	183	0.35	4.07	-285.6
	Oct-20	7.31	24.70	3,784	1.86	2.21	36.3
	Jan-21**	3.37	22.50	2,644	0.43	47.30	216.4
	Apr-21	3.54	24.70	3,408	0.21	1.32	315.0
	Jul-21	3.38	30.00	4,616	0.12	2.03	304.4
MW0008	Jun-20	7.48	23.53	859	0.12	6.13	-199.4
	Oct-20	6.85	27.40	2,744	0.14	0.13	-13.7
	Jan-21**	3.47	24.90	4,692	0.13	26.40	167.4
	Apr-21	6.09	25.40	4,587	0.88	1.31	137.2
	Jul-21	6.83	29.50	5,248	2.98	10.10	176.2
MW0009	Jun-20	6.26	24.66	3,692	0.71	10.70	476.1
	Oct-20	7.30	26.60	4,477	2.20	4.80	69.1
	Jan-21**	6.93	23.90	4,961	1.29	32.10	267.5
	Apr-21	7.47	24.20	5,312	4.55	11.30	257.4
	Jul-21	7.36	30.10	6,208	1.88	3.19	-13.8
MW0011	Jun-20	7.63	24.46	1,214	0.08	1.23	-236.8
	Oct-20	6.72	25.80	2,428	0.06	0.23	-0.9
	Jan-21	6.44	22.70	2,964	0.18	15.60	49.0
	Apr-21	6.75	24.50	3,975	0.11	18.70	230.4
	Jul-21	6.74	29.80	4,237	0.04	8.57	96.2
MW0016	Oct-20	5.53	23.50	368.9	0.13	2.01	19.0
	Jan-21	3.76	18.10	573	0.32	17.60	210.5
	Apr-21	3.34	21.80	1,194	0.10	0.56	369.0
	Jul-21	3.74	26.60	2,107	0.21	2.46	379.2
MW0024	Jun-20	8.82	24.19	3,439	0.09	2.82	-220.5
	Oct-20	7.43	25.00	3,473	0.02	9.31	-69.7
	Jan-21	6.91	23.00	3,382	0.05	12.10	50.7
	Apr-21	7.35	25.10	4,206	2.63	19.10	246.4
	Jul-21	7.30	30.30	3,810	0.36	13.90	-98.0
MW0027	Jun-20	8.36	23.70	3,893	0.32	2.61	-212.5
	Oct-20	7.31	24.70	3,784	2.03	2.20	33.9
	Jan-21	6.73	21.90	3,894	0.87	18.10	300.0
	Apr-21	7.38	24.50	4,101	2.87	0.91	96.8
	Jul-21	7.28	28.40	3,505	2.62	13.70	118.6
MW0028	Jun-20	8.50	23.53	3,893	0.27	6.82	-227.9
	Oct-20*	-	-	-	-	-	-
	Jan-21**	6.70	21.80	3,976	0.43	24.10	219.6
	Apr-21	7.09	23.90	4,155	0.68	9.05	42.1
	Jul-21	7.00	29.90	3,968	0.30	2.30	-52.4
MW0029	Jun-20	7.38	24.02	330	0.18	4.33	-233.7
	Oct-20	7.05	22.60	2,003	0.07	9.60	-158.1
	Jan-21	3.09	23.50	3,238	0.12	4.13	21.32
	Apr-21	3.39	26.20	4,565	0.72	3.69	362.8
	Jul-21	3.33	29.70	4,783	0.47	8.52	381.5
MW0030	Jun-20	7.41	23.89	845	0.18	12.20	411.1
	Oct-20	5.48	28.00	4,175	0.10	4.19	180.3
	Jan-21	6.57	25.20	4,362	5.32	18.10	77.5
	Apr-21	7.37	25.20	5,269	3.42	11.20	136.4
	Jul-21	7.15	29.60	5,791	2.44	8.82	300.4

Table 5-3. Field Measurements (Continued)

Well ID (HMFN-)	Sample Date	pH (S.U.)	Temp. (°C)	Cond. (µS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW0031	Jun-20*	-	-	-	-	-	-
	Oct-20	7.37	26.50	4,629	0.84	9.32	118.1
	Jan-21	7.04	23.30	4,778	5.07	17.10	179.0
	Apr-21	6.13	24.60	3,891	4.36	3.13	127.1
	Jul-21**	7.36	28.80	5,729	7.36	25.20	320.1
MW0032	Jun-20	8.55	24.04	3,925	0.17	4.83	-308.1
	Oct-20	7.40	25.90	4,124	3.34	14.80	126.2
	Jan-21	7.09	22.50	4,170	3.19	9.17	171.1
	Apr-21**	7.03	23.40	3,928	0.57	52.30	121.3
	Jul-21	7.35	28.30	4,706	5.37	7.62	113.5
MW0033	Jun-20	7.71	24.25	3,874	0.55	3.22	-153.6
	Oct-20	7.21	26.20	4,035	0.09	5.42	-37.8
	Jan-21	3.99	22.50	3,939	0.20	15.10	153.7
	Apr-21	7.64	23.80	4,323	5.61	7.36	116.8
	Jul-21	7.12	27.60	4,301	0.33	1.39	-64.7
MW0034	Jun-20	8.13	23.87	499	0.14	10.60	-244.4
	Oct-20	2.82	28.10	5,138	0.17	1.74	376.3
	Jan-21**	2.58	23.30	4,050	0.18	21.30	205.5
	Apr-21	3.26	25.50	3,528	2.56	3.17	388.9
	Jul-21	3.48	29.10	3,340	0.76	2.42	426.5
MW0035	Jun-20	6.53	24.54	499	0.29	7.61	-282.1
	Oct-20	7.30	25.40	4,621	3.92	10.70	236.8
	Jan-21	7.00	22.70	5,166	0.34	17.30	86.3
	Apr-21	7.44	24.90	5,347	4.33	2.89	261.2
	Jul-21	7.39	28.40	6,444	0.36	9.87	34.1
MW0036	Jun-20**	8.05	24.72	593	0.09	35.90	-263.1
	Oct-20	6.45	25.80	3,474	0.13	2.20	2.2
	Jan-21	6.25	22.20	3,125	0.12	5.07	48.1
	Apr-21	6.46	23.60	3,698	0.10	5.25	214.4
	Jul-21	6.34	29.80	3,900	0.16	9.08	54.7
MW0037	Jun-20	10.89	23.96	827	0.28	1.26	-195.2
	Oct-20	6.24	24.50	1,597	0.06	12.90	-155.4
	Jan-21**	6.31	16.90	1,905	0.19	32.10	74.9
	Apr-21	6.83	21.50	2,059	0.09	1.37	36.0
	Jul-21	6.77	27.70	2,294	0.10	7.31	-123.9
MW0038	Jun-20	9.57	23.62	1,543	0.39	1.36	-120.2
	Oct-20	7.05	22.60	2,003	0.07	10.00	-158.1
	Jan-21	6.75	17.40	1,858	0.19	8.71	45.1
	Apr-21	7.03	21.30	2,531	1.16	4.63	199.6
	Jul-21	6.91	27.30	2,788	0.08	4.71	37.2
MW0039	Jun-20	9.47	25.35	3,788	0.43	3.61	-183.6
	Oct-20	7.35	25.40	3,912	1.87	8.56	109.1
	Jan-21	7.00	23.90	4,075	0.69	8.01	278.4
	Apr-21	7.53	24.70	4,347	1.81	5.87	210.3
	Jul-21	7.39	30.10	4,280	1.32	13.20	15.3
MW0040	Jun-20**	9.91	25.25	2,848	0.39	22.20	-153.0
	Oct-20	7.09	26.20	3,283	0.47	4.60	66.4
	Jan-21	6.94	25.10	4,292	0.17	11.30	271.3
	Apr-21	7.13	25.70	4,599	0.78	8.01	238.3
	Jul-21	7.25	30.80	5,410	0.50	1.79	70.2

Table 5-3. Field Measurements (Continued)

Well ID (HMFN-)	Sample Date	pH (S.U.)	Temp. (°C)	Cond. (µS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW0041	Jun-20	6.82	25.05	1,505	0.15	1.84	617.7
	Oct-20	7.33	29.00	4,164	1.90	0.87	56.5
	Jan-21	6.79	19.60	3,893	0.83	16.40	217.9
	Apr-21	7.40	25.60	4,925	3.01	10.10	210.0
	Jul-21**	7.36	29.70	5,536	0.47	96.40	99.2
MW0042	Jun-20*	-	-	-	-	-	-
	Oct-20	7.38	29.50	4,165	0.36	8.30	56.6
	Jan-21**	7.05	24.10	3,905	1.54	24.30	209.5
	Apr-21**	7.36	25.10	4,208	1.86	72.60	246.4
	Jul-21**	7.28	30.50	4,447	0.39	49.90	-6.6
MW0043	Jun-20	9.62	25.35	1,901	0.26	5.53	-106.1
	Oct-20	7.40	26.40	3,610	3.31	9.80	115.3
	Jan-21	7.14	20.10	2,484	1.90	16.30	284.2
	Apr-21**	7.55	24.90	4,313	9.03	21.30	248.9
	Jul-21	7.56	30.30	4,937	0.06	10.86	76.8
MW0044	Jun-20	6.13	24.95	4,377	0.42	2.85	-126.3
	Oct-20	7.80	26.50	45.9	4.02	7.11	99.2
	Jan-21**	6.79	19.60	3,893	0.88	24.60	217.9
	Apr-21	7.06	24.80	4,170	2.80	5.01	188.1
	Jul-21**	7.11	29.90	4,926	0.01	91.20	0.6
MW0045	Jun-20	8.56	23.64	1,930	0.13	2.09	625.9
	Oct-20	7.22	23.70	4,269	0.92	2.88	-61.0
	Jan-21	6.51	21.70	4,922	0.17	6.13	224.2
	Apr-21	7.26	24.60	5,773	2.64	3.17	293.5
	Jul-21	7.26	27.70	5,986	0.90	3.60	146.8
MW0046	Jun-20	11.01	23.66	933	0.06	0.43	-188.2
	Oct-20	7.04	23.50	1,924	0.19	13.00	-1.9
	Jan-21	6.59	19.10	2,512	0.10	6.23	51.4
	Apr-21	6.99	21.20	3,288	0.07	0.46	213.1
	Jul-21	6.70	27.00	2,909	0.11	3.59	88.6
MW0047	Jun-20*	-	-	-	-	-	-
	Oct-20	7.03	23.20	1,580	0.47	12.90	8.0
	Jan-21	6.57	19.40	2,256	0.41	4.91	48.7
	Apr-21	6.76	21.60	3,043	0.19	0.91	284.7
	Jul-21	6.65	27.20	3,173	0.13	2.86	114.5

Notes:
Field measurements displayed are final stabilized measurements collected before sampling.
SC = Specific conductance in microSiemens per centimeter (µS/cm).
DO = Dissolved oxygen in milligrams per liter (mg/L).
Turb. = Turbidity in nephelometric turbidity units (NTUs).
ORP = Oxidation/reduction potential in millivolts (mV).
NM = Not measured.
S.U. = Standard Units.
°C = Degree Celcius.
Values have been rounded from the source material field notes as follows: conductivity has been rounded to the nearest whole number, temperature and turbidity are shown to 2 decimal places, and ORP is shown to one decimal place.
*Information not available due to issues with electronic purge log files.
**Samples collected outside of FDEP FS 2200 stabilization Standard Operating Procedures.

Table 5-4. Groundwater TCE Concentration Reduction

Monitoring Well (HMFN-)	Screened Interval (ft bls)	Baseline Prior to System Startup	Q1		Q2		Q3		Q4	
		June-20	October-20		January-21		April-21		July-21	
		TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction
MW0002	30-40	49,000	2,000	95.92%	690	98.59%	320	99.35%	120	99.76%
MW0004	5-15	8.9 U	46	NA	33	NA	29	NA	12	NA
MW0008	20-30	4,100	60	98.54%	14	99.66%	14	99.66%	3.6	99.91%
MW0009	5-15	320	190	40.63%	49	84.69%	7.3	97.72%	13	95.94%
MW0011	20-30	44 U	4.4 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
MW0016	5-15	NA	0.9 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
MW0024	55-65	3.5	1.1	68.57%	0.89 U	74.57%	0.9	74.29%	0.89 U	74.57%
MW0027	40-45	160,000	65,000	59.38%	50,000	68.75%	98,000	38.75%	97,000	39.38%
MW0028	45-50	240,000	400,000	-66.67%	460,000	-91.67%	430,000	-79.17%	490,000	-104.17%
MW0029	10-20	89 U	66	NA	25	NA	13	NA	5.6	NA
MW0030	20-30	14,000	180	98.71%	180	98.71%	61	99.56%	15	99.89%
MW0031	30-40	8,400	1,100	86.90%	510	93.93%	1,400	83.33%	310	96.31%
MW0032	40-45	120,000	14,000	88.33%	7,400	93.83%	5,400	95.50%	3,600	97.00%
MW0033	45-50	83,000	22,000	73.49%	22,000	73.49%	23,000	72.29%	11,000	86.75%
MW0034	10-20	18 U	13	NA	6.3	NA	6.4	NA	1.1	NA
MW0035	30-40	200	6.5	96.75%	9.8	95.10%	2.5	98.75%	0.89 U	99.56%
MW0036	10-20	2.2 U	0.9 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
MW0037	5-15	4.4 U	0.9 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
MW0038	15-25	0.9 U	0.9 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
MW0039	30-40	8,400	290	96.55%	38	99.55%	11	99.87%	6	99.93%
MW0040	40-45	1,400	7.5	99.46%	12	99.14%	2.2	99.84%	2.4	99.83%
MW0041	30-40	1.0	26	-2500.00%	23	-2200.00%	52	-5100.00%	19	-1800.00%
MW0042	40-45	2,100	600	71.43%	540	74.29%	960	54.29%	1,100	47.62%
MW0043	30-40	15	29	-93.33%	25	-66.67%	7.8	48.00%	2	86.67%
MW0044	30-40	1,100	510	53.64%	220	80.00%	480	56.36%	460	58.18%
MW0045	25-35	89 U	2.3	NA	8.1	NA	1.2	NA	0.89 U	NA
MW0046	10-20	2.2 U	0.9 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
MW0047	20-30	1.8 U	2.2 U	NA	0.89 U	NA	0.89 U	NA	0.89 U	NA
Source Well Geo Mean	--	282.95	60.08	**78.77%**	40.19	**85.80%**	29.80	**89.47%**	18.52	**93.45%**

Notes:

µg/L = micograms per liter.

TCE = trichloroethene.

NA = Not available/applicable

Table 5-5. Groundwater cDCE Concentration Reduction

Monitoring Well (HMFN-)	Screened Interval (ft bls)	Baseline Prior to System Startup	Q1		Q2		Q3		Q4	
		June-20	October-20		January-21		April-21		July-21	
		cDCE (µg/L)	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction
MW0002	30-40	5,000	440	91.20%	140	97.20%	86	98.28%	51	98.98%
MW0004	5-15	840	36	95.71%	12	98.57%	6.5	99.23%	3.6	99.57%
MW0008	20-30	6,300	330	94.76%	41	99.35%	42	99.33%	18	99.71%
MW0009	5-15	6,700	640	90.45%	360	94.63%	76	98.87%	74	98.90%
MW0011	20-30	2,300	430	81.30%	49	97.87%	11	99.52%	5.8	99.75%
MW0016	5-15	NA	190	NA	71	NA	66	NA	6.3	NA
MW0024	55-65	0.53 U	0.76	NA	0.53 U	NA	0.53 U	NA	0.53 U	NA
MW0027	40-45	17,000	2,100 I	87.65%	2,000	88.24%	3,200	81.18%	2,700	84.12%
MW0028	45-50	11,000	9,800	10.91%	11,000	0.00%	16,000	-45.45%	15,000	-36.36%
MW0029	10-20	13,000	310	97.62%	48	99.63%	21	99.84%	16	99.88%
MW0030	20-30	15,000	450	97.00%	150	99.00%	66	99.56%	35	99.77%
MW0031	30-40	15,000	1,600	89.33%	490	96.73%	1,500	90.00%	570	96.20%
MW0032	40-45	42,000	12,000	71.43%	5,700	86.43%	5,200	87.62%	4,900	88.33%
MW0033	45-50	38,000	24,000	36.84%	21,000	44.74%	21,000	44.74%	15,000	60.53%
MW0034	10-20	2,000	74	96.30%	15	99.25%	11	99.45%	5.7	99.72%
MW0035	30-40	4,500	240	94.67%	81	98.20%	18	99.60%	7.9	99.82%
MW0036	10-20	11	56	-409.09%	11	0.00%	2.5	77.27%	0.55	95.00%
MW0037	5-15	150	5.4	96.40%	2.3	98.47%	3.1	97.93%	0.84	99.44%
MW0038	15-25	0.53 U	0.53 U	NA	0.53 U	NA	0.58 J	NA	0.53 U	NA
MW0039	30-40	16,000	3,300	79.38%	1,400	91.25%	680	95.75%	280	98.25%
MW0040	40-45	7,600	83	98.91%	56	99.26%	17	99.78%	19	99.75%
MW0041	30-40	5.8	55	-848.28%	99	-1606.90%	210	-3520.69%	92	-1486.21%
MW0042	40-45	2,800	2,100	25.00%	2,600	7.14%	3,800	-35.71%	3,400	-21.43%
MW0043	30-40	75	85	-13.33%	89	-18.67%	52	30.67%	15	80.00%
MW0044	30-40	930	780	16.13%	340	63.44%	540	41.94%	900	3.23%
MW0045	25-35	1,500	34	97.73%	6.3	99.58%	6.2	99.59%	1.8	99.88%
MW0046	10-20	170	51	70.00%	7.3	95.71%	2.5	98.53%	0.6	99.65%
MW0047	20-30	9.8	17	-73.47%	17	-73.47%	2.4	75.51%	0.76	92.24%
Source Well Geo Mean	--	975.45	204.25	**79.06%**	88.53	**90.92%**	60.23	**93.83%**	31.52	**96.77%**

Notes:

µg/L = micograms per liter.

cDCE = cis-1,2-dichloroethene.

NA = Not available/applicable

Table 5-6. Groundwater VC Concentration Reduction

Monitoring Well (HMFN-)	Screened Interval (ft bls)	Baseline Prior to System Startup	Q1		Q2		Q3		Q4	
		June-20	October-20		January-21		April-21		July-21	
		VC (µg/L)	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction
MW0002	30-40	380	18 U	95.26%	7.1 U	98.13%	7.1 U	98.13%	3.6 U	99.05%
MW0004	5-15	40	1.9	95.25%	0.71 U	98.23%	0.71 U	98.23%	0.71 U	98.23%
MW0008	20-30	700	12	98.29%	3.8	99.46%	2.1	99.70%	1.6	99.77%
MW0009	5-15	4,400	88	98.00%	30	99.32%	11	99.75%	9.2	99.79%
MW0011	20-30	3,400	140	95.88%	23	99.32%	4.3	99.87%	8.1	99.76%
MW0016	5-15	-	17	NA	8.7	NA	10	NA	0.91	NA
MW0024	55-65	0.75	0.71 U	5.33%	0.71 U	5.33%	0.71 U	5.33%	0.71 U	5.33%
MW0027	40-45	1,200	710 U	40.83%	360 U	70.00%	710 U	40.83%	0.71 U	99.94%
MW0028	45-50	710 U	1,400 U	NA	710 U	NA	3,600 U	NA	3,600 U	NA
MW0029	10-20	610	22	96.39%	4.1	99.33%	1.6	99.74%	0.71 U	99.88%
MW0030	20-30	3,700	18	99.51%	6	99.84%	5.5	99.85%	2.2	99.94%
MW0031	30-40	41,000	54	99.87%	13	99.97%	46	99.89%	22	99.95%
MW0032	40-45	1,800	430	76.11%	170	90.56%	170	90.56%	260	85.56%
MW0033	45-50	1,800	950	47.22%	990	45.00%	910	49.44%	890	50.56%
MW0034	10-20	200	8.9	95.55%	1.4	99.30%	0.71 U	99.65%	0.71 U	99.65%
MW0035	30-40	6,500	14	99.78%	5.5	99.92%	0.95	99.99%	0.71 U	99.99%
MW0036	10-20	230	3.3	98.57%	1.2	99.48%	0.71 U	99.69%	0.71 U	99.69%
MW0037	5-15	500	23	95.40%	4.8	99.04%	120	76.00%	14	97.20%
MW0038	15-25	96	74	22.92%	10	89.58%	22	77.08%	4	95.83%
MW0039	30-40	1,300	250	80.77%	210	83.85%	200	84.62%	150	88.46%
MW0040	40-45	2,000	20	99.00%	12	99.40%	1.5	99.93%	1.7	99.92%
MW0041	30-40	15	17	-13.33%	32	-113.33%	43	-186.67%	28	-86.67%
MW0042	40-45	1,500	550	63.33%	170	88.67%	180	88.00%	140	90.67%
MW0043	30-40	3.6 U	0.71 U	NA	0.71 U	NA	0.71 U	NA	0.71 U	NA
MW0044	30-40	14 U	140 U	NA	140 U	NA	360 U	NA	280 U	NA
MW0045	25-35	9,400	23	99.76%	5.9	99.94%	1.6	99.98%	1.9	99.98%
MW0046	10-20	280	37	86.79%	6	97.86%	0.71 U	99.75%	0.71 U	99.75%
MW0047	20-30	160	150	6.25%	37	76.88%	0.9	99.44%	0.71 U	99.56%
Source Well Geo Mean	--	453.79	38.34	**91.55%**	15.02	**96.69%**	11.44	**97.48%**	6.20	**98.63%**

Notes:

µg/L = micograms per liter.

VC = vinyl chloride.

NA = Not available/applicable

FIGURE 5-1 YEAR 1 PERFORMANCE MONITORING LOCATION PLAN

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

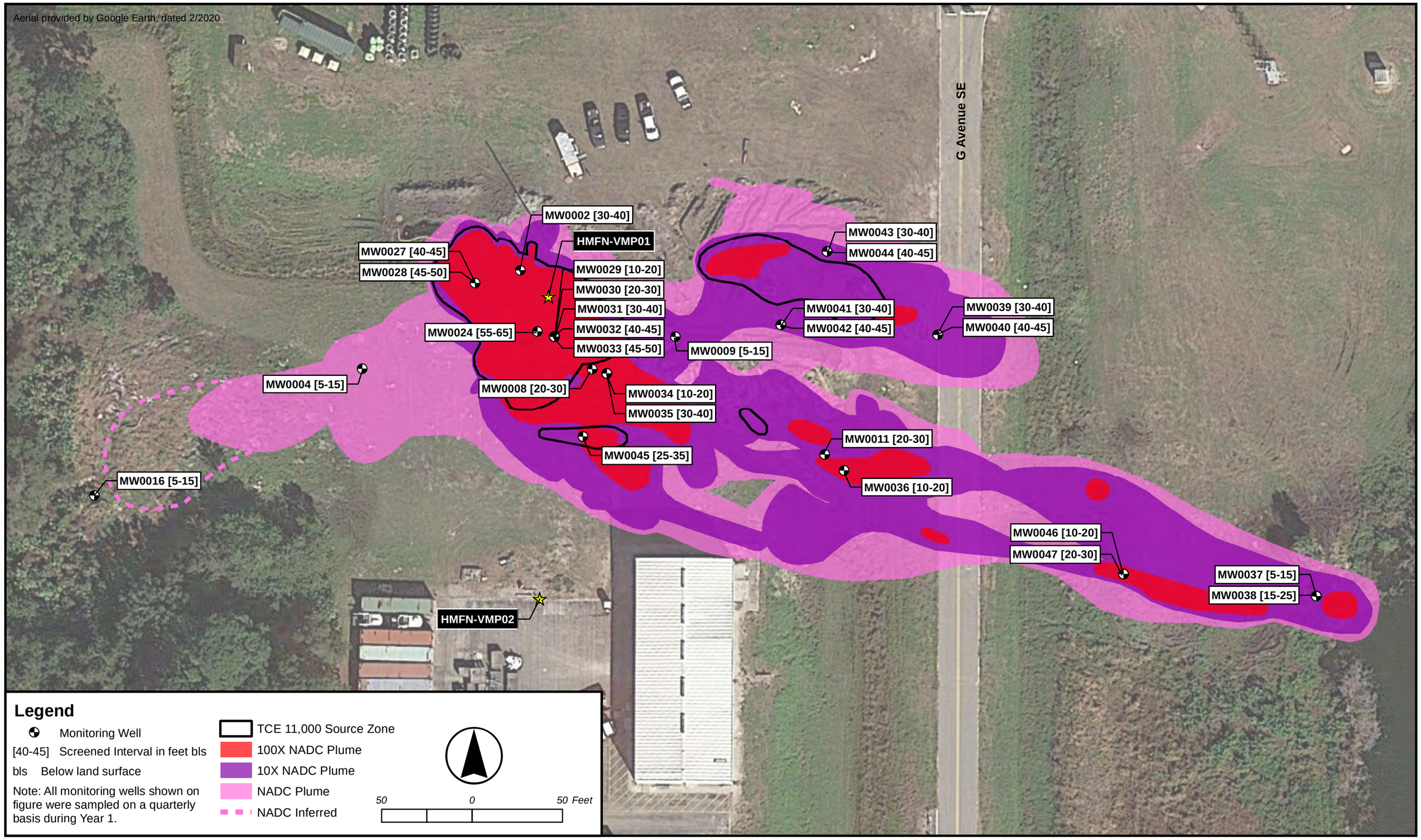


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FIGURE 5-2 OCTOBER 2020 SHALLOW GROUNDWATER CONTOUR MAP [0-20 FEET BLS]

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

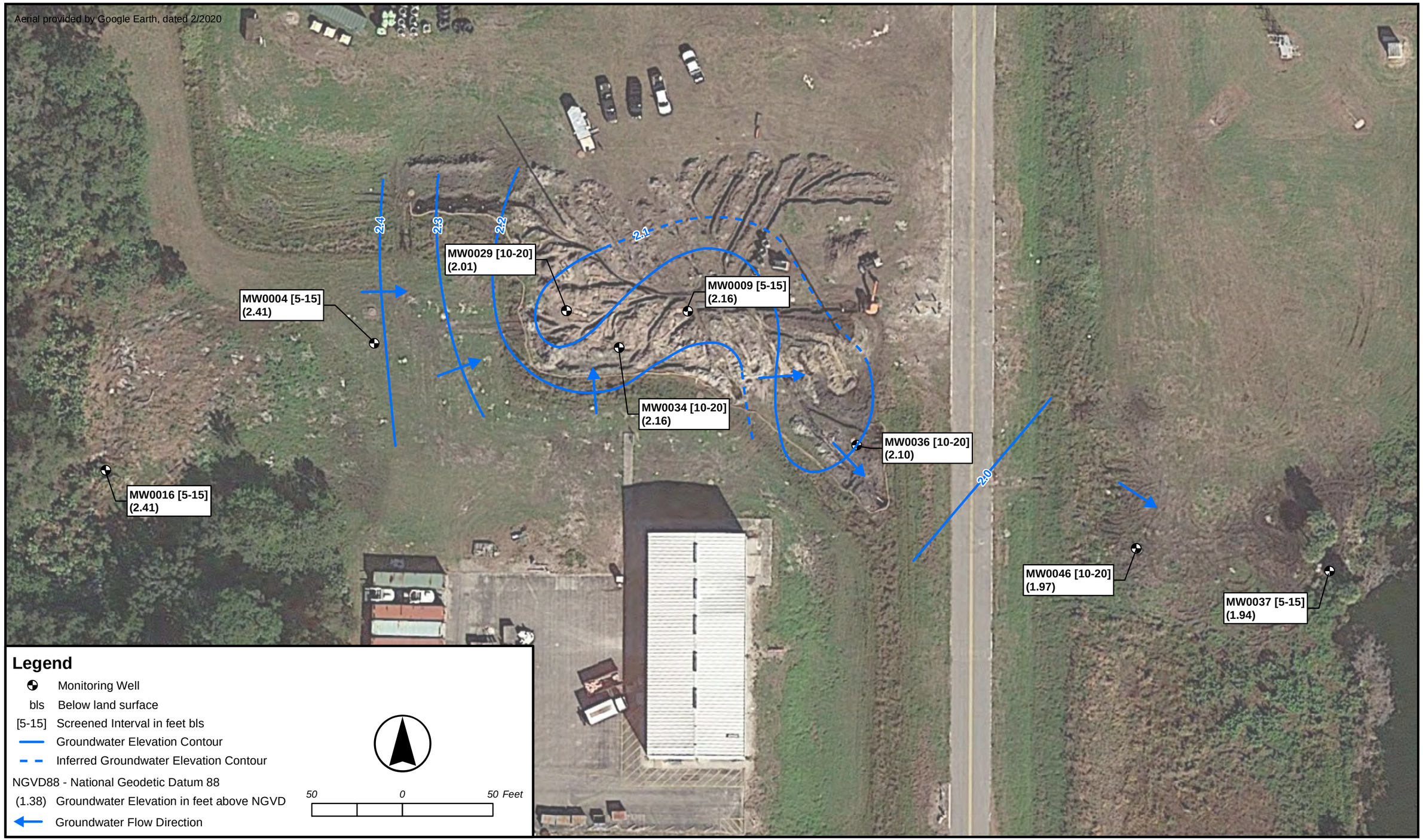

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FIGURE 5-3 OCTOBER 2020 INTERMEDIATE GROUNDWATER CONTOUR MAP (20-40 FEET BLS)

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

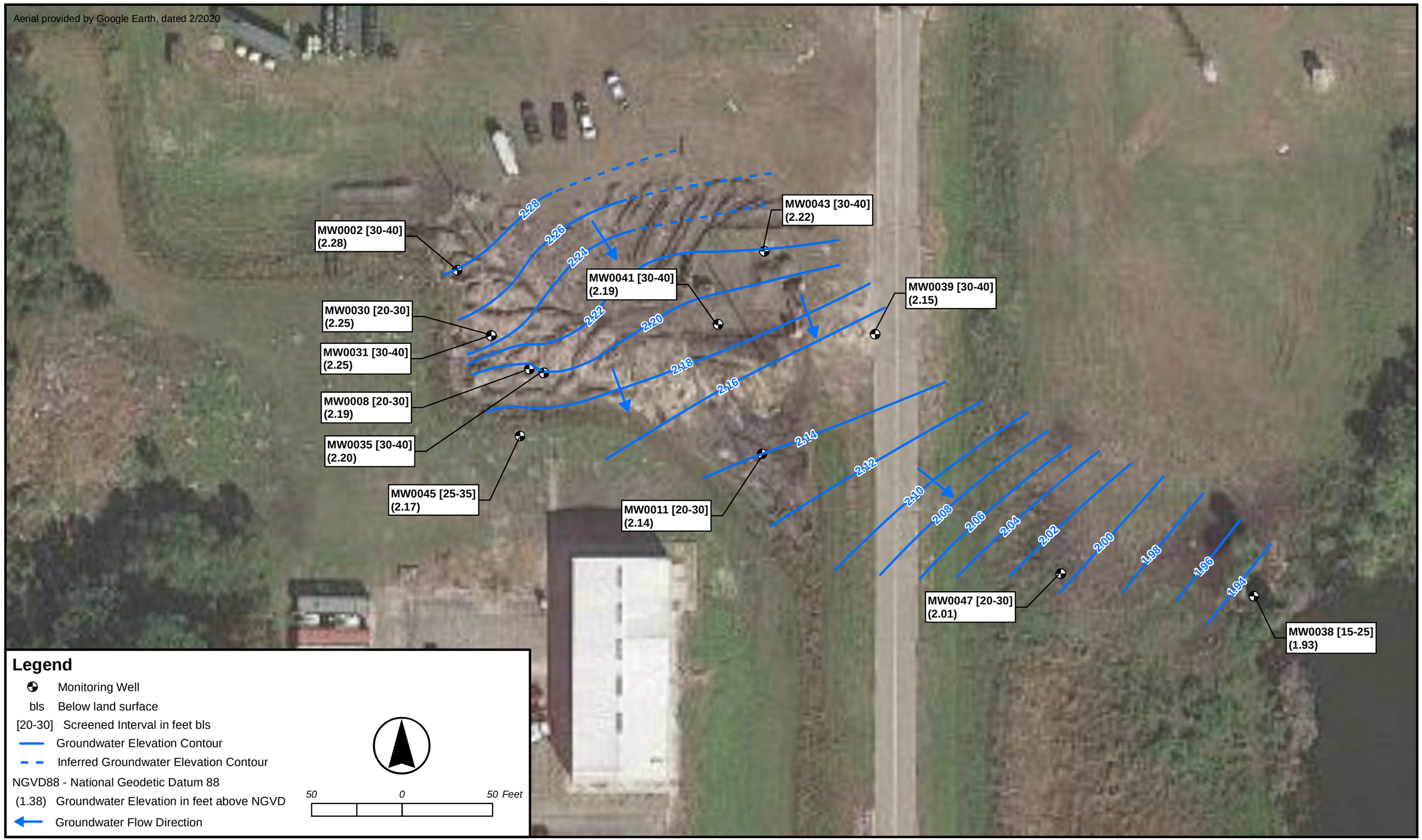

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FIGURE 5-5 JANUARY 2021 SHALLOW GROUNDWATER CONTOUR MAP [0-20 FEET BLS]

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

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FIGURE 5-6 JANUARY 2021 INTERMEDIATE GROUNDWATER CONTOUR MAP (20-40 FEET BLS)
SWMU 090, KENNEDY SPACE CENTER, FLORIDA

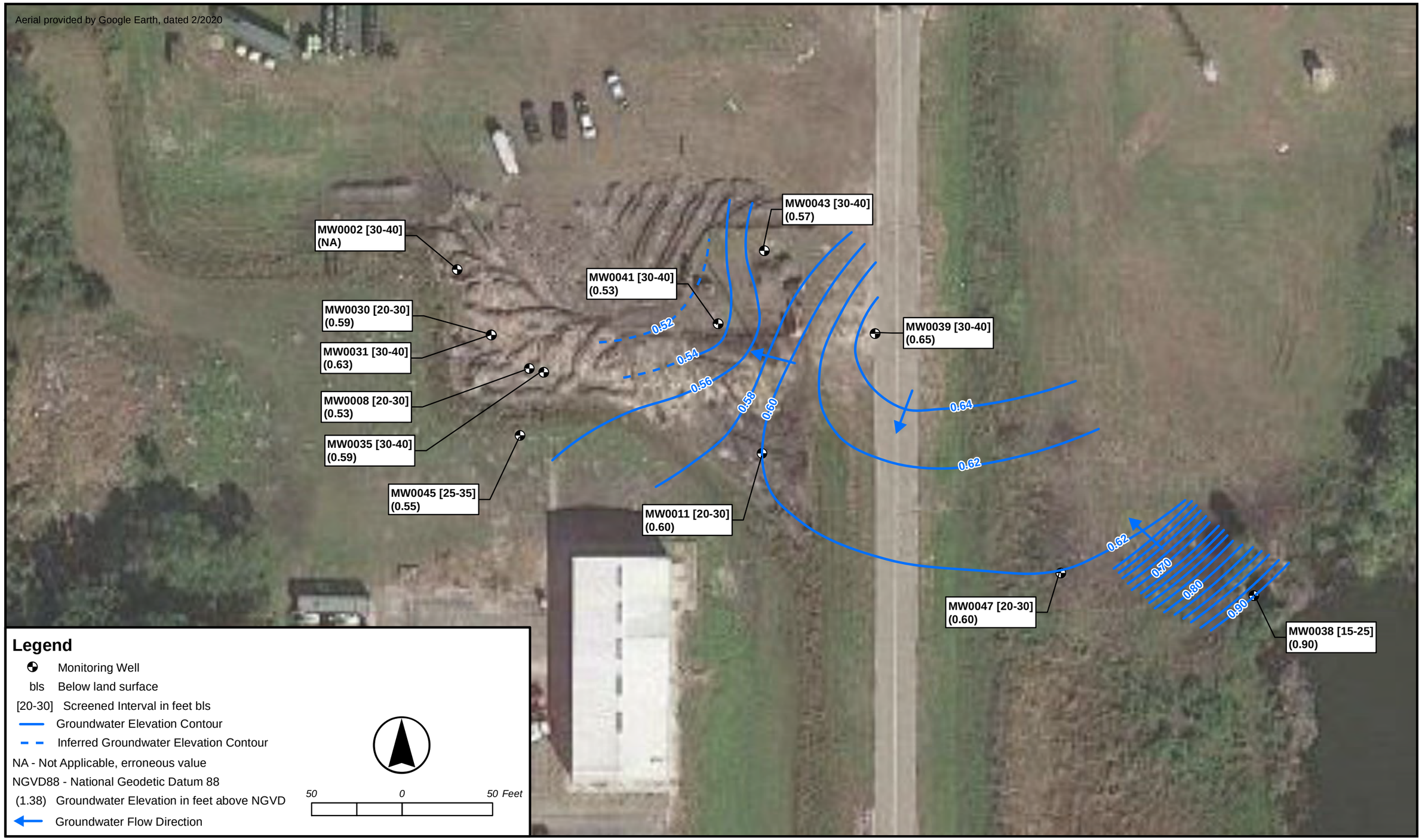

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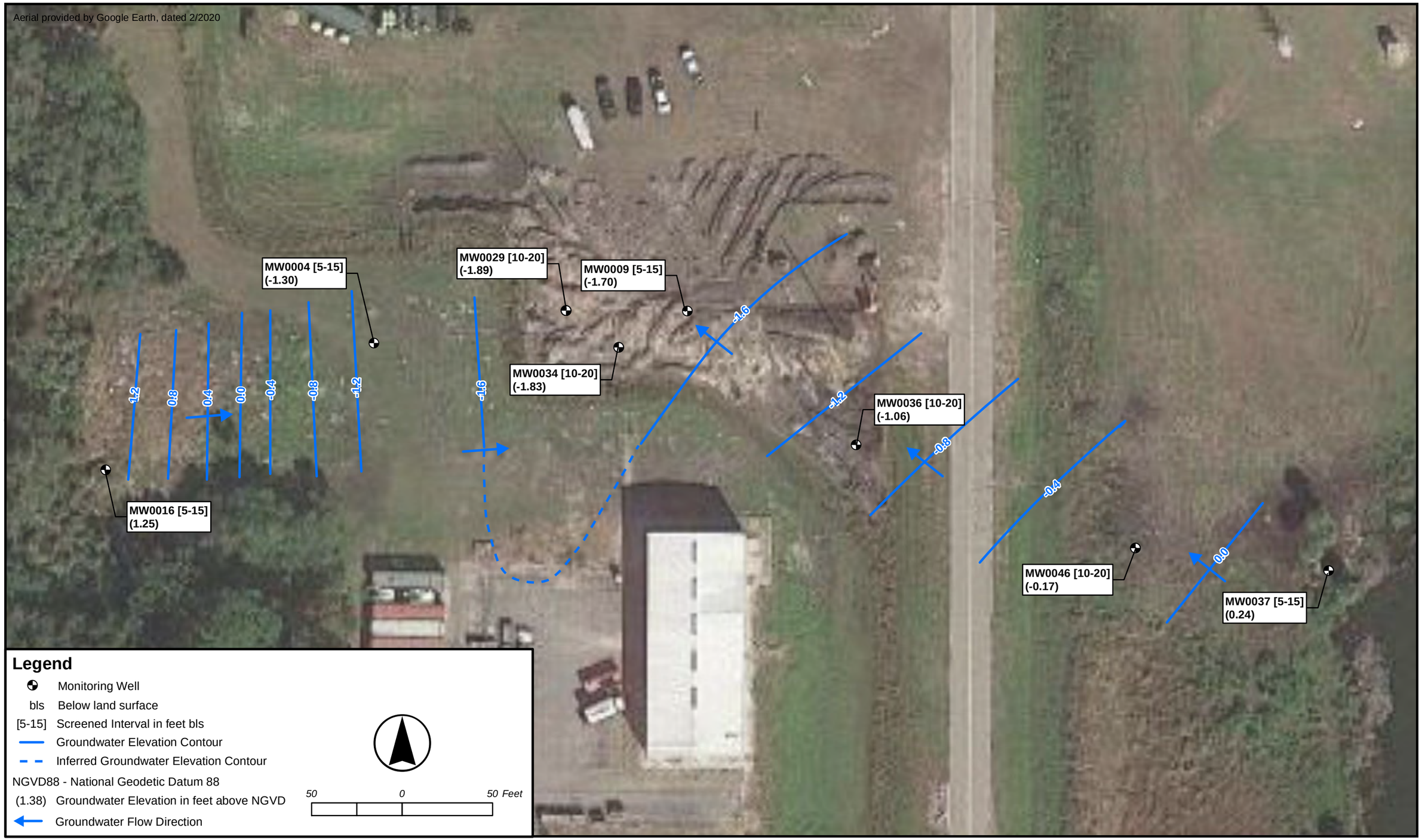
FIGURE 5-8 APRIL 2021 SHALLOW GROUNDWATER CONTOUR MAP [0-20 FEET BLS]

SWMU 090, KENNEDY SPACE CENTER, FLORIDA



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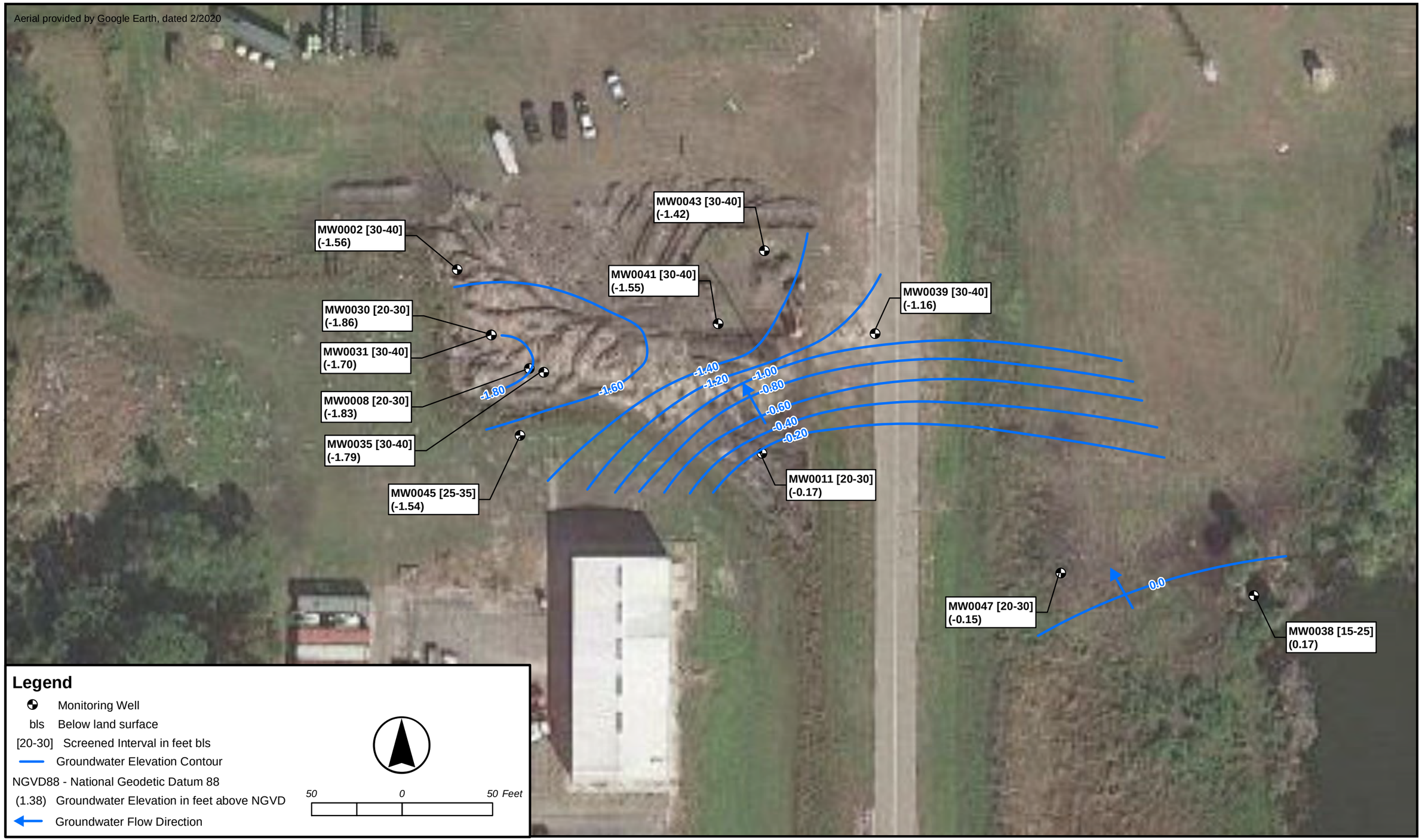

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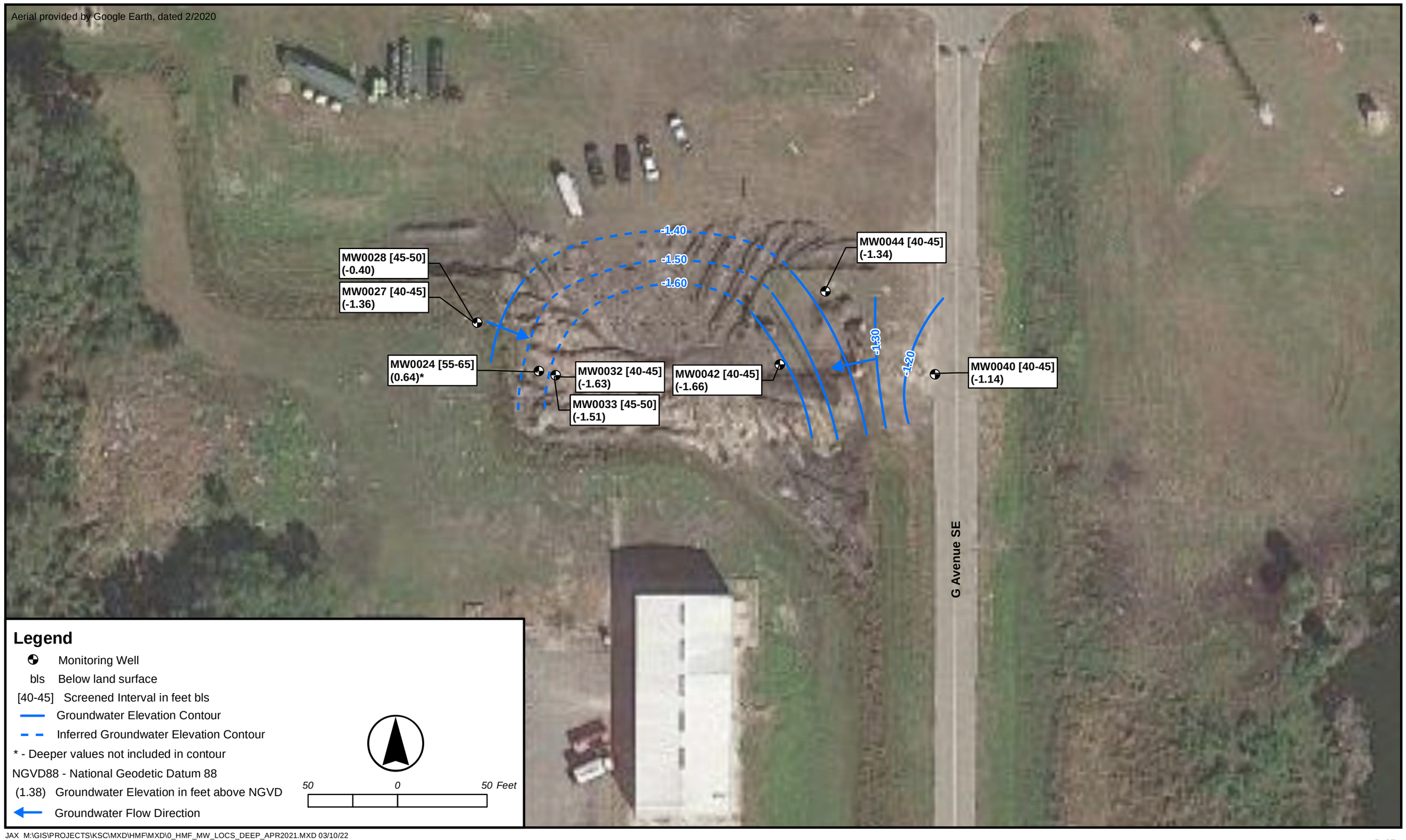

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FIGURE 5-11 JULY 2021 SHALLOW GROUNDWATER CONTOUR MAP [0-20 FEET BLS]

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

Aerial provided by Google Earth, dated 2/2020

MW0004 [5-15] (0.15)
MW0029 [10-20] (-0.19)
MW0009 [5-15] (0.70)
MW0034 [10-20] (-0.23)
MW0036 [10-20] (-0.22)
MW0016 [5-15] (0.20)
MW0046 [10-20] (0.03)
MW0037 [5-15] (0.05)

0.00
0.60
0.40
0.20
0.00
0.20
0.00
-0.20
-0.20
0.20
0.00
0.00

Legend

- Monitoring Well
- bls Below land surface
- [5-15] Screened Interval in feet bls
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour
- NGVD88 - National Geodetic Datum 88
- (1.38) Groundwater Elevation in feet above NGVD
- Groundwater Flow Direction

50 0 50 Feet

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FIGURE 5-12 JULY 2021 INTERMEDIATE GROUNDWATER CONTOUR MAP (20-40 FEET BLS)
SWMU 090, KENNEDY SPACE CENTER, FLORIDA

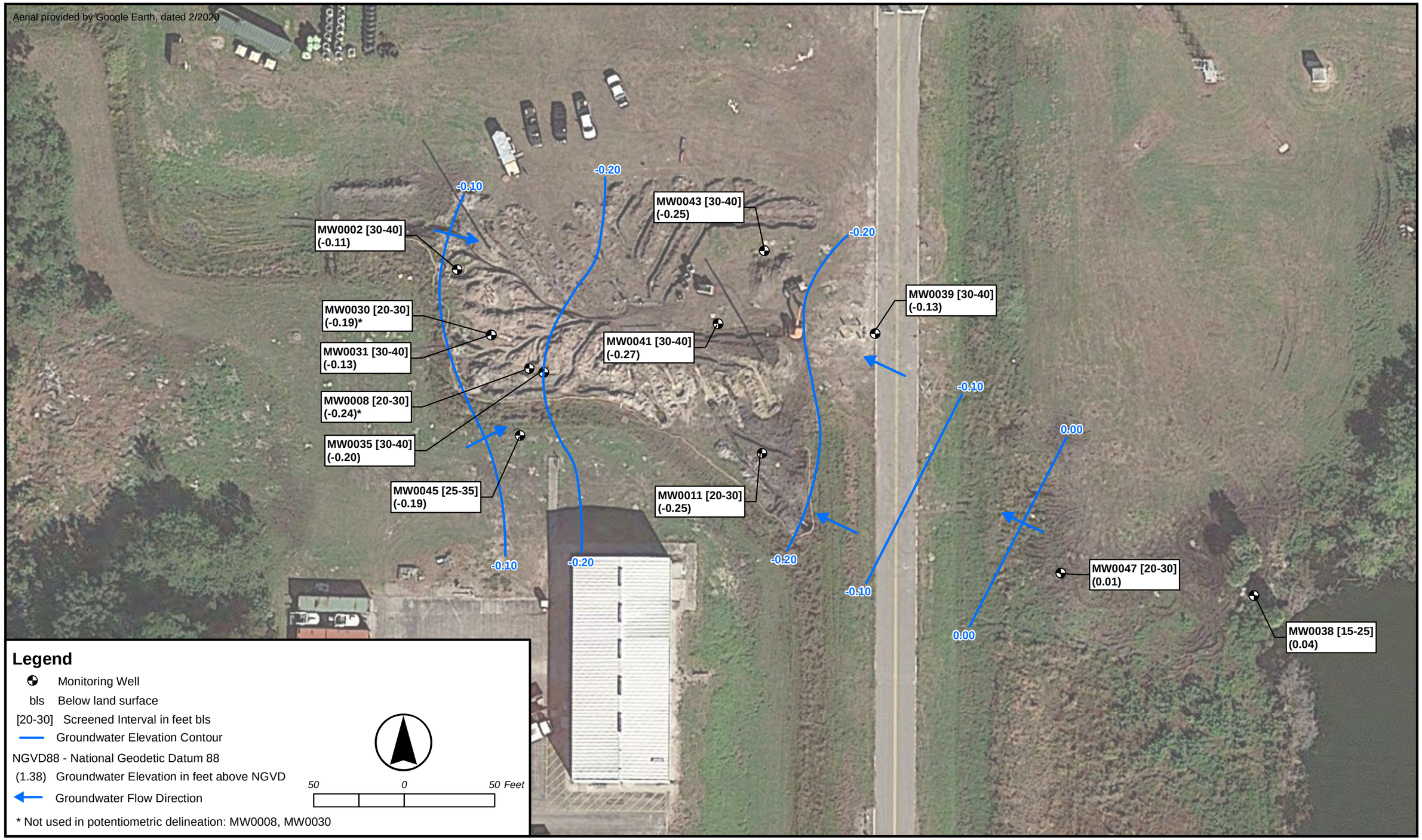

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FIGURE 5-13 JULY 2021 DEEP GROUNDWATER CONTOUR MAP (>40 FEET BLS)
SWMU 090, KENNEDY SPACE CENTER, FLORIDA

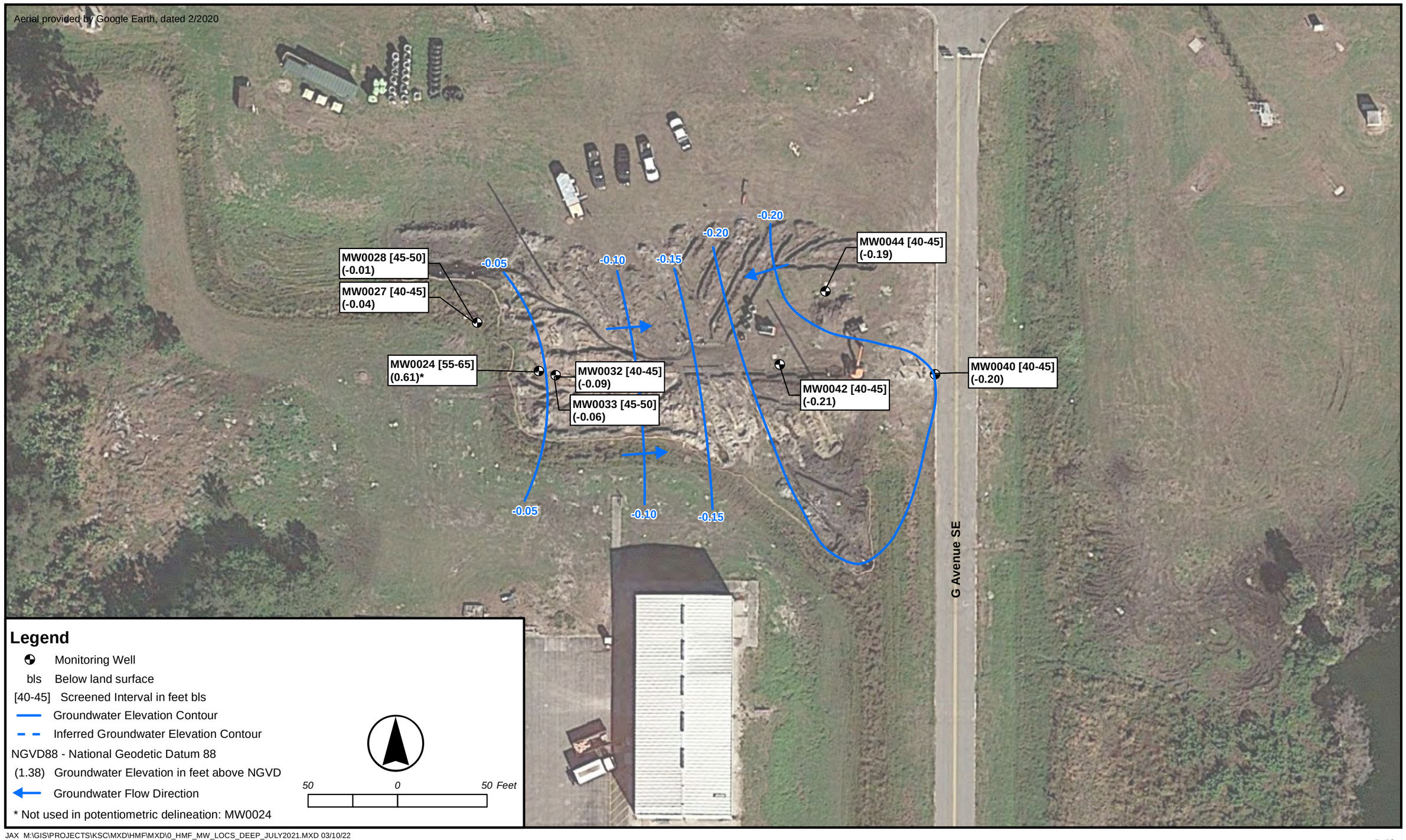

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FIGURE 5-14 SHALLOW <20 FEET BLS MONITORING WELL RESULTS

SWMU 090, KENNEDY SPACE CENTER, FLORIDA

Aerial provided by Google Earth, dated 2/2020

MW0029 [10 - 20]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	89 U	13000	73 U	610	1700
10/2020	66	310	5.1 I	22	3.6 U
01/2021	25	48	1.4 I	4.1	3.2
04/2021	13	21	0.73 U	1.6 J	1.3 J
07/2021	5.6	16	0.73 U	0.71 U	0.96 I

MW0004 [5 - 15]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	8.9 U	840	7.3 U	40	7.3 U
10/2020	46	36	2.7	1.9 I	0.73 U
01/2021	33	12	1.1 I	0.71 U	1.1 I
04/2021	29	6.5	0.73 U	0.71 U	1.4 J
07/2021	12	3.6	0.73 U	0.71 U	0.73 U

MW0009 [5 - 15]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	320	6700	73 U	4400	73 U
10/2020	190	640	7.3 U	88	7.3 U
01/2021	49	360	3.6 U	30	3.6 U
04/2021	13	74	0.73 U	9.2	0.73 U
07/2021	7.3	76	0.73 U	11	0.73 U

MW0036 [10 - 20]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	2.2 U	11	1.8 U	230	1.8 U
10/2020	0.89 U	56	0.73 U	3.3	0.73 U
01/2021	0.89 U	11	0.73 U	1.2 I	0.73 U
04/2021	0.89 U	2.5	0.73 U	0.71 U	0.73 U
07/2021	0.89 U	0.55 I	0.73 U	0.71 U	0.73 U

MW0016 [5 - 15]	TCE	cDCE	tDCE	VC	FREON-113
10/2020	0.89 U	190	6.9	17	0.73 U
02/2021	0.89 U	71	6	8.7	0.73 U
04/2021	0.89 U	66	5.7	10	0.73 U
07/2021	0.89 U	6.3	0.73 U	0.91 I	0.73 U

MW0034 [10 - 20]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	18 U	2000	15 U	200	15 U
10/2020	13	74	1.4 I	8.9	3
01/2021	6.3	15	0.73 U	1.4 I	1.1 I
04/2021	6.4	11	0.73 U	0.71 U	0.73 U
07/2021	1.1 I	5.7	0.73 U	0.71 U	0.73 U

MW0046 [10 - 20]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	2.2 U	170	1.8 U	280	1.8 U
10/2020	0.89 U	51	0.73 U	37	0.73 U
01/2021	0.89 U	7.3	0.73 U	6	0.73 U
04/2021	0.89 U	2.5	0.73 U	0.71 U	0.73 U
07/2021	0.89 U	0.6 I	0.73 U	0.71 U	0.73 U

MW0037 [5 - 15]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	4.4 U	150	3.6 U	500	3.6 U
10/2020	0.89 U	5.4	1.4 I	23	0.73 U
01/2021	0.89 U	2.3 I	0.74 I	4.8	0.73 U
04/2021	0.89 U	3.1	1.4 J	120	0.73 U
07/2021	0.89 U	0.84 I	0.73 U	14	0.73 U

Legend

- Monitoring Well
- Source Zone TCE 11,000 ug/L (Historical, 2016)
- > GCTL (LCP)
- Between NADC and 10xNADC
- Exceeding 10x NADC

Note: Contours are based on the most recent quarterly event data.

Detected Concentration (µg/L)
I = Reported value between Method Detection Limit (MDL) and Practical Quantitation Limit
J = Estimated value
U = Not detected at or above MDL (associated value)
[10-20] = Depth Interval in feet below land surface
LCP = Low Concentration Plume
HCP = High Concentration Plume
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
Pink highlights signify concentrations above GCTL
Red highlights signify concentrations above NADC
Yellow highlights signify results less than MDL but exceeds the NADC.
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride

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Aerial provided by Google Earth, dated 2/2020

MW0002 [30 - 40]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	49000	5000	360 U	380 I	19000
10/2020	2000	440	18 U	18 U	2200
02/2021	690	140	7.3 U	7.1 U	1100
04/2021	320	86	7.3 U	7.1 U	850
07/2021	120	51	3.6 U	3.6 U	470

MW0030 [20 - 30]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	14000	15000	150 U	3700	17000
10/2020	180	450	4 I	18	15
01/2021	180	150	1.8 U	6 I	14
04/2021	61	66	0.73 U	5.5	6
07/2021	15	35	0.73 U	2.2 I	3.4

MW0031 [30 - 40]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	8400	15000	360 U	41000	360 U
10/2020	1100	1600	15 U	54	15 U
01/2021	510	490	7.3 U	13 I	7.3 U
04/2021	1400	1500	7.4 J	46	7.3 U
07/2021	310	570	7.3 U	22 I	7.3 U

MW0008 [20 - 30]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	4100	6300	150 U	700	12000
10/2020	60	330	2.9	12	12
01/2021	14	41	0.76 I	0.89 I	3.8
04/2021	14	42	0.73 U	1.6 J	2.1 J
07/2021	3.6	18	0.73 U	1.2 I	1.6 I

MW0035 [30 - 40]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	200	4500	58 I	6500	36 U
10/2020	6.5	240	1.2 I	14	0.73 U
01/2021	9.8	81	1.3 I	5.5	0.73 U
04/2021	2.5	18	0.73 U	0.95 J	0.73 U
07/2021	0.89 U	7.9	0.73 U	0.71 U	0.73 U

MW0045 [25 - 35]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	89 U	1500	73 U	9400	73 U
10/2020	2.3 I	34	1.7 I	23	0.73 U
02/2021	8.1	6.3	0.94 I	5.9	0.73 U
04/2021	1.2 J	6.2	0.73 U	1.6 J	0.73 U
07/2021	0.89 U	1.8 I	0.73 U	1.9 I	0.73 U

MW0041 [30 - 40]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	1 I	5.8	0.73 U	15	0.73 U
10/2020	26	55	0.75 I	17	0.73 U
01/2021	23	99	0.95 I	32	0.73 U
04/2021	52	210	1.6 J	43	0.73 U
07/2021	19	92	0.77 I	28	0.73 U

MW0043 [30 - 40]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	15	75	3.6 U	3.6 U	14000
10/2020	29	85	0.73 U	0.71 U	26
01/2021	25	89	0.73 U	0.71 U	1.8 I
04/2021	7.8	52	0.73 U	0.71 U	14
07/2021	2 I	15	0.73 U	0.71 U	0.88 I

MW0039 [30 - 40]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	8400	16000	150 U	1300	150 U
10/2020	290	3300	36 U	250	36 U
01/2021	38 I	1400	18 U	210	18 U
04/2021	11 J	680	7.3 U	200	7.3 U
07/2021	6 I	280	3.6 U	150	3.6 U

MW0011 [20 - 35]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	44 U	2300	36 U	3400	36 U
10/2020	4.4 U	430	6.8 I	140	3.6 U
01/2021	0.89 U	49	0.91 I	23	0.73 U
04/2021	0.89 U	11	0.73 U	4.3	0.73 U
07/2021	0.89 U	5.8	0.73 U	8.1	0.73 U

MW0047 [20 - 30]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	1.8 U	9.8	1.5 U	160	1.5 U
10/2020	2.2 U	17	1.8 U	150	1.8 U
01/2021	0.89 U	17	0.73 U	37	0.73 U
04/2021	0.89 U	2.4 J	0.73 U	0.9 J	0.73 U
07/2021	0.89 U	0.76 I	0.73 U	0.71 U	0.73 U

MW0038 [15 - 25]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	0.89 U	0.53 U	2.8	96	0.73 U
10/2020	0.89 U	0.53 U	1.7 I	74	0.73 U
01/2021	0.89 U	0.53 U	0.73 U	10	0.73 U
04/2021	0.89 U	0.58 J	0.73 U	22	0.73 U
07/2021	0.89 U	0.53 U	0.73 U	4	0.73 U

Legend

- Monitoring Well
- Source Zone TCE 11,000 ug/L (Historical, 2016)
- ≥ GCTL (LCP)
- Between NADC and 10xNADC
- Exceeding 10x NADC

Note: Contours are based on the most recent quarterly event data.

Detected Concentration (µg/L)
I = Reported value between Method Detection Limit (MDL) and Practical Quantitation Limit
J = Estimated value
U = Not detected at or above MDL (associated value)
[10-20] = Depth Interval in feet below land surface
LCP = Low Concentration Plume
HCP = High Concentration Plume
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
Pink highlights signify concentrations above GCTL
Red highlights signify concentrations above NADC
Yellow highlights signify results less than MDL but exceeds the NADC.
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride

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Aerial provided by Google Earth, dated 2/2020

MW0027 [40 - 45]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	160000	17000	360 U	1200	11000
10/2020	65000	2100 I	730 U	710 U	23000
02/2021	50000	2000	360 U	360 U	21000
04/2021	98000	3200	730 U	710 U	27000
07/2021	97000	2700	730 U	710 U	37000

MW0028 [45 - 50]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	240000	11000	730 U	710 U	81000
10/2020	400000	9800	1500 U	1400 U	120000
02/2021	460000	11000	730 U	710 U	110000
04/2021	430000	16000	3600 U	3600 U	140000
07/2021	490000	15000	3600 U	3600 U	120000

MW0024* [55 - 65]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	3.5	0.53 U	0.73 U	0.75 I	0.73 U
10/2020	1.1 I	0.76 I	0.73 U	0.71 U	0.73 U
01/2021	0.89 U	0.53 U	0.73 U	0.71 U	0.73 U
04/2021	0.9 J	0.53 U	0.73 U	0.71 U	0.73 U
07/2021	0.89 U	0.53 U	0.73 U	0.71 U	0.73 U

MW0032 [40 - 45]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	120000	42000	1500 U	1800 I	1500 U
10/2020	14000	12000	150 U	430 I	150 U
01/2021	7400	5700	73 U	170 I	73 U
04/2021	5400	5200	73 U	170 J	73 U
07/2021	3600	4900	36 U	260	36 U

MW0033 [45 - 50]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	83000	38000	730 U	1800 I	730 U
10/2020	22000	24000	180 U	950	180 U
01/2021	22000	21000	180 U	990	180 U
04/2021	23000	21000	290 U	910 J	290 U
07/2021	11000	15000	150 U	890	150 U

MW0044 [40 - 45]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	1100	930	15 U	14 U	82000
10/2020	510	780	150 U	140 U	15000
01/2021	480 I	540 I	360 U	360 U	32000
04/2021	460 I	900 I	290 U	280 U	27000
07/2021	220 I	340 I	150 U	140 U	17000

MW0040 [40 - 45]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	1400	7600	73 U	2000	73 U
10/2020	7.5	83	1.8 I	20	0.73 U
01/2021	12	56	0.73 U	12	0.73 U
04/2021	2.2 J	17	0.73 U	1.5 J	0.73 U
07/2021	2.4 I	19	0.73 U	1.7 I	0.73 U

MW0042 [40 - 45]	TCE	cDCE	tDCE	VC	FREON-113
06/2020	2100	2800	36 U	1500	36 U
10/2020	600	2100	15 U	550	15 U
01/2021	540	2600	36 U	170	36 U
04/2021	960	3800	36 U	180	36 U
07/2021	1100	3400	18 U	140	18 U

G Avenue SE

Legend

- Monitoring Well
- Source Zone TCE 11,000 ug/L (Historical, 2016)
- ≥ GCTL (LCP)
- Between NADC and 10xNADC
- Exceeding 10x NADC
- GCTL Exceedance (inferred)

Detected Concentration (µg/L)
I = Reported value between Method Detection Limit (MDL) and Practical Quantitation Limit
J = Estimated value
U = Not detected at or above MDL (associated value)
[10-20] = Depth Interval in feet below land surface
LCP = Low Concentration Plume
HCP = High Concentration Plume
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
Pink highlights signify concentrations above GCTL
Red highlights signify concentrations above NADC
Yellow highlights signify results less than MDL but exceeds the NADC.
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride

Notes:
1) * Concentrations at this depth below GCTL; probably due to position of confining layer
2) Contours are based on the most recent quarterly event data.
3) MW0024, MW0028, and MW0033 are screened below the AS treatment interval of 45 ft bls.

50 0 50 Feet

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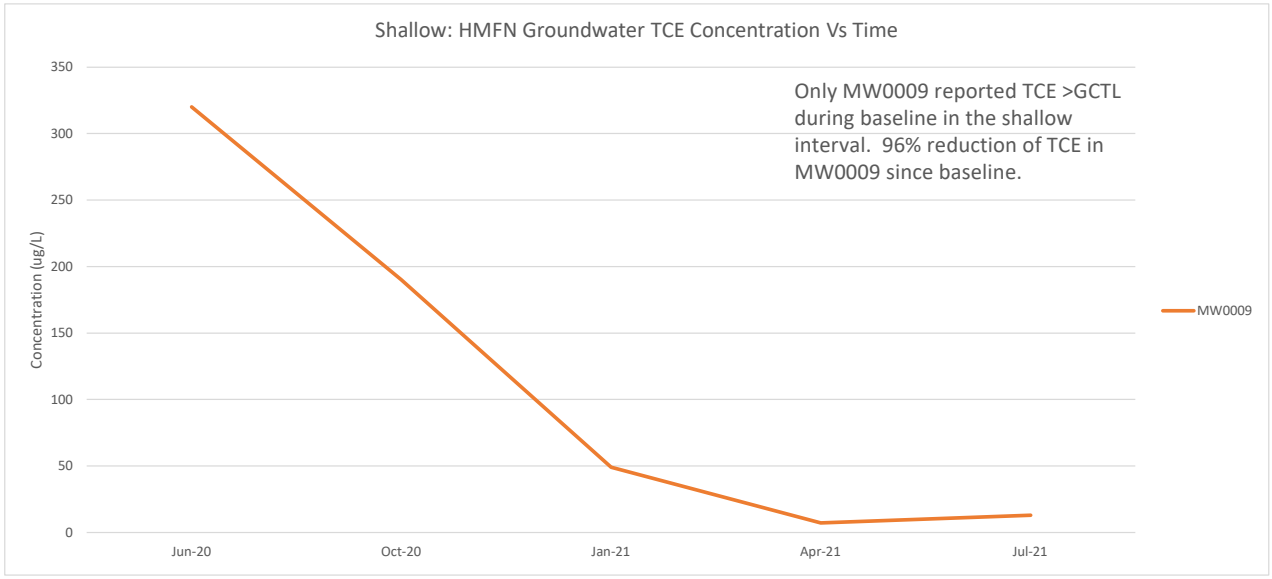
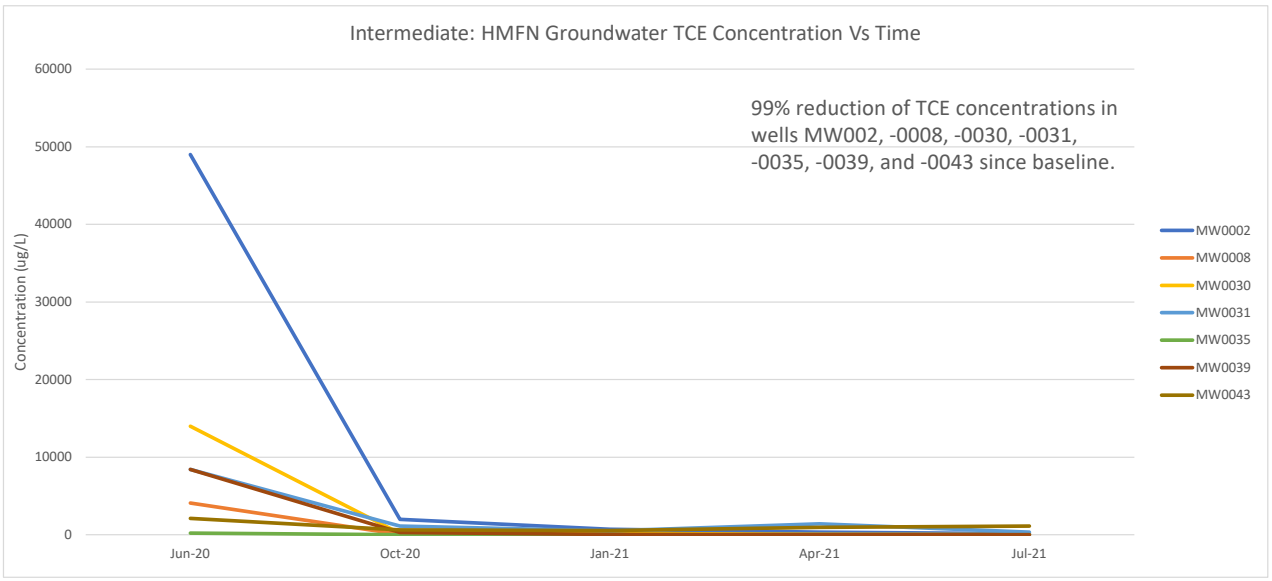
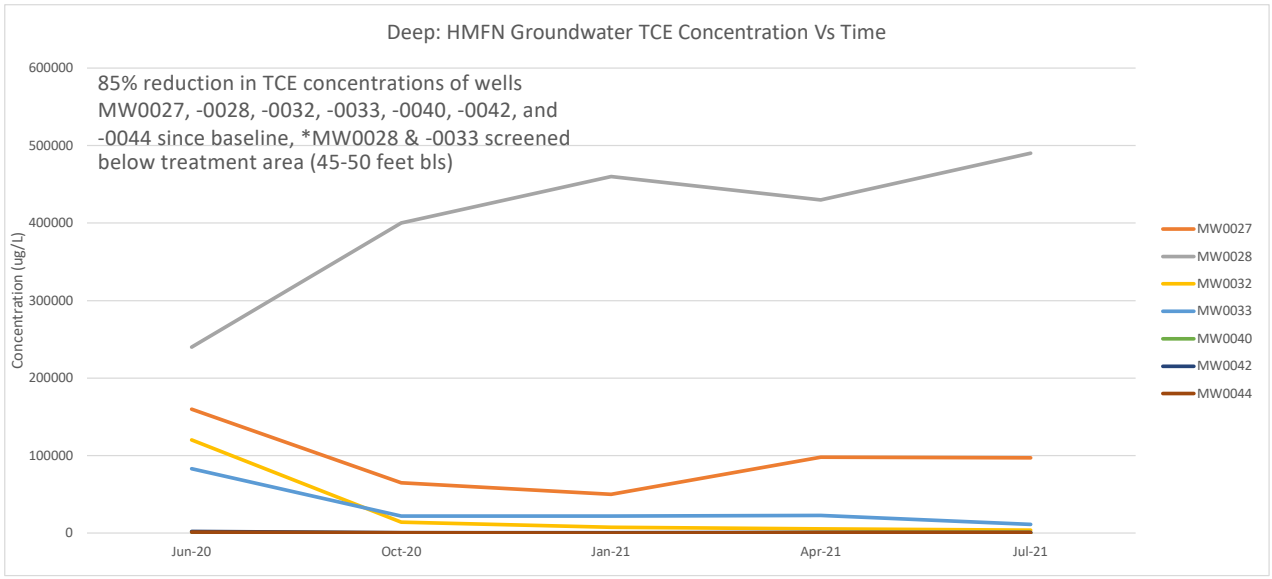
Figure 5-17. TCE Trend Analysis



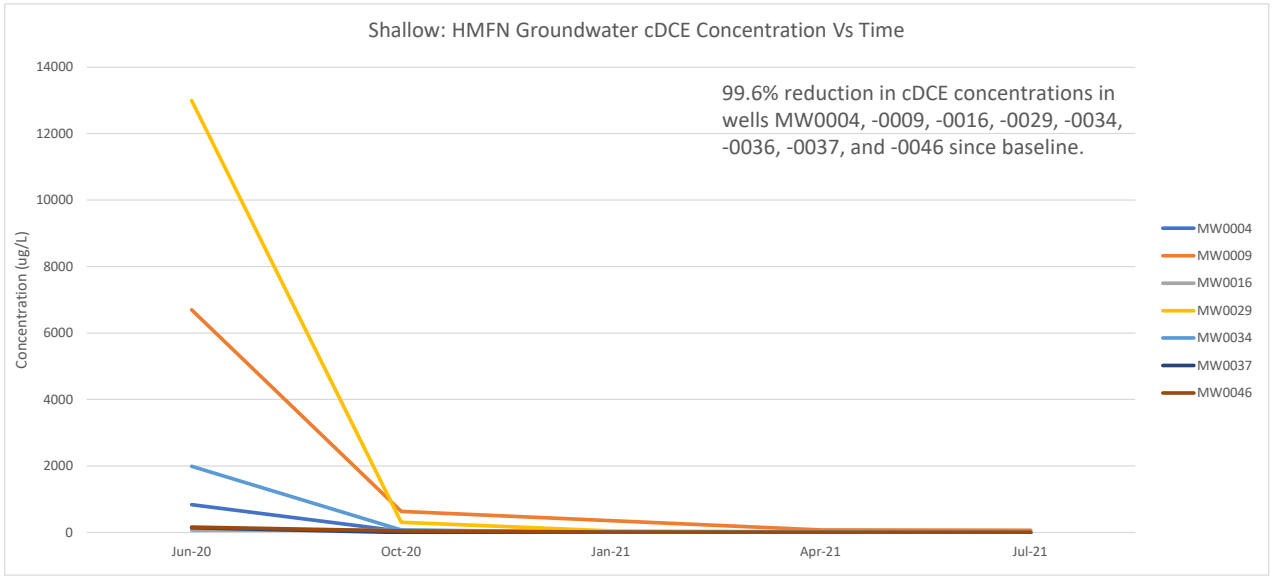


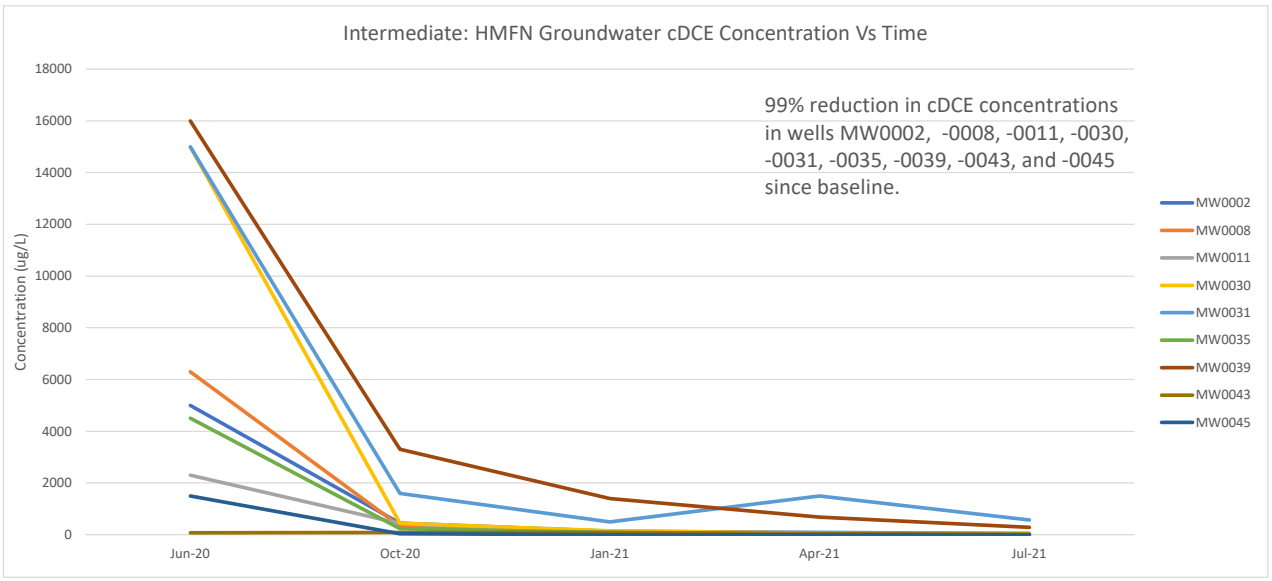


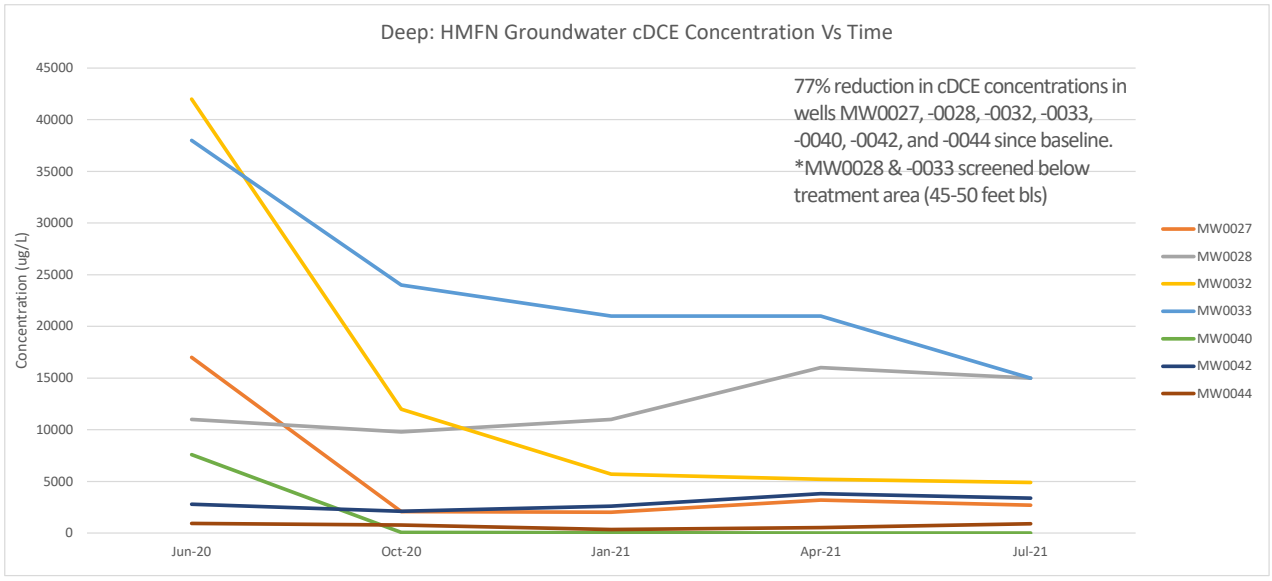
97.1% reduction in TCE concentrations of plume centerline wells for all three intervals since baseline.

Baseline sampling conducted in June 2020. System start-up completed in August 2020.

Figure 5-18. cDCE Trend Analysis



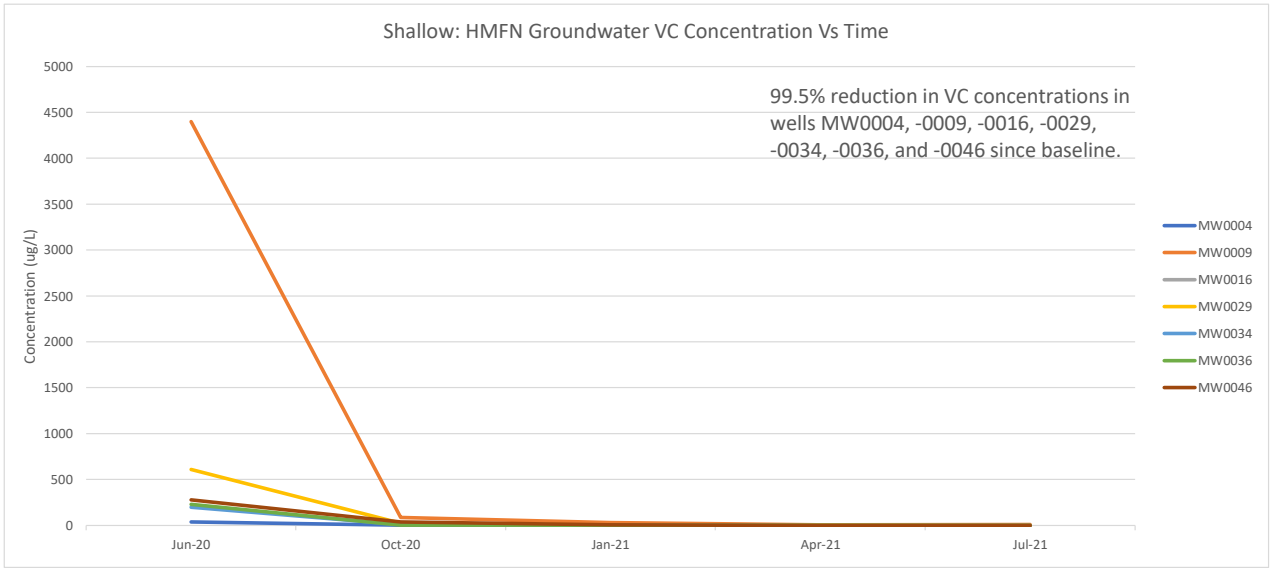


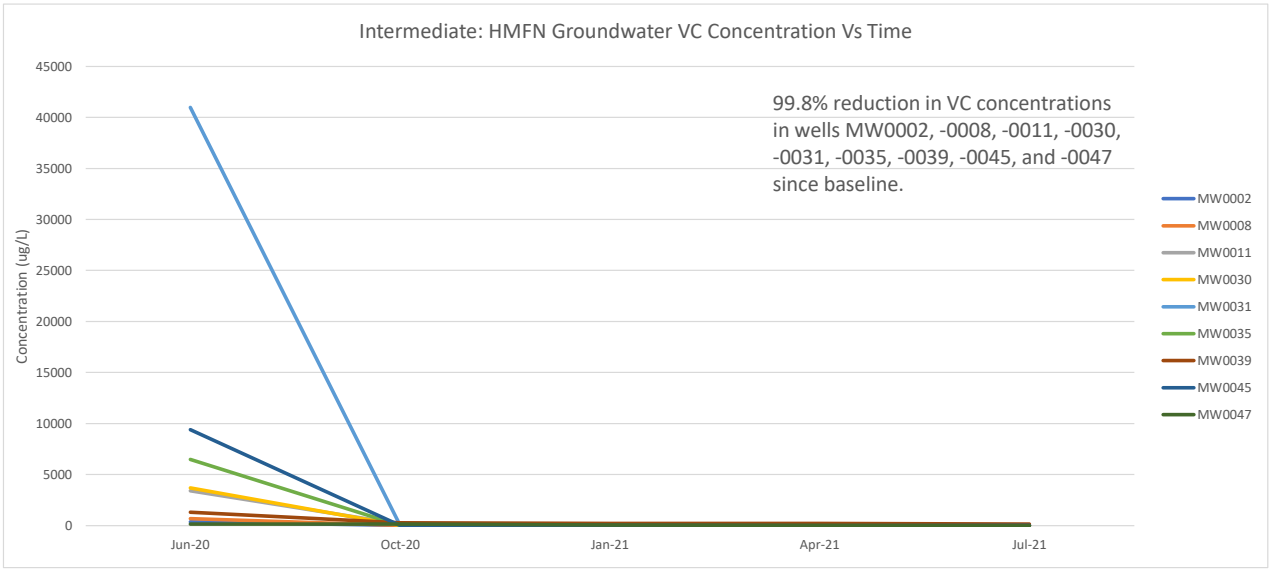


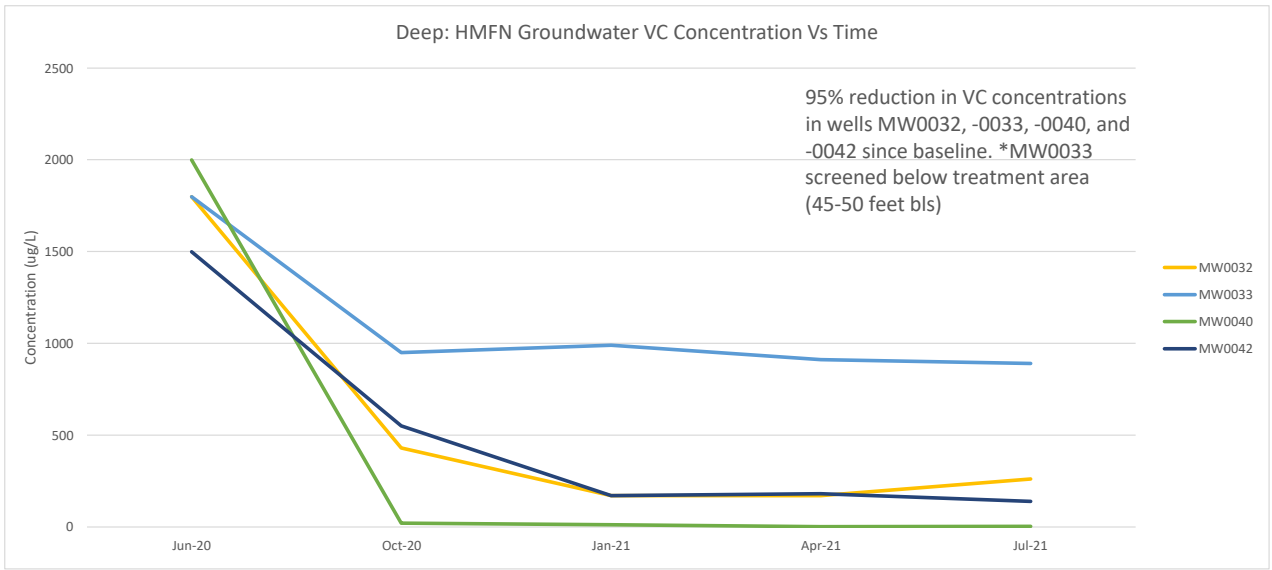
98.4% reduction in cDCE concentrations of plume centerline wells for all three intervals since baseline.

Baseline sampling conducted in June 2020. System start-up completed in August 2020.

Figure 5-19. VC Trend Analysis







99.5% reduction in VC concentrations of plume centerline wells for all three intervals since baseline.

Baseline sampling conducted in June 2020. System start-up completed in August 2020.

SECTION VI
CONCLUSIONS AND RECOMMENDATIONS

Installation and operation of the HMFN AS IM was completed in accordance with the IMWP (NASA, 2017a) and IWP (NASA, 2019b). The AS system was installed between December 2019 and August 2020, and includes a total of 213 AS wells with screens ranging from 25 feet to 45 feet bls. System start-up was achieved in August 2020, with baseline sampling completed in June 2020. Year 1 performance monitoring activities were conducted on a quarterly schedule in October 2020, January 2021, April 2021, and July 2021. Air sampling was also conducted as part of performance monitoring for health and safety monitoring, as well as to verify compliance with the KSC Title V Air Operation Permit.

Based on Year 1 system operation and performance monitoring results, the AS system at HMFN is operating as designed and meeting performance criteria. The pulse cycles are operating and functioning properly, with the AS wells operating at the designed flowrate of 5 cfm/well and pressures of 15.0, 18.3, and 26.8 psig at the shallow, shallow-intermediate, and intermediate depths, respectively. The overall runtime of the AS system for the Year 1 reporting period (August 2020 to August 2021) was approximately 82%, with downtime attributed to groundwater sampling activities and system maintenance.

Performance monitoring results indicate that within the first year of operation, TCE concentrations in groundwater in plume centerline wells across all depth zones have been reduced by more than 97%. Similarly, cDCE and VC concentrations of plume centerline monitoring wells across the entire saturated treatment area have been reduced by 98% and more than 99%, respectively. As of July 2021, concentrations exceed GCTLs in groundwater at 20 of the 28 performance monitoring wells and exceed NADCs in groundwater at 8 of the 28 monitoring wells. Continued operation of the AS system is required to meet the IM objective to reduce COC groundwater concentrations to less than applicable NADCs.

The contents of this report were presented during the January 2022 KSCRT meeting, which included recommendations for continued OM&M, performance monitoring, and future activities.

During that meeting, Team consensus was reached to continue with Year 2 AS system OM&M for HMFN, with the following modifications:

- Continue to operate the AS system throughout Year 2, but Zone 1 operations will be discontinued. Operation of Zone 1, which includes 17 AS wells screened from 25 to 32 feet bls in the western portion of the AS well network, is no longer required based on Year 1 performance monitoring results which indicated VOC concentrations have been reduced to less than NADCs in MW0004 and MW0016.

Based on Year 1 performance monitoring results, a reduced Year 2 monitoring program is recommended, as follows:

- Remove MW0035 and MW0036 from the performance monitoring program. These two monitoring wells will be discontinued based on all VOCs measuring below GCTLs during the last two quarterly sampling events.
- Reduce sampling frequency of MW0046 and MW0047 from quarterly to annual based on two consecutive rounds of sampling results below GCTLs. Annual sampling will continue at these wells to monitor the observed groundwater flow direction reversal away from the borrow pond towards these two wells.
- Reduce sampling frequency at the remaining 24 performance monitoring wells (MW0002, MW0004, MW0008, MW0009, MW0011, MW0016, MW0024, MW0027, MW0028, MW0029, MW0030, MW0031, MW0032, MW0033, MW0034, MW0037, MW0038, MW0039, MW0040, MW0041, MW0042, MW0043, MW0044, and MW0045) from quarterly to semi-annual as outlined in the December 2019 IWP.

Table 6-1 provides the Year 2 performance monitoring recommendations. The performance monitoring well locations and sampling frequency for Year 2 is provided on Figure 6-1.

Additional recommendations for HMFN include:

- Reduce air sampling to one annual ambient air sampling event during the Year 2 reporting period. This is based on no OSHA PEL or ACGIH TLV exceedances detected

during any Year 1 air monitoring sampling events. Air sampling will be conducted at the same two locations sampled during Year 1 (HMFN-VMP01 and HMFN-VMP02 – see Figure 6-1).

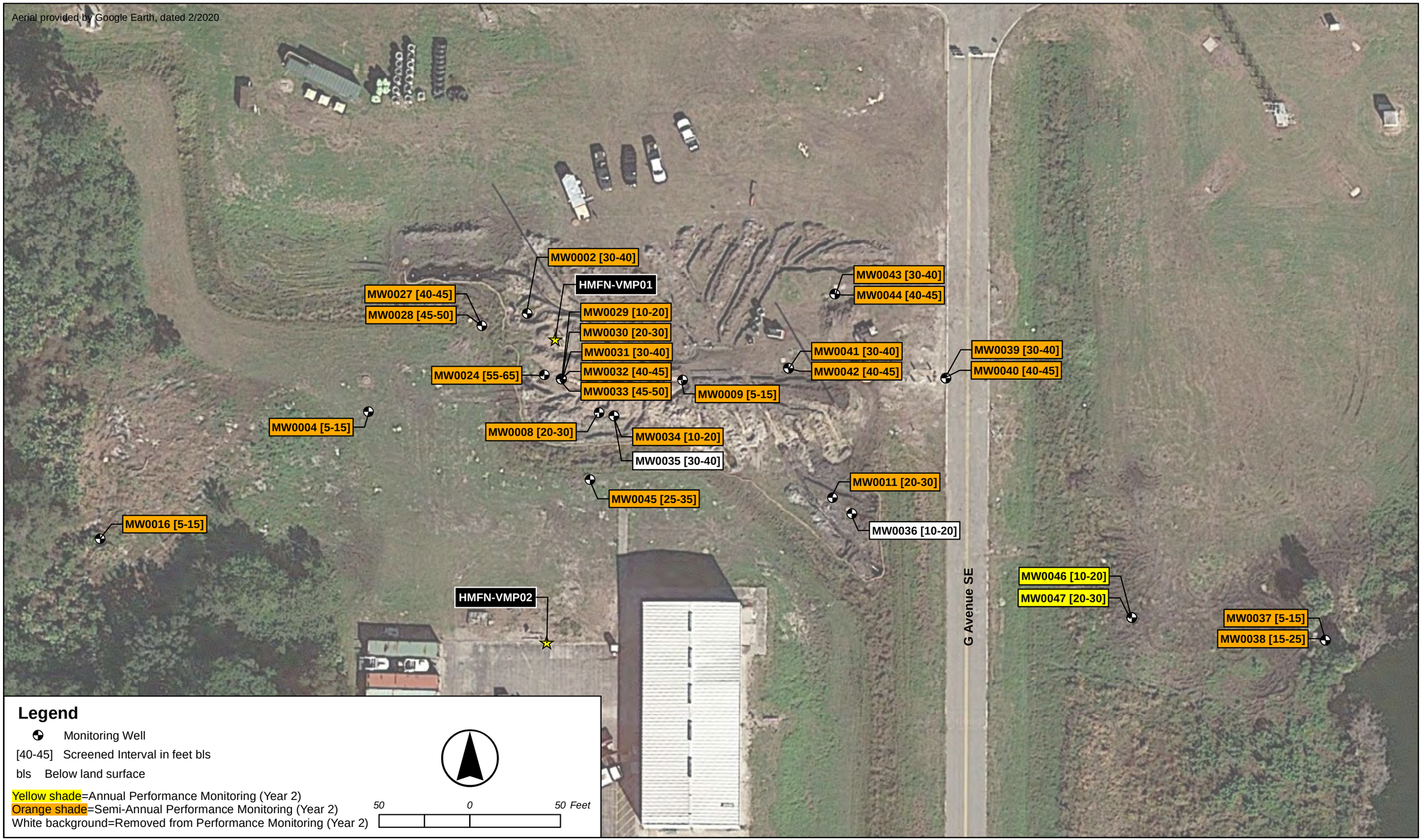
- Conduct a future DPT groundwater sampling investigation to assess system progress and contaminant conditions below the AS treatment volume. The results will be presented to KSCRT at a future meeting with recommendations for additional monitoring wells, if needed.
- Following the AS IM, NASA will re-visit plans for potentially utilizing another remedial technology to treat contamination in the deep source zone. This will be presented at a future KSCRT meeting.

The above recommendations for HMFN were presented at the January 2022 KSCRT Meeting, and Team consensus was reached on the recommended path forward (Meeting Minute 2201-M03, Decision D01). The January 2022 KSCRT Meeting Minutes are included in Appendix H.

Table 6-1. Year 2 Performance Monitoring Plan

Montoring Well	Screen Interval	Monitoring Function	Year 2 Sampling Schedule	
(HMFN-)	(ft bls)		Semi-Annual	Annual
MW0002	[30-40]	Within SZ and centerline of the plume (HS1).	**X**	--
MW0004	[5-15]	Within VOC NADC impacted area and centerline of the plume (HS1).	**X**	--
MW0008	[20-30]	Within VOC 100xNADC impacted area and centerline of the plume (HS1).	**X**	--
MW0009	[5-15]	Within shallow interval of 10xNADC impacted area.	**X**	--
MW0011	[20-30]	Within CVOC 10xNADC impacted area.	**X**	--
MW0016	[5-15]	Provides horizontal delineation of plume to the west.	**X**	--
MW0024	[55-65]	Within HS SZ.	**X**	--
MW0027	[40-45]	Within HS SZ.	**X**	--
MW0028	[45-50]	Within HS SZ.	**X**	--
MW0029	[10-20]	Within HS1 SZ and centerline of the plume.	**X**	--
MW0030	[20-30]	Within HS1 SZ and centerline of the plume.	**X**	--
MW0031	[30-40]	Within HS1 SZ and centerline of the plume.	**X**	--
MW0032	[40-45]	Within HS1 SZ and centerline of the plume.	**X**	--
MW0033	[45-50]	Within HS1 SZ and centerline of the plume.	**X**	--
MW0034	[10-20]	Within 100xNADC impacted area centerline of the plume (HS1).	**X**	--
MW0035	[30-40]	(Monitoring discontinued at MW0035 based on all COCs less than GCTLs for last two quarterly monitoring events)	(Discontinued)	
MW0036	[10-20]	(Monitoring discontinued at MW0036 based on all COCs less than GCTLs for last two quarterly monitoring events)	(Discontinued)	
MW0037	[5-15]	Within 10xNADC impacted area centerline of the plume (HS1).	**X**	--
MW0038	[15-25]	Within 10xNADC impacted area centerline of the plume (HS1).	**X**	--
MW0039	[30-40]	Within 10xNADC impacted area (HS2).	**X**	--
MW0040	[40-45]	Within 10xNADC impacted area (HS2).	**X**	--
MW0041	[30-40]	Within 10xNADC impacted area (HS2).	**X**	--
MW0042	[40-45]	Within 10xNADC impacted area (HS2).	**X**	--
MW0043	[30-40]	Within 10xNADC impacted area (HS2).	**X**	--
MW0044	[30-40]	Within 10xNADC impacted area (HS2).	**X**	--
MW0045	[25-35]	Within Hot Spot 1 Source Zone (HS1).	**X**	--
MW0046	[10-20]	Within 100xNADC impacted area (HS1).	--	**X**
MW0047	[20-30]	Within 100xNADC impacted area (HS1).	--	**X**

Notes:
ft bls = feet below land surface.
HCP = High Concentration Plume.
HS = Hot Spot.
NADC = Natural Attenuation Default Concentrations.
SZ = Source Zone.
X = Sample will be collected for VOCs via EPA method 8260B
*Semi-annual events are anticipated to be conducted in October 2021 and April 2022, with annual event in April 2022.



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SECTION VII
REFERENCES

FDEP (Florida Department of Environmental Protection), 2017. FDEP Standard Operating Procedure FS 2200, Groundwater Sampling, DEP-SOP-001/01. January.

NASA (National Aeronautics and Space Administration), 2001. Trailer/Equipment Tiedown Plan for the John F. Kennedy Space Center, Florida. August.

NASA, 2017a. Hypergol Maintenance Facility North (SWMU 090) Air Sparge Interim Measures Work Plan. Kennedy Space Center, Florida. October.

NASA, 2017b. Sampling and Analysis Plan for the RCRA Corrective Action Program at the John F. Kennedy Space Center, Florida. Revision 5. August.

NASA, 2019a. Site-Specific Health and Safety Plan for Field Activities at the Hypergol Maintenance Facility North. Kennedy Space Center, Florida. October.

NASA, 2019b. Hypergol Maintenance Facility North (SWMU 090) Implementation Work Plan. Kennedy Space Center, Florida. December.

APPENDIX A

PHOTOGRAPHIC LOG OF AIR SPARGE SYSTEM CONSTRUCTION COMPLETION ACTIVITIES

Figure 1: 1/27/2020 7:58:40 AM: Looking SW, mobilizing materials.

Figure 2: 1/27/2020 1:08:01 PM: Looking SE, beginning excavation for Manifold #2 trailer pipe rack area.

Figure 3: 1/28/2020 9:44:26 AM: Looking SE, stringing layout for Manifold #2 trailer pipe rack construction.

Figure 4: 1/28/2020 3:30:56 PM: Looking NW, trenching for Zone 7 AS well piping.

Figure 5: 1/28/2020 3:30:58 PM: Looking SW, investigating whether AS 70 was potentially drilled through MW0007.

Figure 6: 1/28/2020 3:31:03 PM: Looking E, painted trench paths, Manifold #2 trailer area, and drillers working in Zone 10 area.

Figure 7: 1/29/2020 10:34:57 AM: Looking W, constructing Manifold #2 trailer pipe racks.

Figure 8: 1/29/2020 2:36:19 PM: Looking SE, Zones 7 and 6 trenching.

Figure 9: 1/29/2020 2:36:42 PM: Looking SE, Zones 7 and 6 trenching.

Figure 10: 1/29/2020 2:37:02 PM: Looking SE, Zones 7 and 6 trenching.

Figure 11: 1/29/2020 2:37:34 PM: Looking SE, Zones 7 and 9 trenching.

Figure 12: 1/29/2020 2:38:33 PM: Looking S, Zones 9 and 6 trenching.

Figure 13: 1/29/2020 2:47:08 PM: Looking NE, Zones 6 and 9 trenching.

Figure 14: 1/31/2020 4:05:40 PM: Looking W, Zone 6 trenching.

Figure 15: 1/31/2020 4:06:23 PM: Looking S, Zone 6 trenching.

Figure 16: 1/31/2020 4:06:28 PM: Looking W, Zones 6, 9, and 7 trenching.

Figure 17: 1/31/2020 4:06:33 PM: Looking W, Zones 9, 8, and 7 trenching.

Figure 18: 1/31/2020 4:06:40 PM: Looking N, Zone 8 trenching.

Figure 19: 1/31/2020 4:07:46 PM: Looking W, panoramic view of Zones 6, 9, 7, and 8 trenching.

Figure 20: 2/3/2020 4:14:23 PM: Looking W, 1-inch HDPE deployment in Zones 6, 9, and 7.

Figure 21: 2/6/2020 5:19:12 PM: Looking W, Zones 6 and 9 trenching.

Figure 22: 2/6/2020 5:22:52 PM: Looking NW, Zones 1 and 4 trenching and pipe racks for Manifold #1 trailer.

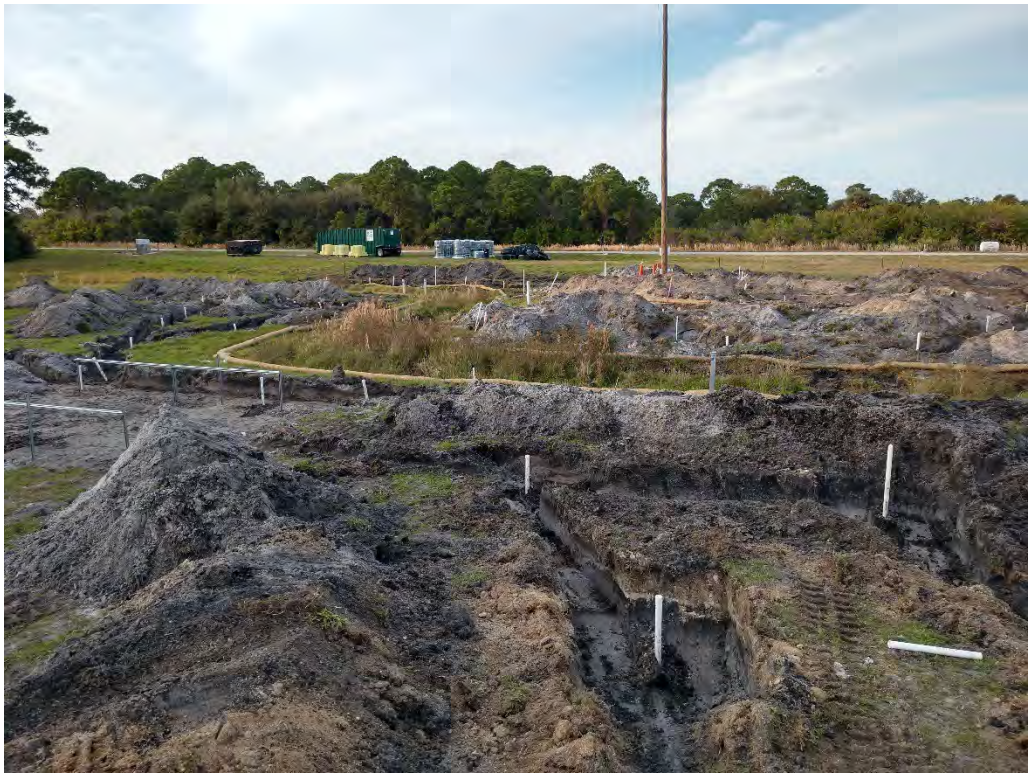


Figure 23: 2/6/2020 5:22:57 PM: Looking N, Zones 4, 6, and 7 trenching and pipe racks for Manifold #1 trailer.

Figure 24: 2/6/2020 5:23:12 PM: Looking NE, Zones 5, 6, 9, and 8 trenching and pipe racks for Manifold #2 trailer.

Figure 25: 2/6/2020 5:23:17 PM: Looking E, Zones 5 and 6 trenching.

Figure 26: 2/11/2020 10:04:31 AM: First of three unmarked comm lines severed during trenching west of M7-1011.

Figure 27: 2/11/2020 10:05:52 AM: Illustrating depth to first of three unmarked comm lines severed during trenching west of M7-1011.

Figure 28: 2/12/2020 9:47:34 AM: Second of three unmarked comm lines severed during trenching west of M7-1011.

Figure 29: 2/12/2020 9:48:04 AM: Locations of three unmarked comm lines severed during trenching west of M7-1011.

Figure 30: 2/12/2020 10:37:28 AM: Repairing the one of the three unmarked comm lines severed during trenching west of M7-1011 deemed still necessary.

Figure 31: 2/13/2020 10:25:17 AM: Looking S, backfilling and grading Zones 8 and 9.

Figure 32: 2/14/2020 11:04:22 AM: Looking S, backfill, warning tape, and marking wire placed in Zone 7.

Figure 33: 2/14/2020 4:36:31 PM: Looking N, header trench and utility markings placed following severing three comm lines west of M7-1011.

Figure 34: 2/14/2020 4:36:56 PM: Repair of one of the three unmarked comm lines severed during trenching west of M7-1011 deemed still necessary.

Figure 35: 2/18/2020 2:10:54 PM: Looking N, Zone 5 trenches and placing and grading backfill in Zone 6.

Figure 36: 2/20/2020 1:23:34 PM: Looking W, backfill placed in Zone 1.

Figure 37: 2/20/2020 1:41:04 PM: Looking W, backfill, warning tape, and marking wire placed in Zone 1.

Figure 38: 2/25/2020 2:38:27 PM: Looking SE, preparing to deploy 2-inch HDPE header piping for Zones 3 and 10.

Figure 39: 2/25/2020 4:47:29 PM: Looking N, deploying 2-inch HDPE header piping for Zones 3 and 10.

Figure 40: 2/25/2020 4:47:48 PM: Looking N, deploying 2-inch HDPE header piping for Zones 3 and 10.

Figure 41: 2/26/2020 9:12:55 AM: Looking SE, discharging frac-tank contents within AS area.

Figure 42: 2/26/2020 9:12:59 AM: Looking SE, discharging frac-tank contents within AS area.

Figure 43: 2/26/2020 9:23:26 AM: Looking NW, potholing to locate existing utilities.

Figure 44: 2/26/2020 9:23:37 AM: Potholing to locate existing utilities.

Figure 45: 2/26/2020 10:41:56 AM: Looking S, potholing to locate existing utilities prior to directional boring.

Figure 46: 2/26/2020 11:09:24 AM: Looking S, trenching for Zone 10.

Figure 47: 2/27/2020 9:18:49 AM: Looking E, preparing to directional bore beneath G Avenue for Zones 3 and 10 header piping.

Figure 48: 2/27/2020 9:37:43 AM: Looking W, preparing to directional bore beneath G Avenue for Zones 3 and 10 header piping.

Figure 49: 2/27/2020 9:48:33 AM: Looking E, directional boring beneath G Avenue for Zones 3 and 10 header piping.

Figure 50: 2/27/2020 11:39:15 AM: Preparing to pull header piping for Zones 3 and 10 through directional bore beneath G Avenue.

Figure 51: 2/27/2020 3:15:14 PM: Looking W, preparing to directional bore beneath swale for Zone 10 header piping.

Figure 52: 2/28/2020 2:07:27 PM: Looking SE, 1- and 2-inch HDPE piping on Zone 10 Manifold #4 cabinet.

Figure 53: 2/28/2020 2:08:09 PM: Looking N, Zone 10 trenching with deployed 1-inch HDPE piping.

Figure 54: 3/2/2020 9:48:22 AM: Looking SE, excavating trench for header piping across swale bisecting the site.

Figure 55: 3/3/2020 9:42:58 AM: Looking W, preparing to deploy 2-inch HDPE header piping.

Figure 56: 3/3/2020 9:48:24 AM: Looking N, deploying 2-inch HDPE header piping.

Figure 57: 3/5/2020 2:13:33 PM: Looking NE, placing backfill in Manifold #1 trailer area.

Figure 58: 3/6/2020 11:08:13 AM: Cutting 1-inch HDPE piping for welding to tee.

Figure 59: 3/6/2020 11:09:04 AM: Welding 1-inch HDPE piping to tee.

Figure 60: 3/6/2020 11:10:00 AM: PVC gluing tee onto AS well.

Figure 61: 3/6/2020 11:52:43 AM: Looking SE, backfilling Zone 3 trenches.

Figure 62: 3/6/2020 11:53:03 AM: Looking W, backfilled and graded Zones 6, 5, and Manifold #1 trailer area.

Figure 63: 3/6/2020 11:53:16 AM: Looking W, backfilled and graded Zones 6, 9, 8, and Manifold #2 trailer area.

Figure 64: 3/13/2020 1:23:46 PM: Welding HDPE to brass transitions onto piping at Manifold #1 pipe rack.

Figure 65: 3/13/2020 2:29:35 PM: Looking W, replacing concrete sidewalk.

Figure 66: 3/13/2020 2:59:20 PM: Looking SE, troweling concrete slab for Zone 10 Manifold #4 cabinet.

Figure 67: 3/13/2020 4:03:34 PM: Looking NE, backfilled and graded Manifold #1 trailer area.

Figure 68: 3/13/2020 4:05:22 PM: Looking SE, finished sidewalk replacement.

Figure 69: 3/13/2020 4:09:13 PM: Looking SE, finished concrete slab for Zone 10 Manifold #4 cabinet and backfilled and graded Zone 3.

Figure 70: 3/17/2020 10:56:58 AM: Preparing Zone 10 Manifold #4 cabinet for placement.

Figure 71: 3/17/2020 11:06:23 AM: Looking SE, placing Zone 10 Manifold #4 cabinet.

Figure 72: 3/18/2020 10:27:56 AM: Looking SW, placed and anchored Zone 3 Manifold #3 cabinet.

Figure 73: 3/18/2020 10:28:07 AM: Looking NW, placed and anchored Zone 3 Manifold #3 cabinet.

Figure 74: 3/20/2020 4:31:05 PM: Looking SW, backfilled and graded site.

Figure 75: 3/20/2020 4:32:08 PM: Looking SE, Manifolds #4 and #3 cabinets.

Figure 76: 3/20/2020 4:33:01 PM: Looking N, backfilled and graded site.

Figure 77: 3/20/2020 4:33:23 PM: Looking E, stockpiled backfill for AS Trailer pipe rack following electrical installation.

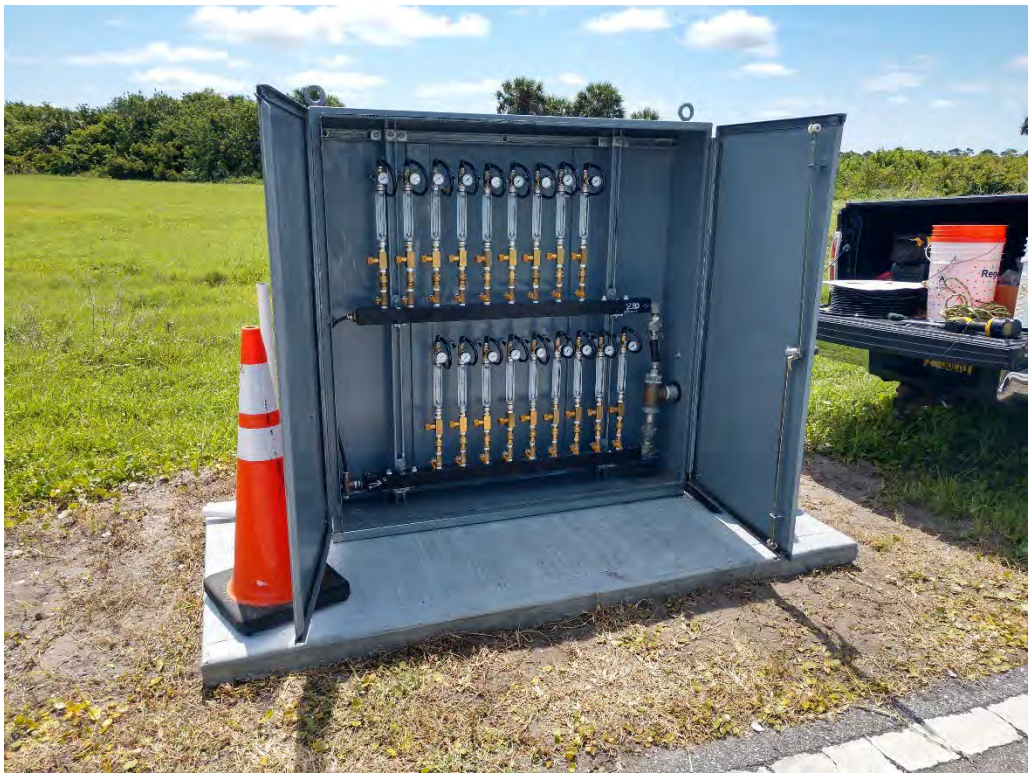


Figure 78: 6/16/2020 11:36:06 AM: Looking E, distribution manifolds within Manifold #4 cabinet.

Figure 79: 6/16/2020 12:07:31 PM: Looking NW, plumbed and anchored Manifold #4 cabinet.

Figure 80: 7/14/2020 10:06:26 AM: Looking SE, excavating for electrical conduit installation.

Figure 81: 7/14/2020 10:25:09 AM: Looking NW, progress of revegetation.

Figure 82: 7/14/2020 10:25:28 AM: Looking NE, progress of revegetation.

Figure 83: 7/15/2020 7:56:57 AM: Looking N, excavating for electrical conduit installation.

Figure 84: 7/15/2020 7:59:12 AM: Looking W, excavating for electrical conduit installation.

Figure 85: 7/15/2020 9:33:14 AM: Looking NW, installing electrical conduit.

Figure 86: 7/15/2020 10:24:53 AM Looking SW, excavating for electrical conduit installation.

Figure 87: 7/15/2020 10:39:17 AM: Looking E, heating conduit for bending.

Figure 88: 7/20/2020 8:00:50 AM: Looking W, rigid conduit for electrical cabinet.

Figure 89: 7/20/2020 9:43:36 AM: Looking W, installing unistrut for electrical cabinet.

Figure 90: 7/20/2020 11:12:41 AM: Looking SE, backfilling electrical trench.

Figure 91: 7/20/2020 11:13:52 AM: Rigid conduit stub-up for AS Trailer connection.

Figure 92: 7/20/2020 11:14:47 AM: Looking W, ground rod vault and unistrut frame for electrical cabinet.

Figure 93: 7/20/2020 11:28:26 AM: Looking S, backfilling electrical trench.

Figure 94: 7/20/2020 12:45:25 PM: Looking N, backfilling electrical trench.

Figure 95: 7/29/2020 9:10:13 AM: Looking W, installing power cable.

Figure 96: 7/29/2020 9:22:47 AM: Power cable routing to breaker.

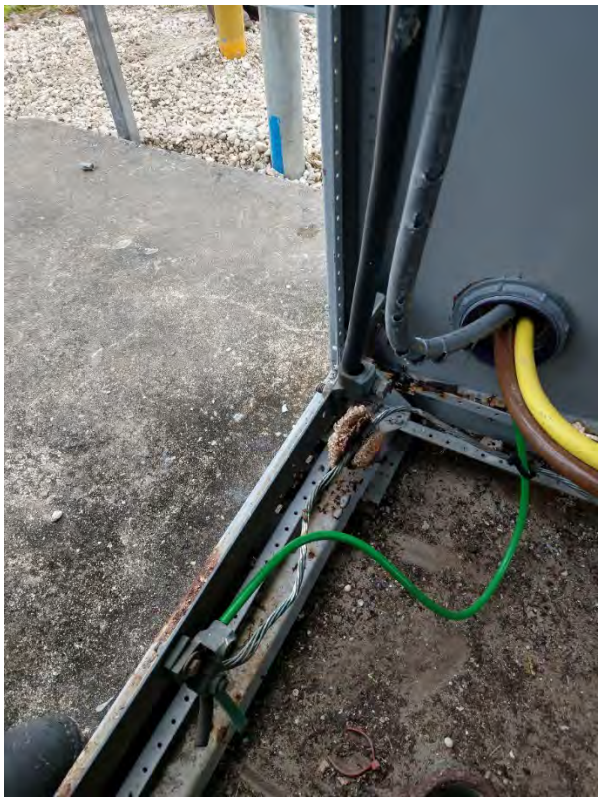


Figure 97: 7/29/2020 9:23:04 AM: Ground connection.

Figure 98: 7/29/2020 9:23:49 AM: Power cable connection to breaker.

Figure 99: 8/12/2020 2:41:12 PM: AS Trailer mobilized to site.

Figure 100: 8/12/2020 2:41:28 PM: AS Trailer mobilized to site.

Figure 101: 8/12/2020 2:41:36 PM: AS Trailer mobilized to site.

Figure 102: 8/12/2020 2:41:51 PM: AS Trailer control panel and transformer.

Figure 103: 8/12/2020 2:41:54 PM: AS Trailer receiver tank.

Figure 104: 8/12/2020 2:41:59 PM: AS Trailer compressor inlet/outlet ductwork.

Figure 105: 8/12/2020 2:42:03 PM: AS Trailer main air distribution manifold.

Figure 106: 8/14/2020 10:03:27 AM: Looking E, installing hurricane anchors.

Figure 107: 8/14/2020 10:57:33 AM: Looking W, installing hurricane anchors.

Figure 108: 8/14/2020 4:06:28 PM: Looking SE, blocked and anchored AS Trailer.

Figure 109: 8/17/2020 7:26:12 AM: Looking W, Electrical conduit stub-up and ground adjacent to AS Trailer.

Figure 110: 8/17/2020 8:52:57 AM: Looking NW, installing flexible conduit for power connection.

Figure 111: 8/17/2020 10:23:51 AM: Looking W, plumbing AS Trailer to pipe rack.

Figure 112: 8/17/2020 10:53:26 AM: Looking E, pulling cable through conduit.

Figure 113: 8/17/2020 10:56:17 AM: Looking NW, pulling cable through conduit.

Figure 114: 8/17/2020 10:57:53 AM: Looking NW, pulling cable through conduit and plumbing AS Trailer to pipe rack.

Figure 115: 8/17/2020 10:59:17 AM: Looking SW, pulling cable through conduit.

Figure 116: 8/17/2020 11:26:24 AM: Looking W, feeding cable through flexible conduit.

Figure 117: 8/17/2020 2:02:34 PM: Looking W, installing meter/disconnect cabinet.

Figure 118: 9/4/2020 11:28:09 AM: Looking W, placing sod.

Figure 119: 9/4/2020 11:57:00 AM: Reconfigured compressor outlet shroud.

Figure 120: 9/4/2020 12:00:51 PM: Looking SW, AS Trailer orientation.

Figure 121: 9/4/2020 12:03:09 PM: Looking W, AS Trailer orientation.

Figure 122: 9/4/2020 12:03:43 PM: Looking E, AS Trailer orientation.

APPENDIX B

AIR SPARGE SYSTEM INSTALLATION PERMITS AND FORMS

AVOID VERBAL ORDERS

DATE: November 7, 2019
APPROVAL VALID UNTIL: November 7, 2021

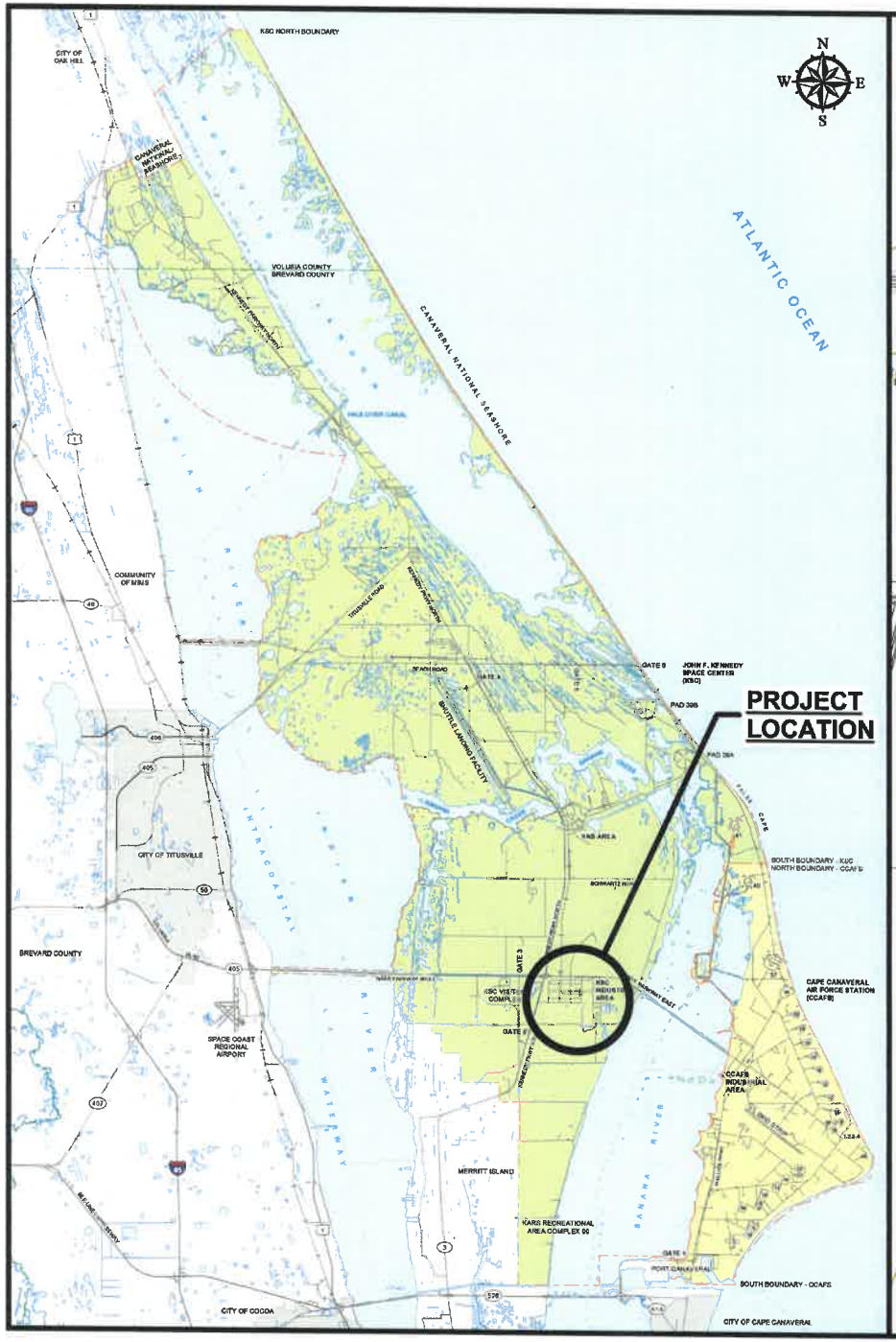
TO:	**Ryan O'meara, SIE20**
TITLE:	**Air Sparging Treatment System and Monitoring Wells at Hypergol Maintenance Facility North**
SITE PLAN:	19-0077 (M7-10026096)
SUBJECT:	**Site Plan Approval**

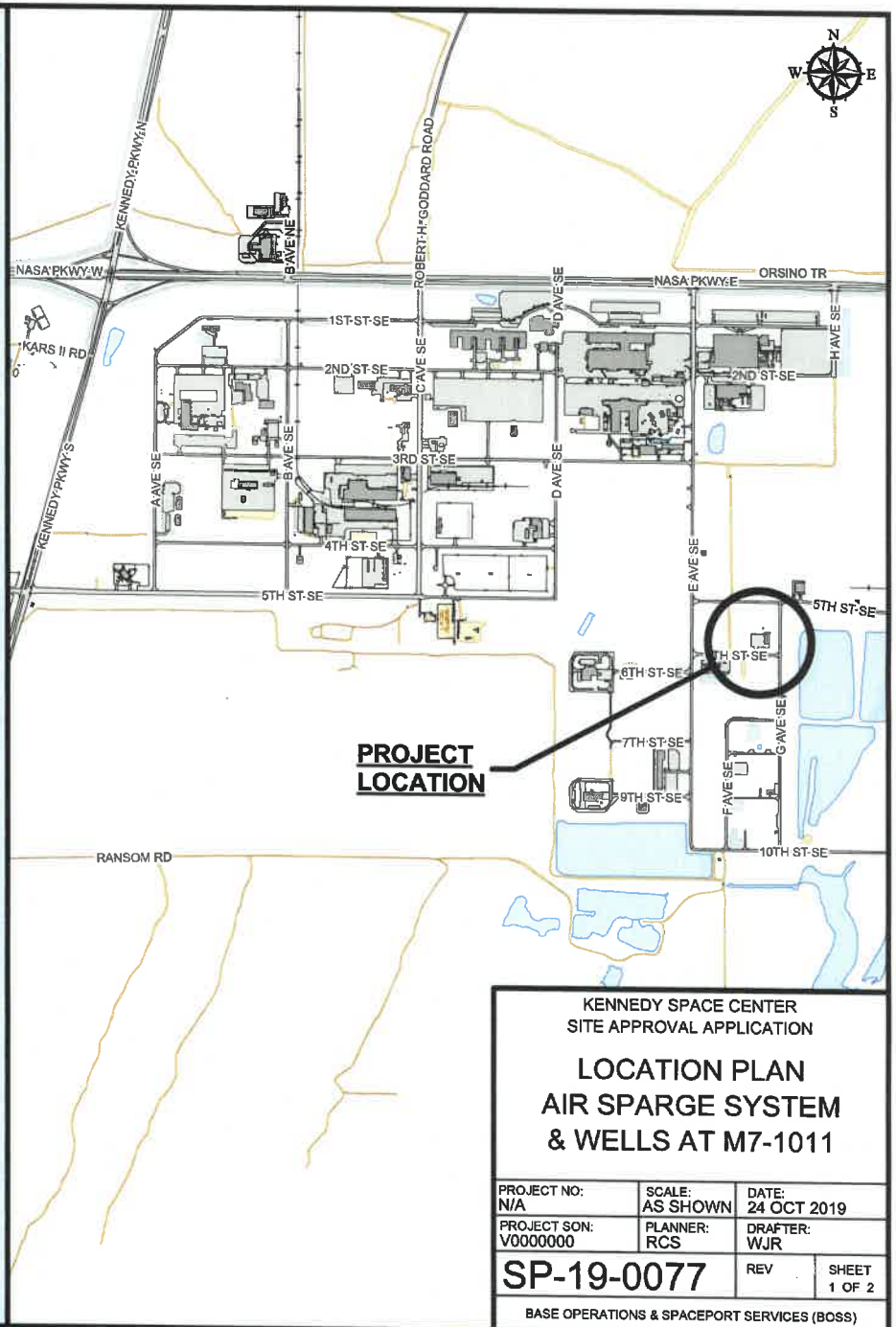
This letter indicates that the proposed site plan has met with the approval of the Master Planning Office. As an approved site plan, it will remain valid for a period of ***TWO (2) years***. If the project has not been initiated within this two-year period, this approval will be rescinded and you must re-submit your plan for review. Within this approval package, you will find a copy of the maps, site plan, and comment log. The comment log contains comments and concerns regarding this site plan. Please note that your final plan must comply with all conditions and restrictions contained within the approval package. This letter signifies approval by the Master Planning Office only and does not entitle you to funds of facilities that may be necessary to fulfill this project. It is your responsibility to obtain the necessary funds and materials, as well as a Utility Locate/Excavation Permit to complete this project.

Conditions/Restrictions must be met:
- Beware of GN2 pipeline crossing the area. Obtain an Excavation Permit so there will be a utility locator to identify entire pipeline crossing route. Do not place wells within 15 feet of the pipeline centerline.

Gail L Fazio

FROM: Gail Fazio
ORGANIZATION: SI-C2
EXT: 1-4610



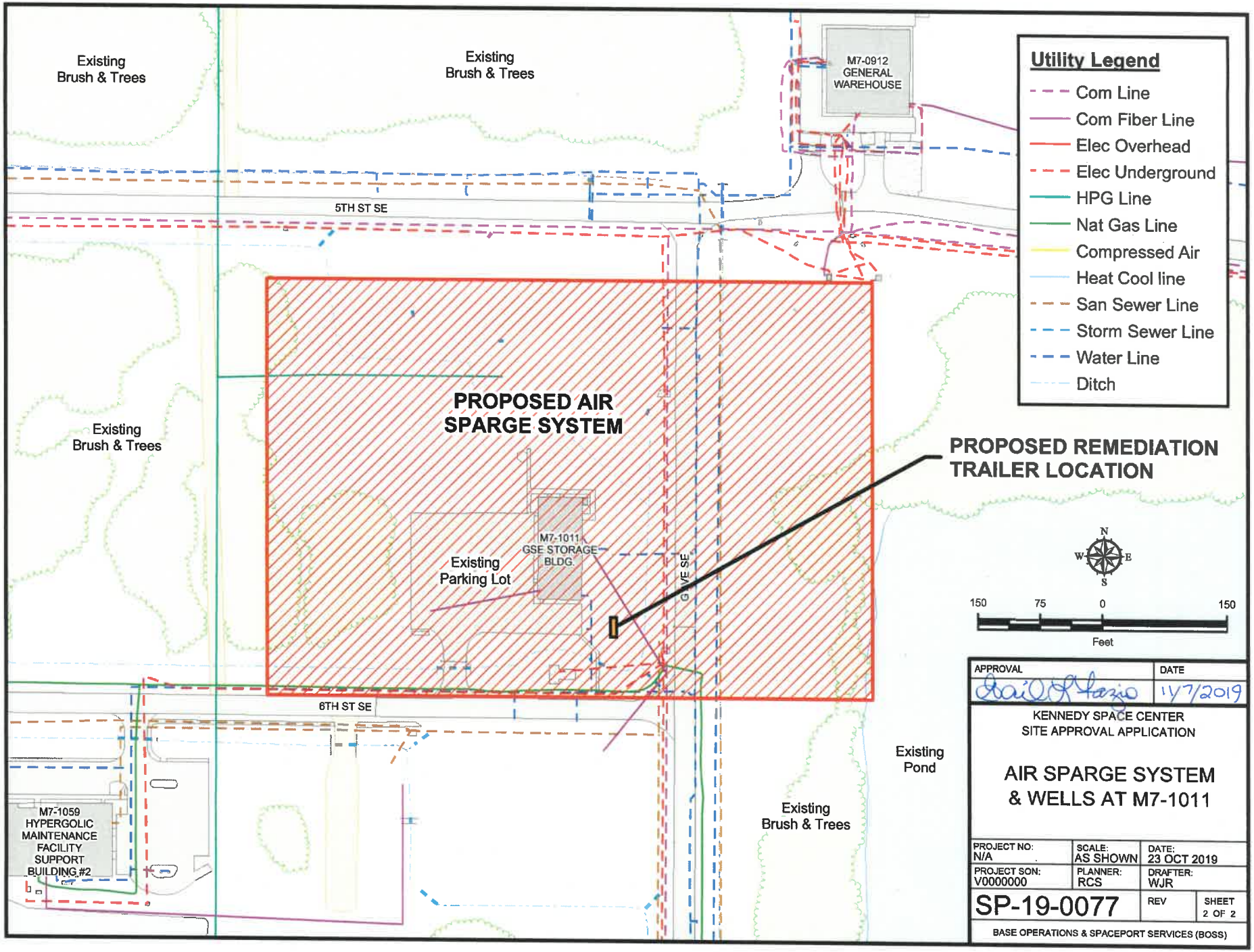


KENNEDY SPACE CENTER
SITE APPROVAL APPLICATION

LOCATION PLAN
AIR SPARGE SYSTEM
& WELLS AT M7-1011

PROJECT NO:	SCALE:	DATE:
N/A	AS SHOWN	24 OCT 2019
PROJECT SON:	PLANNER:	DRAFTER:
V0000000	RCS	WJR
SP-19-0077	REV	SHEET 1 OF 2

BASE OPERATIONS & SPACEPORT SERVICES (BOSS)



APPROVAL	DATE
David A Lanzo	11/7/2019

KENNEDY SPACE CENTER
SITE APPROVAL APPLICATION

AIR SPARGE SYSTEM & WELLS AT M7-1011

PROJECT NO:	SCALE:	DATE:
N/A	AS SHOWN	23 OCT 2019
PROJECT SON:	PLANNER:	DRAFTER:
V0000000	RCS	WJR
SP-19-0077	REV	SHEET 2 OF 2

BASE OPERATIONS & SPACEPORT SERVICES (BOSS)

Avoid Verbal Orders

TO: SI-E2/Ryan O'Meara **DATE: 08/26/2019**

FROM: SI-E3/Environmental Management Branch

SUBJECT: KSC Record of Environmental Consideration (REC) **REC #: 10773**

1. PROJECT INFORMATION

Project Title: Interim Measure Activities at the Hypergol Maintenance Facility North

Project Lead: Ryan O'Meara, SI-E2, 321-861-7719 **Project No.:** HMF_IM_8-26-2019

Project Description:

Activities at the site include monitoring well (MW) and air sparge (AS) system installation to monitor and remediate groundwater at Hypergol Maintenance Facility North. The attached Figures, A-1 and A-2 (attached to checklist) show the site location and facility layout, respectively. MW installation will be completed to a maximum depth of 60 feet below land surface (bls) in the locations identified on the attached monitoring well location map. Installation of the AS system will involve trenching, infrastructure installation (AS trailer, compressed air piping and electrical), and drilling in the general locations shown on the attached Proposed Air Sparge Piping Layout. Trenching will be conducted to a maximum depth of 3.0 feet below land surface (bls) and drilling of AS wells will occur to a max depth of 60 feet bls. The additional monitoring wells will support the existing well schematic in tracking remediation progress. The AS system will remain in-place until the remediation goals are achieved.

EPB Reviewer: LPH **Facility No.:** HMF North, M7-1011, M7-0961

2. NEPA DETERMINATIONS

- ☑ **a. Categorical Exclusions per 14 CFR Part 1216.304(d)**
- ☐ **b. Environmental Assessment (EA) Required**
- ☐ **c. Environmental Impact Statement (EIS) Required**
- ☐ **d. Existing FONSI or ROD**
- ☐ **e. Centerwide EIS**
- ☐ **f. AF Project on KSC/813**
- ☐ **g. NASA Project on CCAFS/813**

3. ENVIRONMENTAL REQUIREMENTS

a. Non-Permit Requirements	☑ **YES**	☐ **NO**
b. Permit Requirements	☑ **YES**	☐ **NO**

2.a.1. CATEGORICAL EXCLUSION (CATEX): This project is categorically excluded (CATEX) from further NEPA review as defined in 14 CFR 1216.304(d)(2)(i) Routine maintenance, minor construction or rehabilitation, minor demolition, minor modification, minor repair, and continuing or altered operations at, or of, existing NASA or NASA-funded or -approved facilities and equipment, such as buildings, roads, grounds, utilities, communication systems, and ground support systems, such as space tracking and data systems. For additional information, please contact Don Dankert of the NASA Environmental Management Branch (SI-E3, 321-861-1196).

3.a.1. SOLID WASTE MANAGEMENT UNIT (SWMU): This project includes work within the boundary of SWMU #90 HMF North (M7-0961) by the KSC Remediation Group to monitor and remediate groundwater contamination beneath and around former facility M7-0961. Handle soils and groundwater in accordance with site work plan. Utilize personal protective equipment (PPE) as required by the Health and Safety Plan. Contact the Remediation Project Manager (RPM) Ryan O'Meara (SI-E2, 861-7719) for guidance regarding handling of soil and groundwater at this location.

3.a.2. MANHOLE DEWATERING POTENTIAL RELEASE LOCATION (PRL): This project includes work within the boundary of PRL 204, Manhole Dewatering Operations. There is an institutional control being implemented on the soil within a 25 ft radius of manholes on KSC. The soil adjacent to telecommunications and electrical manholes is contaminated with barium, copper, lead and polynuclear aromatic hydrocarbons. The maximum concentrations found

are barium at 410 mg/kg, copper at 440 mg/kg, lead at 4,900 mg/kg and B(a)P Equivalent at 35.4 mg/kg. If handling the soil (excavation or any other activity in which the soil is disturbed and handled by workers) within 25 ft of a manhole, contact your company's Safety and Health Office for recommendations on appropriate personal protective equipment (PPE). All soil being disturbed within 25 ft of the manhole being dewatered must remain within that 25 ft radius. If this is not possible the soil must be properly disposed. All efforts should be made to cause the dewatered effluent to be discharged in a sheet flow along grade and not be allowed to scour the soil at the discharge point. Erosion protection will be provided as needed and applicable to prevent the disturbance/erosion of soil due to construction activities and dewatering near manholes. For more information, or if soil must be disturbed, please contact Mike Deliz (SI-E2, 867-6971) to discuss control/disposal options.

3.a.3. HAZARDOUS/NON-HAZARDOUS WASTE: All hazardous and non-hazardous wastes generated during the interim measure must be properly containerized, stored, labeled, manifested, shipped, and disposed of in full regulatory compliance. Hazardous wastes generated by this activity must be manifested, shipped, and disposed of under either the remediation contractor's or NASA's Environmental Protection Agency (EPA) identification number. The contractor shall maintain copies of waste management records and manifests onsite and make them available for review by NASA upon request.

If wastes are managed, controlled and disposed of using the NASA EPA identification number, the KSC Waste Management requirements outlined in KNPR 8500.1 must be followed. A Process Waste Questionnaire (PWQ), KSC Form 26-551 along with any supporting documentation (MSDS, product formulation, lab analyses) must be submitted to the KEMCON Waste Management Office for each waste stream generated. That office will then generate a Technical Response Package (TRP) which will give direction on proper handling, storage, and disposal of the waste stream. Please contact KEMCON Waste Management Services at 867-8640 if assistance is required.

The remediation contractor is responsible for any spills, releases, or other environmental contamination that occurs as a result of the proposed activities. A KSC Pollution Incident Report (PIR) Form (KSC Form 21-555) must be completed and submitted to the NASA Environmental Assurance Branch within three (3) calendar days of the incident.

3.a.4. THREATENED AND ENDANGERED SPECIES: This project has the potential to affect protected and/or threatened and endangered species; which may include the Eastern indigo snake, and gopher tortoise. Measures must be taken to minimize impacts to their habitat. A biological survey will be required to identify potential impacts prior to disturbances. If vegetation clearing or any disturbance of vegetated areas is necessary, a biological survey will be required to identify potential impacts to habitat and wetlands prior to disturbances. Prior to the biological survey, the vegetation to be trimmed must be clearly marked with lines, flags or stakes showing limits of proposed clearing. To schedule a biological survey, contact Becky Bolt (IMSS-200, 867-7330) 2 weeks prior to site work.

3.a.5. EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs): Precautions must be made to eliminate or reduce to the greatest extent possible any discharge of sediments outside established project boundaries. This can be accomplished by initiating proactive erosion control BMPs. Installation and maintenance of appropriate erosion/sediment control devices (such as wattles, turbidity screens, silt fences, inlet protectors, floating turbidity booms, etc.) must be completed prior to initial land disturbance where the possibility of sediment discharge could impact surrounding stormwater conveyances and other surface waters. The BMPs must be maintained so they remain functional until such time that the newly exposed soils are stabilized with sod or natural vegetation.

3.a.6. CONCRETE WASHOUT: Water used to rinse out concrete trucks and other equipment used for concrete work must not be allowed to discharge to surface waters. Concrete washout water shall be diverted to a settling pond where suspended material will settle out and the water can percolate into the ground. Contact Doug Durham (SI-E2,

867-8429) with any question on this requirement. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes. After drying/settling, the residue may be disposed of at the Diverted Aggregate Reclamation and Collection Yard (DARCY); and the ground restored. Clean, unstained, unpainted concrete residue is accepted at the DARCY without any sampling and analysis. Contact Zach Hall (SI-E2, 867-5178) with any questions on this requirement.

3.a.7. GREEN PURCHASING/SUSTAINABLE ACQUISITION: Federal agencies and their contractors are required to purchase products made from recycled or recovered materials and other environmentally preferable products whenever possible. The Green Compilation Tool found at https://sftool.gov/greenprocurement provides information and useful links and tools to identify applicable green/sustainable acquisition requirements for products and services (Ref. FAR subpart 23.1 and NPR 8530.1).A Request for Waiver Form (KSC 28-825 NS) must be submitted when a product or service meets the green/sustainable requirements but is not procured. Please contact Annie Williams (SI-E3, 867-8720) with any questions on this requirement.

3.b.1. EXCAVATION PERMIT: A KSC Excavation Permit will be required for any digging proposed by this project. Please contact the Utility Locate/Excavation Permit Request Customer Helpline at 867-2406 or go to website at http://epr.ksc.nasa.gov/Home/ for an underground utility scan and dig permit. NOTE: If a trench or pit is to be left open all day or overnight, the trench/pit must be checked for trapped animals at the beginning and end of each work shift. If an animal is observed trapped, contact Becky Bolt (IMSS-200, 867-7330) or the Duty Office (861-5050, email KSC-ISC-DutyOffice@mail.nasa.gov) to arrange removal/release. Do not handle the animal(s).

3.b.2. FDEP NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION ACTIVITY PERMIT: This project may require an NPDES Phase II construction permit. If 1 acre or more of land will be disturbed, a NPDES Construction Activity Permit from the Florida Department of Environmental Protection (FDEP) is required under F.A.C. 62-621.300(4), Notice of Intent to Use Generic Permit for Stormwater Discharge from Large (If over 5 Acres) and Small (1 Acre To 5 Acres) Construction Activities. http://www.dep.state.fl.us/water/stormwater/npdes/forms/cgp_noi.pdf.

This includes construction activity which will disturb less than one acre of land area that is part of a larger common plan of development that will ultimately disturb equal to or greater than one acre of land. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site. A condition of this permit is to provide a Stormwater Pollution Prevention Plan (SWPPP) detailing erosion and turbidity controls for the site. Information on completing the permit application and development of the SWPPP can be obtained by contacting Doug Durham (SI-E2, 867-8429).

3.b.3. ENVIRONMENTAL RESOURCE PERMIT (ERP) and ACOE Permit: Wetland permits from the St. Johns River Water Management District (SJRWMD) and US Army Corp of Engineers (ACOE) may be required for the proposed development of Roberts Road. The project proponent shall prepare all permit applications and pay any application fees. Application forms with supporting material such as maps and engineering drawings must be submitted to the EAB (Doug Durham, SI-E2, 867-8429) for review and NASA signature. An electronic version in PDF format should also be provided. No work can be performed until the permit process is completed.

3.b.4. AIR EMISSIONS: NASA/KSC has Remedial Activities listed on the Title V Air Permit as an insignificant activity. The proposed groundwater remediation system would be considered insignificant if the Remediation system/unit/activity would not emit or have the potential to emit (PTE):

a. 500 pounds per year or more of lead and lead components expressed as lead;

b. 1,000 pounds per year or more of any hazardous air pollutant;

c. 2,500 pounds per year or more of total hazardous air pollutants; or

d. 5.0 tons per year or more of any other regulated pollutant, Per Rule 62-213.430(6), F.A.C.

If the above criteria cannot be met, a construction permit would be required. Contact the Environmental Assurance Branch (Zach Hall, SI-E2, 867-5178) if you have any questions.

Avoid Verbal Orders

TO: SI-E2/Ryan O'Meara **DATE: 08/26/2019**

FROM: SI-E3/Environmental Management Branch

SUBJECT: KSC Record of Environmental Consideration (REC) **REC #: 10773**

3.b.5. WATER WELL: Installation or abandonment of a water well requires use of a licensed contractor, a KSC dig permit, and registration of the well with St. Johns River Water Management District (SJRWMD). Contact Doug Durham (SI-E2, 867-8429) for details.

No other environmental issues were identified based upon the information provided in the KSC Environmental Checklist. This Record of Environmental Consideration (REC) does not relinquish the project lead from obtaining and complying with any other internal NASA permits or directives necessary to ensure all organizations potentially impacted by this project are notified and concur with the proposed project.

Due to potential changes in regulations, permit requirements and environmental conditions, statements in this REC are valid for 6 months, and subject to review after this period. It is the responsibility of the project lead to submit current project information for a REC update prior to project commencement if REC is older than 6 months; and also to notify the Environmental Management Branch (SI-E3) if the scope of the project changes at any time after the REC is issued.

R. O'Meara/SI-E2
cc:
C. Hook/Tetra Tech, Inc.
A. Murphy/Tetra Tech, Inc.
M. Jonnet/Tetra Tech, Inc.
B. Bolt/IMSS-200

4. Upon evaluation of the subject project, the above determinations have been made and identified. Contact the Environmental Management Branch (SI-E3) at 861-1196 for re-evaluation should there be any modifications to the scope of work.

James Brooks

08/26/2019 14:45

Date

From: irth_host@callsunshine.com
To: Murphy, Alex
Subject: SSOCOF CONFRM 2019/09/09 #00000 252909039-000 NORM NEW
Date: Monday, September 09, 2019 1:42:09 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

CONFRM 00000 CALL SUNSHINE 09/09/19 13:41:31ET 252909039-000 GRID
Ticket : 252909039 Rev:000 Taken: 09/09/19 13:16ET

State: FL Cnty: BREVARD GeoPlace: MERRITT ISLAND
CallerPlace: MERRITT ISLAND
Subdivision:

Address :
Street : 6TH ST SE
Cross 1 : AVENUE E
Within 1/4 mile: Y

Locat: STARTING AT THE INTER OF NASA PKWY E AND KENNEDY PKWY N, TRAVEL APPROX 1.25 MI E ALONG NASA PKWY E TO AVENUE E ON THE S SIDE OF THE RD. FROM HERE TRAVEL APPROX 0.80 MI S ALONG AVENUE E FROM NASA PKWY E TO 6TH ST SE. FROM HERE TRAVEL APPROX 775 FT E ALONG 6TH ST SE FROM AVENUE E. FROM HERE LOCATE EVERYTHING WITHIN A 500 FT RADIUS FROM THE CENTER LINE OF THE RD TO INCLUDE THE VACANT LAND ON BOTH SIDES OF 6TH ST SE AND THE RDWY OF AVENUE G AND THE VACANT LAND ON THE E SIDE OF AVENUE G WITHIN THIS 500 FT RADIUS. THIS IS TICKET 1 OF 2 COVERING THE THE RDWY AND THE VACANT LAND ON BOTH SIDES OF THE RD OF 6TH ST SE WITHIN THE 500 FT RADIUS.
:
Remarks : *** LOOKUP BY MANUAL ***
:
Grids : 2830A8038B 2830A8038C 2830B8038B 2830B8038C

Work date: 09/16/19 Time: 08:00ET Hrs notc: 114 Category: 3 Duration: 01 YR
Due Date : 09/11/19 Time: 23:59ET Exp Date : 10/09/19 Time: 23:59ET
Work type: ENVIRONMENTAL SAMPLING Boring: Y White-lined: N
Ug/Oh/Both: U Machinery: Y Depth: 65 FT Permits: N N/A
Done for : NASA KENNEDY SPACE CENTER

Company : TETRA TECH INC Type: CONT
Co addr : 11 RIVERSIDE DR
Co addr2: STE 204
City : COCOA State: FL Zip: 32922
Caller : ALEX MURPHY Phone: 321-292-0842
Contact : ALEX MURPHY Phone: 321-292-0842
BestTime: ANYTIME
Email : ALEX.MURPHY@TETRATECH.COM

Submitted: 09/09/19 13:16ET Oper: ART
Mbrs : CTYGS2 SB2186 SBF02

From: irth_host@callsunshine.com
To: Murphy, Alex
Subject: SSOCOF CONFRM 2019/09/09 #00000 252909111-000 NORM NEW
Date: Monday, September 09, 2019 1:42:11 PM

CAUTION: This email originated from an external sender. Verify the source before opening links or attachments.

CONFRM 00000 CALL SUNSHINE 09/09/19 13:41:35ET 252909111-000 GRID
Ticket : 252909111 Rev:000 Taken: 09/09/19 13:37ET

State: FL Cnty: BREVARD GeoPlace: MERRITT ISLAND
CallerPlace: MERRITT ISLAND
Subdivision:

Address :
Street : AVENUE G
Cross 1 : 6TH ST SE
Within 1/4 mile: Y

Locat: STARTING AT THE INTER OF NASA PKWY E AND KENNEDY PKWY N, TRAVEL APPROX 1.25 MI E ALONG NASA PKWY E TO AVENUE E ON THE S SIDE OF THE RD. FROM HERE TRAVEL APPROX 0.80 MI S ALONG AVENUE E FROM NASA PKWY E TO 6TH ST SE. FROM HERE TRAVEL APPROX 775 FT E ALONG 6TH ST SE FROM AVENUE E. FROM HERE LOCATE EVERYTHING WITHIN A 500 FT RADIUS FROM THE CENTER LINE OF THE RD TO INCLUDE THE VACANT LAND ON BOTH SIDES OF 6TH ST SE AND THE RDWY OF AVENUE G AND THE VACANT LAND ON THE E SIDE OF AVENUE G WITHIN THIS 500 FT RADIUS. THIS IS TICKET 2 OF 2 COVERING THE THE RDWY AND THE VACANT LAND ON THE E SIDE OF AVENUE G WITHIN THE 500 FT RADIUS.
:
Remarks : *** LOOKUP BY MANUAL ***
:
Grids : 2830A8038B 2830A8038C 2830B8038B 2830B8038C

Work date: 09/11/19 Time: 23:59ET Hrs notc: 058 Category: 3 Duration: 01 YR
Due Date : 09/11/19 Time: 23:59ET Exp Date : 10/09/19 Time: 23:59ET
Work type: ENVIRONMENTAL SAMPLING Boring: Y White-lined: N
Ug/Oh/Both: U Machinery: Y Depth: 65 FT Permits: N N/A
Done for : NASA KENNEDY SPACE CENTER

Company : TETRA TECH INC Type: CONT
Co addr : 11 RIVERSIDE DR
Co addr2: STE 204
City : COCOA State: FL Zip: 32922
Caller : ALEX MURPHY Phone: 321-292-0842
Contact : ALEX MURPHY Phone: 321-292-0842
BestTime: ANYTIME
Email : ALEX.MURPHY@TETRATECH.COM

Submitted: 09/09/19 13:37ET Oper: ART
Mbrs : CTYGS2 SB2186 SBF02

WELL COMPLETION LOG

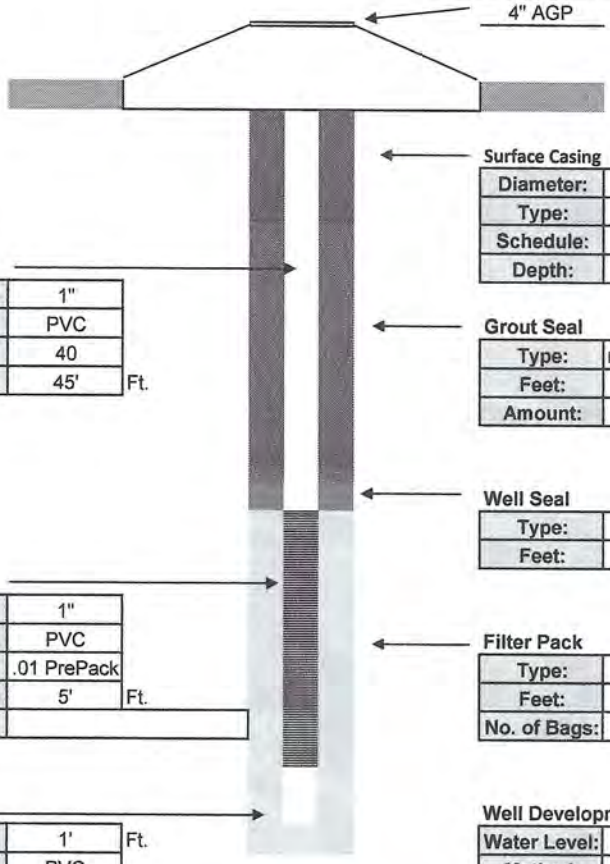
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 28
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	50	5'	45'	2	3 / 50 lbs	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		42'	← Feet →	6'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	45' Ft.

Grout Seal

Type:	I / II PORTLAND	
Feet:	Feet	
Amount:	3 / 50 lbs	Bags

Well Seal

Type:	0
Feet:	0

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	30/65
Feet:	2'
No. of Bags:	20/30

Sump

Length:	1' Ft.
Type:	PVC

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/14/2020
Driller:	Jared Link
Lead Hand:	Thomas Watson
3rd Man:	
Drill Rig:	SR 3

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53797 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 1 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 1/14/2020 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 50 ft. Cased Depth 45 ft. Open Hole From: NA to NA ft. Screen:From 45 to 50 ft. Slot Size .01 PrePack

*** ABANDONMENT** _____ **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 41.0 ft. # of bags 1.00 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 41.0 ft. To 45 ft. # of bags 1.00 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : Dave Longino

I certify that the information in this report is accurate & true.

* Permit No. 53797

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	35	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From	35	To	44	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand & Shell
From	44	To	50	Color	Green	Grain Size (F, M, C)	N	Material	Silty Sand with Clay
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 28 28°30'55.92" N 80°38'29.20" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

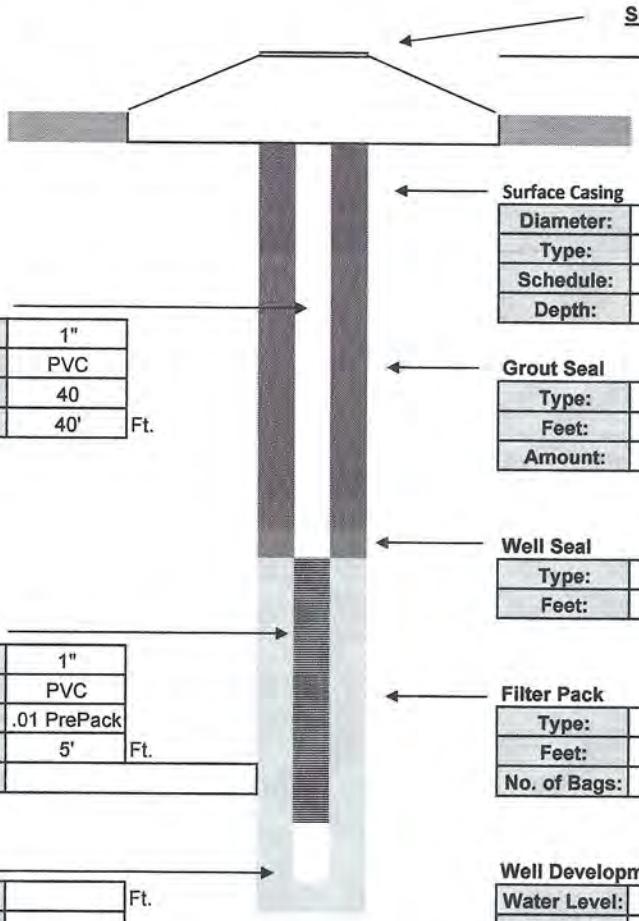
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 40
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	5'	40'	1	2 / 50 lbs.	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		36'	← Feet →	7'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	40' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	36'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/24/2020
Driller:	Dave Longino
Lead Hand:	Gama Rivera
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

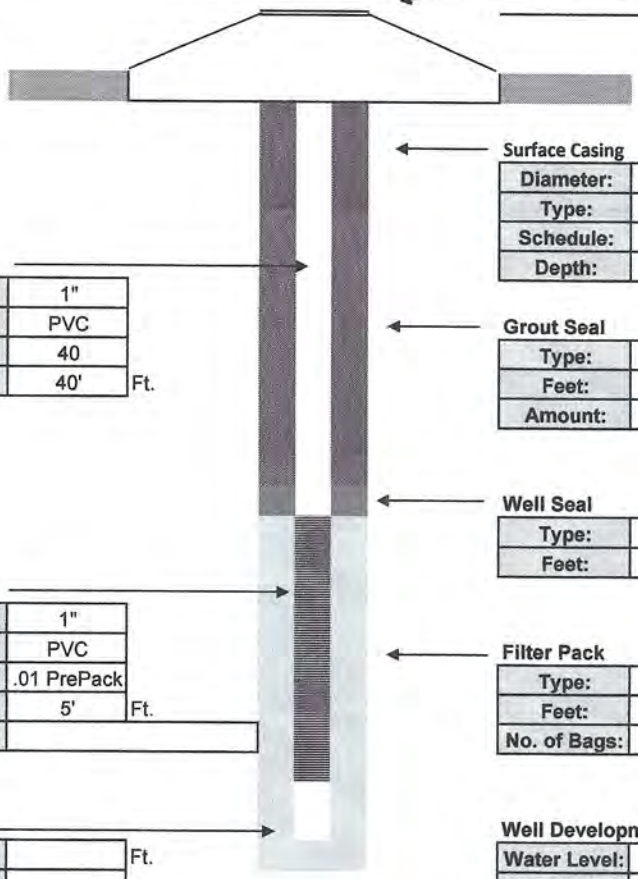
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 27
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	5'	40'	1	2 / 50 lbs.	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		36'	← Feet →	7'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	40' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	36'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/24/2020
Driller:	Jared Link
Lead Hand:	Thomas Watson
3rd Man:	NA
Drill Rig:	SR 3

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53799 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 2 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 1/24/2020 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 45 ft. Cased Depth 40 ft. Open Hole From: NA to NA ft. Screen:From 40 to 45 ft. Slot Size .01 PrePack

*** ABANDONMENT** _____ **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 36.0 ft. # of bags 1.00 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 36.0 ft. To 40 ft. # of bags 1.00 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : Dave Longino / Jared Link

I certify that the information in this report is accurate & true.

* Permit No. 53799

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
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9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	35	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From	35	To	44	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand & Shell
From	44	To	45	Color	Green	Grain Size (F, M, C)	N	Material	Silty Sand with Clay
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO	1219010	
MW 27	28°30'55.86" N	80°38'29.23" W
MW 40	28°30'55.53" N	80°38'26.11" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

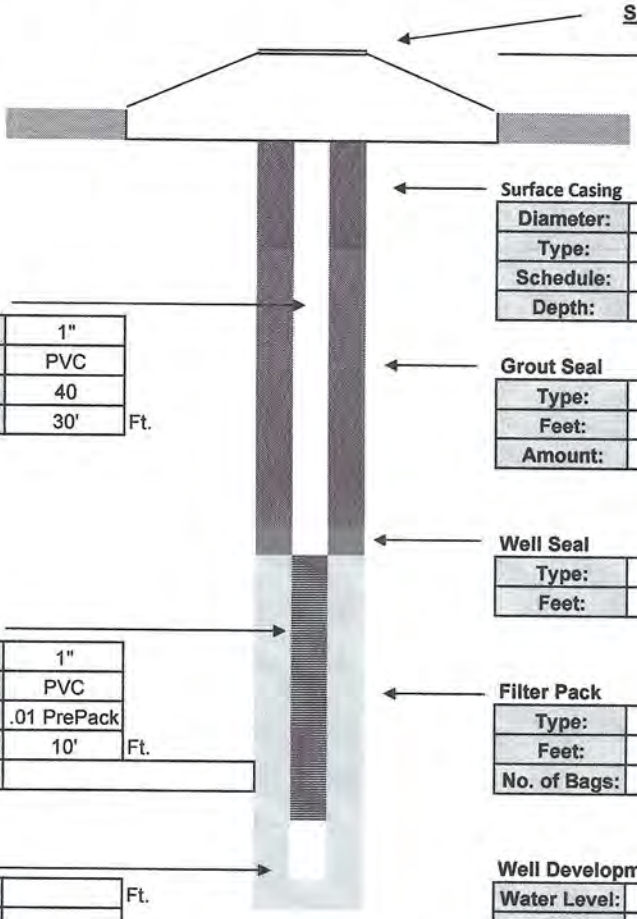
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 39
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	40'	10'	30'	1	3 / 50 lbs.	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		26'	← Feet →	12'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	30' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	26'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/24/2020
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53799 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 1 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 1/24/2020 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe)

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 40 ft. Cased Depth 30 ft. Open Hole From: NA to NA ft. Screen:From 30 to 40 ft. Slot Size .01 PrePack

*** ABANDONMENT** OTHER (Explain) _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 26.0 ft. # of bags 1.00 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 26.0 ft. To 30 ft. # of bags 1.00 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : Dave Longino

I certify that the information in this report is accurate & true.

* Permit No. 53799

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
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152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
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9225 CR 49
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PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	35	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From	35	To	40	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand & Shell
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 39 28°30'55.43" N 80°38'26.11" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

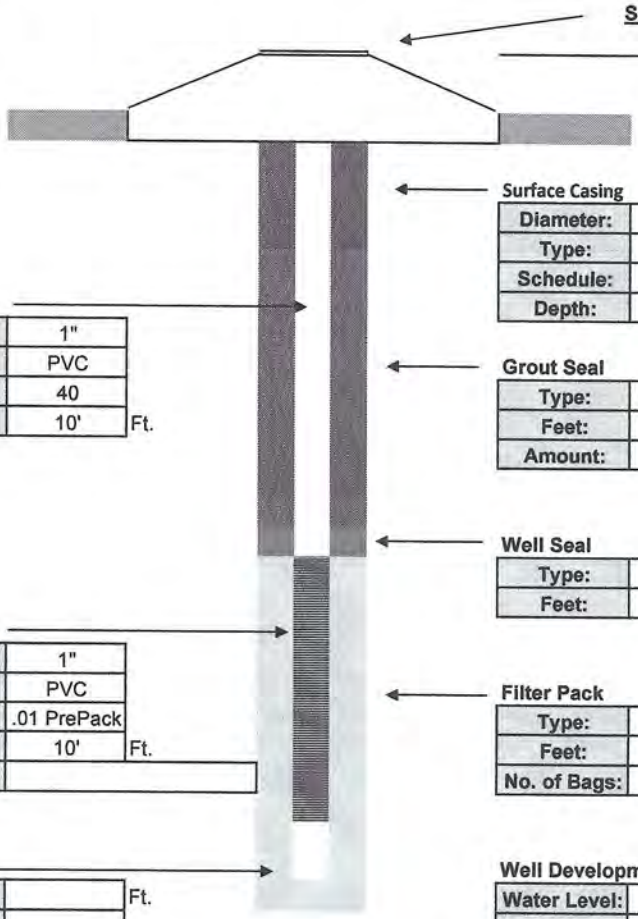
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 46
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	20'	10'	10'	0.5	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		6'	← Feet →	12'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	10' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	6'
Amount:	0.5 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/24/2020
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

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☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53798 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 1 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 1/24/2020 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
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_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 20 ft. Cased Depth 10 ft. Open Hole From: NA to NA ft. Screen:From 10 to 20 ft. Slot Size .01 PrePack

*** ABANDONMENT** **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 6 ft. # of bags 0.50 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 6 ft. To 10 ft. # of bags 0.50 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : David Longino

I certify that the information in this report is accurate & true.

* Permit No. 53798

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9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	ft. To	3	ft. Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	ft. To	10	ft. Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	ft. To	20	ft. Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 46 28°30'55.23" N 80°38'24.53" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

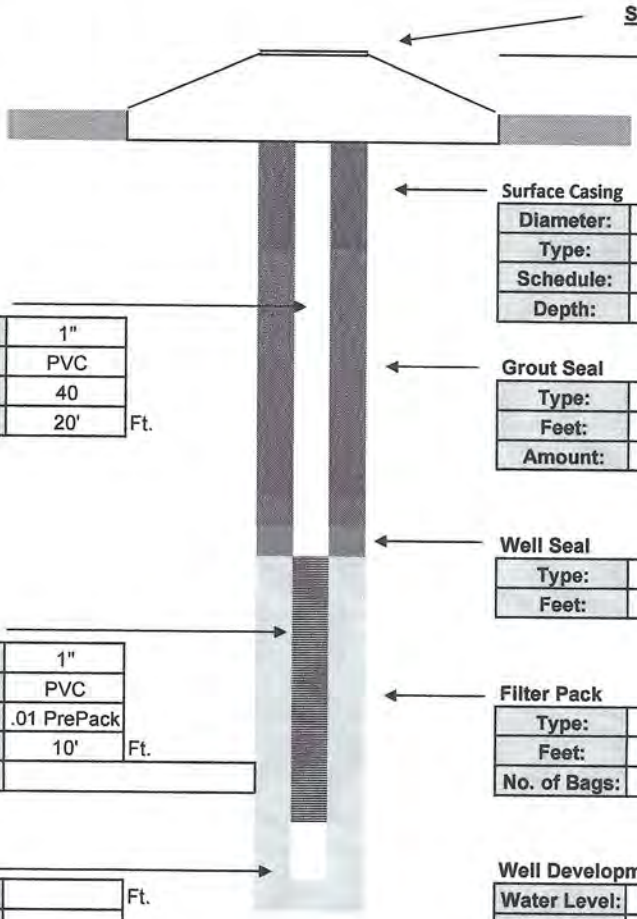
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 47
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	30'	10'	20'	1	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		16'	← Feet →	12'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	20' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	16'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/24/2020
Driller:	Dave Longino
Lead Hand:	Gama Rivera
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53798 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 1 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 1/24/2020 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 30 ft. Cased Depth 20 ft. Open Hole From: NA to NA ft. Screen:From 20 to 30 ft. Slot Size .01 PrePack

*** ABANDONMENT** OTHER (Explain) _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 16 ft. # of bags 1.00 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 16 ft. To 20 ft. # of bags 0.50 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : David Longino

I certify that the information in this report is accurate & true.

* Permit No. 53798

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
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9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	30	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 47 28°30'55.23" N 80°38'24.53" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

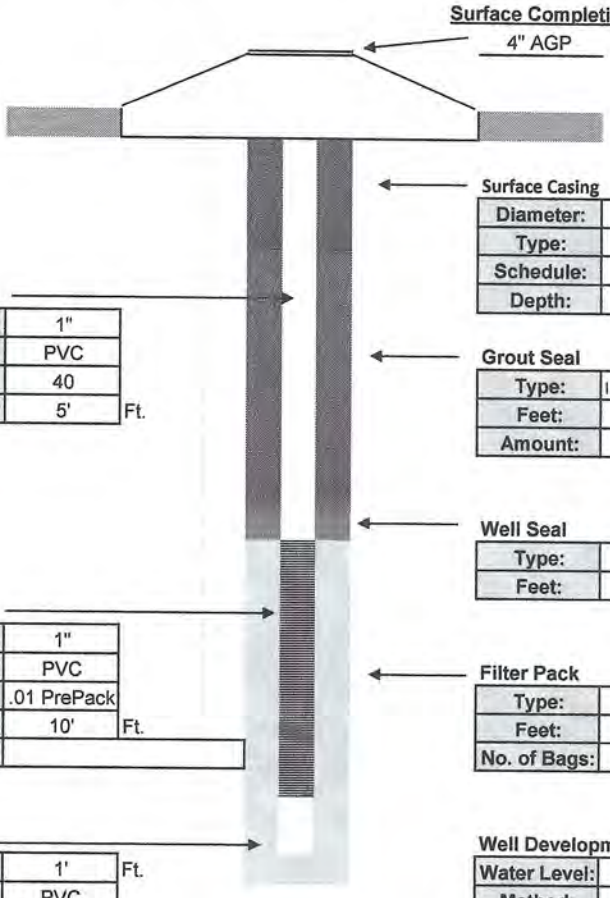
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 37
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	15'	10'	5'	0.5	3 / 50 lbs	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		3'	← Feet →	10'	2'



Surface Casing		Intermediate Casing	
Diameter:		Diameter:	
Type:		Type:	
Schedule:		Schedule:	
Depth:		Depth:	

Well Casing	
Diameter:	1"
Type:	PVC
Schedule:	40
Length:	5' Ft.

Grout Seal		
Type:	I / II PORTLAND	
Feet:	Feet	
Amount:	3 / 50 lbs	Bags

Well Seal	
Type:	0
Feet:	0

Well Screen	
Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack	
Type:	30/65
Feet:	2'
No. of Bags:	20/30

Sump	
Length:	1' Ft.
Type:	PVC

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	1/24/2020
Driller:	Dave Longino
Lead Hand:	Gama Rivera
3rd Man:	
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53798 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 1 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 1/24/2020 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 15 ft. Cased Depth 5 ft. Open Hole From: NA to NA ft. Screen:From 5 to 15 ft. Slot Size .01 PrePack

*** ABANDONMENT** _____ **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 3 ft. # of bags 0.50 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 3 ft. To 5 ft. # of bags 0.50 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : David Longino

I certify that the information in this report is accurate & true.

* Permit No. 53798

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2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
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NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
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PHONE: (850) 539-5999
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P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
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9225 CR 49
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DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	15	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 37 28°30'54.65" N 80°38'23.47" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 38
Method Used: Sonic
Borehole Diaz. 4"

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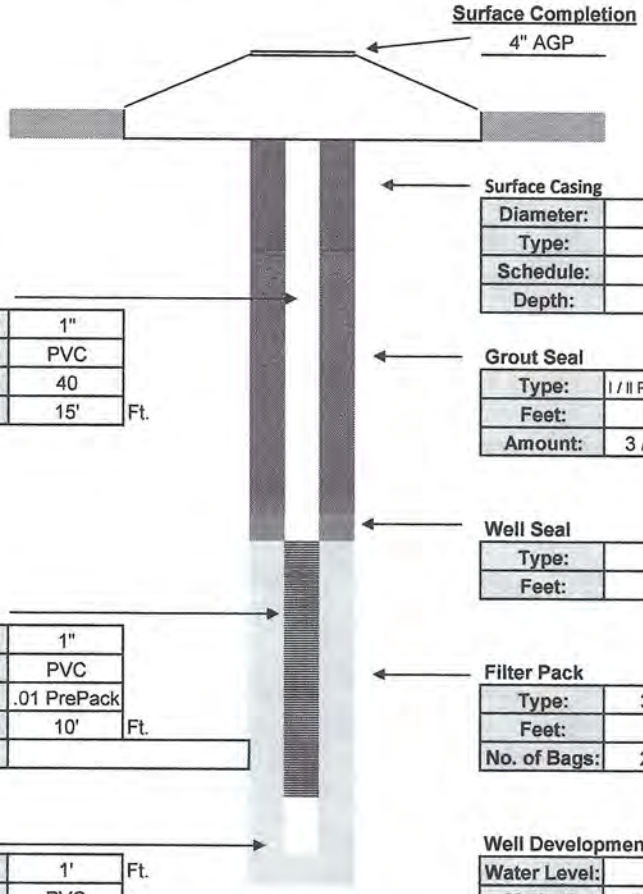
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	25'	10'	15'	1	3 / 50 lbs	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		13'	← Feet →	10'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	15' Ft.

Grout Seal

Type:	I / II PORTLAND	
Feet:	Feet	
Amount:	3 / 50 lbs	Bags

Well Seal

Type:	0
Feet:	0

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	30/65
Feet:	2'
No. of Bags:	20/30

Sump

Length:	1' Ft.
Type:	PVC

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

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Completion:	1/14/2020
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Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

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☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

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(* Denotes Required FieldS Where Applicable)

Date Stamp

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1. *Permit Number 53798 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

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_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 25 ft. Cased Depth 15 ft. Open Hole From: NA to NA ft. Screen:From 15 to 25 ft. Slot Size .01 PrePack

*** ABANDONMENT** OTHER (Explain) _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 13 ft. # of bags 1.00 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 13 ft. To 15 ft. # of bags 0.50 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : David Longino

I certify that the information in this report is accurate & true.

* Permit No. 53798

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	ft. To	3	ft. Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	ft. To	10	ft. Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	ft. To	20	ft. Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	ft. To	25	ft. Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 38 28°30'54.65" N 80°38'23.47" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

FLORIDA DEPARTMENT OF HEALTH – BREVARD COUNTY

Environmental Health Services
2725 Judge Fran Jamieson Way, Suite A116
Viera, Florida 32940-6605
PHONE: 321/633-2100 FAX: 321/633-2151
www.BrevardEH.com

WELL CONSTRUCTION PERMIT

Permit Number: 53799

Application Date: 12/5/2019
Expiration Date: 12/5/2020
Permit Fee: $100.00

Purpose: MONITORING WELL: (2) OR MORE ON ONE SITE/FACILITY
Township/Range/Section: 23 - 37 - 04
Subdivision/Lot #: 10 WELLS
Well Site Address: 5TH STREET & G AVENUE E
KENNEDY SPACE CENTER, FL

Companion Permit Type / Number: 53797 - 53-799

Well Contractor: GROUNDWATER PROTECTION, HINST **WWC #:** 9311
WWC Phone #: 407-426-7885
Owner Name: UNITED STATES GOVERNMENT
Owner Phone:

Issuance of this permit does not relieve the well owner of meeting the permit requirements of county, municipal, or other legally constituted authorities. The well contractor must meet the well set-back per Chapter 62-532, F.A.C., Table 1. Any variance from these setbacks or change to site plan must be approved in advance by Environmental Health Services.

Inspection Details: **Circle One:** OSTDS or Sewer **OSTDS # and Expiration Date** _____

- ☐ Site Plan
- ☐ Well ID Tag
- ☐ Casing Height _____"
- ☐ Grout Depth _____"
- ☐ Completion Report ____/____/____
- ☐ OSTDS Site Setback _____'
- ☐ OSTDS AP Setback _____'
- ☐ Foundation Setback _____'
- ☐ Bacteriological Result ____/____/____
- ☐ Nitrate Result ____/____/____
- ☐ Variance Application Date ____/____/____
- ☐ Variance Approval Date ____/____/____
- ☐ Warning Notice Sent ____/____/____
- ☐ Compliance Letter Sent ____/____/____
- ☐ FLUWID: _____
- ☐ Other: _____

Date:	Initials:	Violation(s):	Clerical Notes:
			Drawings:

	Original Site Visit	Construction Date	Re-inspection Date	Septic Site Approval Date	Final Date
Date					
Initials					

THIS PERMIT IS ISSUED BY THE AUTHORIZED REPRESENTATIVE OF THE FLORIDA DEPARTMENT OF HEALTH UNDER THE AUTHORITY OF CHAPTER 381, 402, 403, 513, 514, AND 489 PARTIII, FLORIDA STATUTES, FLORIDA ADMINISTRATIVE CODE AND BREVARD COUNTY CODE SECTION 46-36 THRU 46-72 ARTICLE II: ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS AND WATER WELL PERMITTING. THIS PERMIT IS SUBJECT TO SUSPENSION OR REVOCATION WHEN IT IS DETERMINED BY THE DEPARTMENT THAT THE OPERATION, CONDITIONS AND/OR DEPARTMENT STANDARDS ARE NOT BEING MET.

DISPLAY IN A CONSPICUOUS PLACE – THIS PERMIT IS NON-TRANSFERABLE

Environmental Health Services
2725 Judge Fran Jamieson Way
Building A, Rm. 116
Viera, Florida 32940-6682

RECEIPT

DATE 11/20/19 No. 3641

RECEIVED FROM JAMES HURST $ 320.00

three hundred dollars DOLLARS

○ FOR RENT
⊗ FOR HMEN - ESC Well apps

ACCOUNT		
PAYMENT	320	—
BAL. DUE		

○ CASH
○ CHECK
○ MONEY ORDER
⊗ CREDIT CARD

FROM Mk 683059 TO

BY Debbie M

WELL COMPLETION LOG

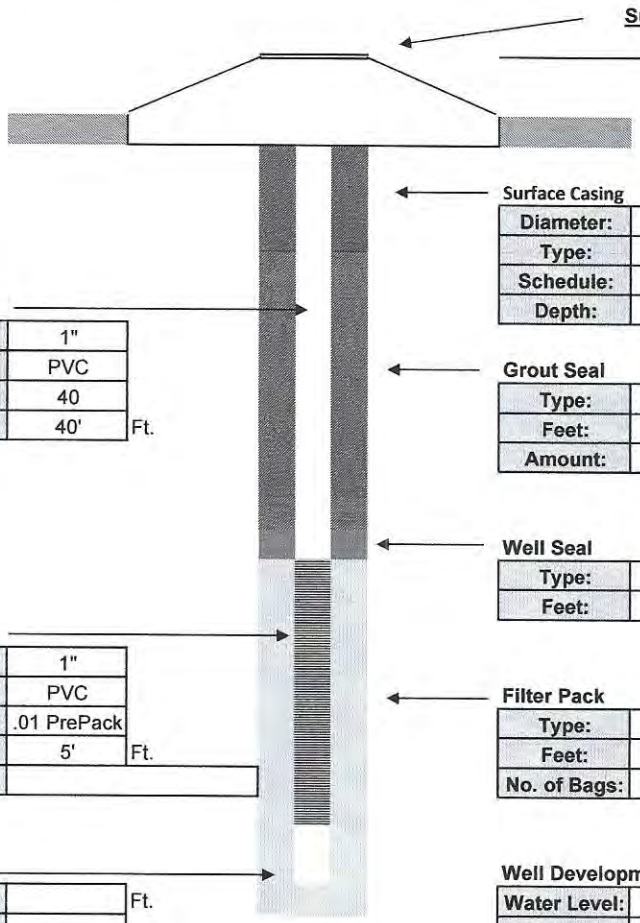
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 32
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	5'	40'	1	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		36'	← Feet →	7'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	40' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	36'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

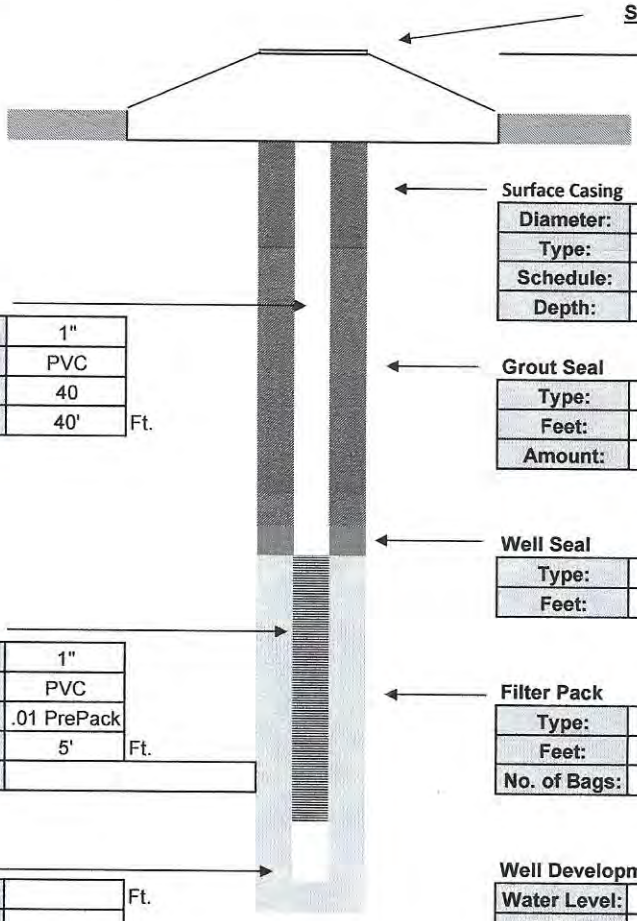
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 42
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	5'	40'	1	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		36'	← Feet →	7'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	40' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	36'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

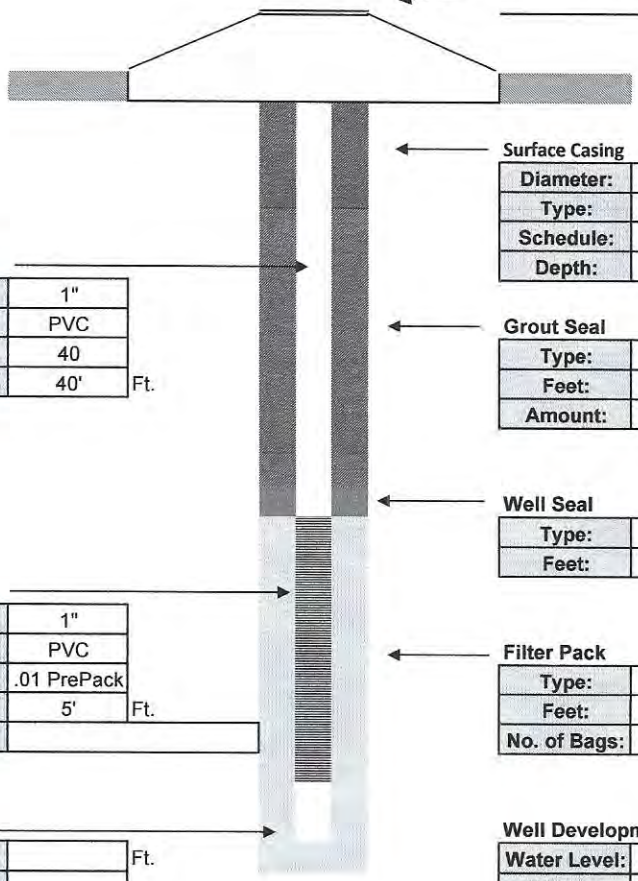
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 44
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	5'	40'	1	2 / 50 lbs.	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		36'	← Feet →	7'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	40' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	36'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : **Brevard County**

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number **53799** CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned **3** * Number of permitted wells not constructed, repaired, or abandoned **0**

3. * Owner's Name **United States Govt** 4. * Completion Date **12/20/2019** 5. Florida Unique ID _____

6. **HMFN Site off 5th St & G Ave East, KSC**
* Well Location - Address, Road Name or Number, City, ZIP

7. * County **Brevard** * Section **4** Land Grant _____ * Township **23S** * Range **37E**

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: **X** Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted **X** Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level **NA** ft. After **NA** Hours a **NA** GPM

14. *Measuring Point (Describe) **Land Surface** Which is **0** ft. _____ Above _____ Below Land Surface * Flowing _____ Yes **X** No

15.* Casing Material: _____ Black Steel _____ Galvanized **X** PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: **45** ft. Cased Depth **40** ft. Open Hole From: **NA** to **NA** ft. Screen:From **40** to **45** ft. Slot Size **.01 PrePack**

*** ABANDONMENT** **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. **1** in. From **0** ft. To **36.0** ft. # of bags **1.00** Seal Material (Check One): **X** Neat Cement _____ Bentonite _____ Other
Diam. **1** in. From **36.0** ft. To **40** ft. # of bags **1.00** Seal Material (Check One): _____ Neat Cement _____ Bentonite **X** Other : **SAND**
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: **James Hinst** * License No. **9311** Email Address: Jim@drillprollc.com

*Contractor's Signature : *James Hinst* * Driller's Name : **Dave Longino**

I certify that the information in this report is accurate & true.

* Permit No. 53799

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
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SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	35	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From	35	To	44	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand & Shell
From	44	To	45	Color	Green	Grain Size (F, M, C)	N	Material	Silty Sand with Clay
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO	1219010	
MW 32	28°30'55.49" N	80°38'28.43" W
MW 42	28°30'55.59" N	80°38'27.17" W
MW 44	28°30'55.99" N	80°38'26.82" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

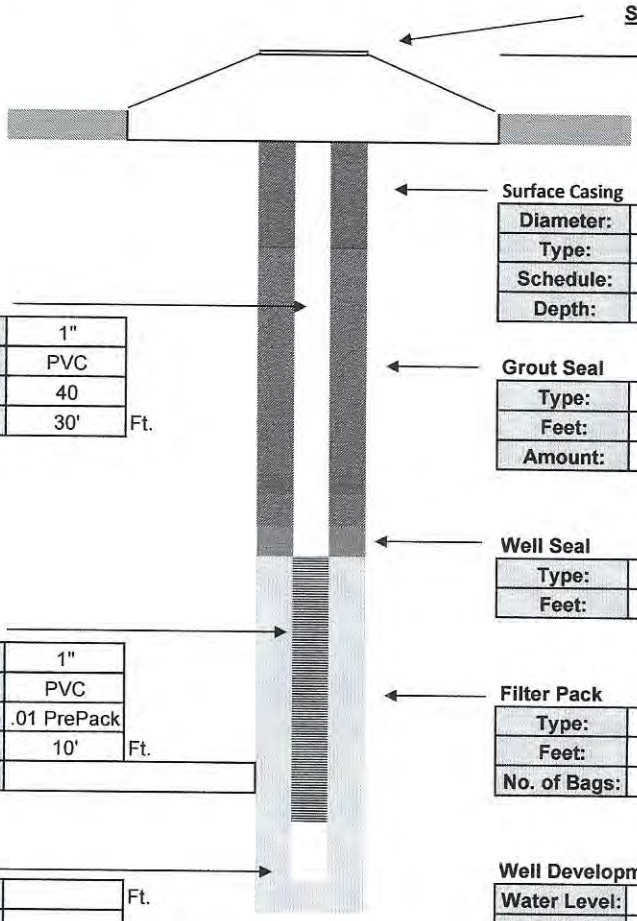
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 31
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	40'	10'	30'	1	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		26'	← Feet →	12'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	30' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	26'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

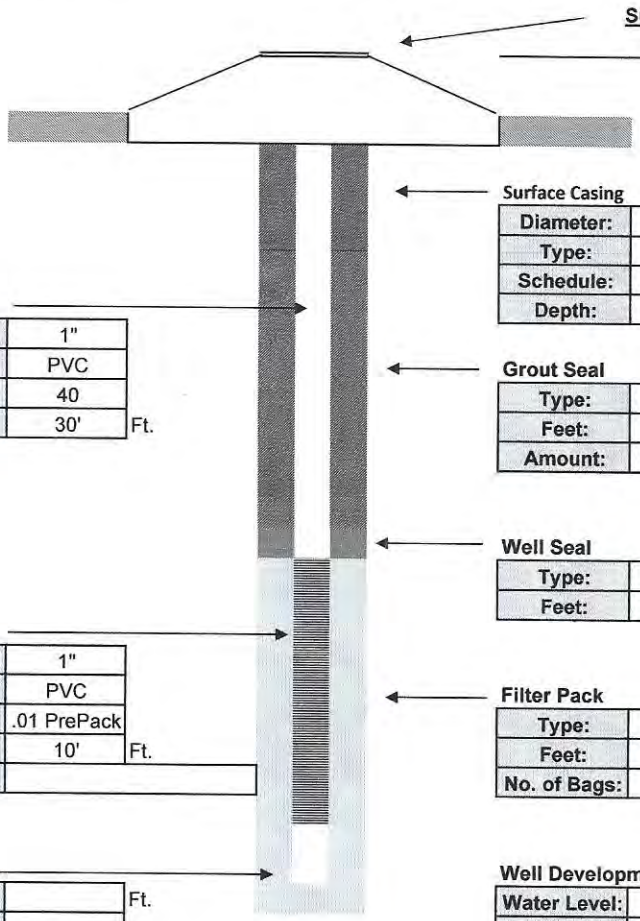
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 35
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	40'	10'	30'	1	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		26'	← Feet →	12'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	30' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	26'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

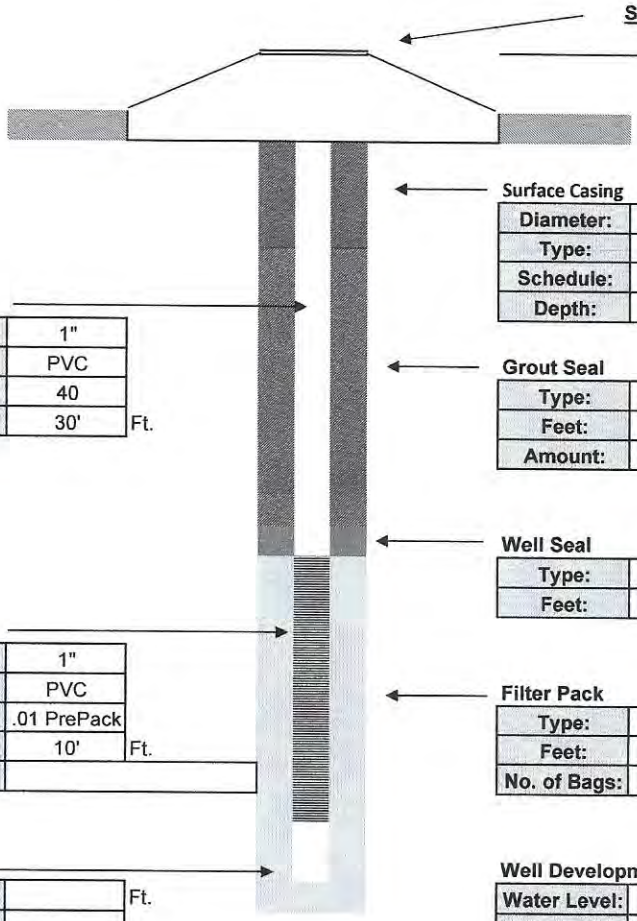
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 41
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	40'	10'	30'	1	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		26'	← Feet →	12'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	30' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	26'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

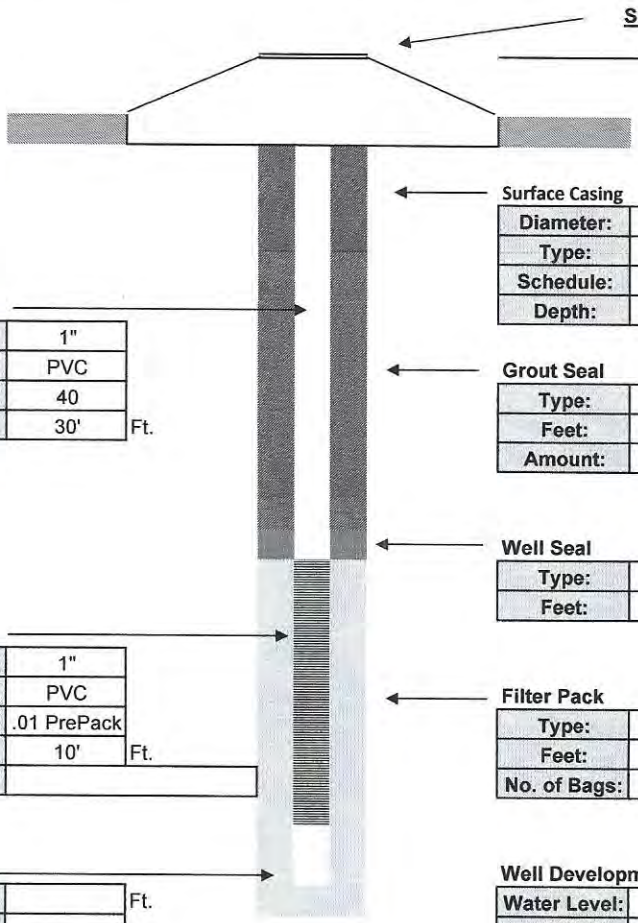
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 43
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	40'	10'	30'	1	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		26'	← Feet →	12'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	30' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	26'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : **Brevard County**

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number **53799** CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned **4** * Number of permitted wells not constructed, repaired, or abandoned **0**

3. * Owner's Name **United States Govt** 4. * Completion Date **12/20/2019** 5. Florida Unique ID _____

6. **HMFN Site off 5th St & G Ave East, KSC**
* Well Location - Address, Road Name or Number, City, ZIP

7. * County **Brevard** * Section **4** Land Grant _____ * Township **23S** * Range **37E**

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: **X** Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted **X** Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level **NA** ft. After **NA** Hours a **NA** GPM

14. *Measuring Point (Describe) **Land Surface** Which is **0** ft. _____ Above _____ Below Land Surface * Flowing _____ Yes **X** No

15.* Casing Material: _____ Black Steel _____ Galvanized **X** PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: **40** ft. Cased Depth **30** ft. Open Hole From: **NA** to **NA** ft. Screen:From **30** to **40** ft. Slot Size **.01 PrePack**

*** ABANDONMENT** **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. **1** in. From **0** ft. To **26.0** ft. # of bags **1.00** Seal Material (Check One): **X** Neat Cement _____ Bentonite _____ Other
Diam. **1** in. From **26.0** ft. To **30** ft. # of bags **1.00** Seal Material (Check One): _____ Neat Cement _____ Bentonite **X** Other : **SAND**
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: **James Hinst** * License No. **9311** Email Address: Jim@drillprollc.com

*Contractor's Signature : *James Hinst* * Driller's Name : **Dave Longino**

I certify that the information in this report is accurate & true.

* Permit No. 53799

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	35	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From	35	To	40	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand & Shell
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO	1219010	
MW 31	28°30'55.49" N	80°38'28.43" W
MW 35	28°30'55.36" N	80°38'27.50" W
MW 41	28°30'55.59" N	80°38'27.17" W
MW 43	28°30'55.99" N	80°38'26.82" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

FLORIDA DEPARTMENT OF HEALTH – BREVARD COUNTY

Environmental Health Services
2725 Judge Fran Jamieson Way, Suite A116
Viera, Florida 32940-6605
PHONE: 321/633-2100 FAX: 321/633-2151
www.BrevardEH.com

WELL CONSTRUCTION PERMIT

Permit Number: 53797

Application Date: 12/5/2019
Expiration Date: 12/5/2020
Permit Fee: $100.00

Purpose: MONITORING WELL: (2) OR MORE ON ONE SITE/FACILITY
Township/Range/Section: 23 - 37 - 04
Subdivision/Lot #: 2 WELLS
Well Site Address: 5TH STREET & G AVENUE E
KENNEDY SPACE CENTER, FL

Companion Permit Type / Number: 53797-53799

Well Contractor: GROUNDWATER PROTECTION, HINST **WWC #:** 9311
WWC Phone #: 407-426-7885
Owner Name: UNITED STATES GOVERNMENT
Owner Phone:

Issuance of this permit does not relieve the well owner of meeting the permit requirements of county, municipal, or other legally constituted authorities. The well contractor must meet the well set-back per Chapter 62-532, F.A.C., Table 1. Any variance from these setbacks or change to site plan must be approved in advance by Environmental Health Services.

Inspection Details: **Circle One:** OSTDS or Sewer **OSTDS # and Expiration Date** _____

- ☐ Site Plan
- ☐ Well ID Tag
- ☐ Casing Height _____"
- ☐ Grout Depth _____"
- ☐ Completion Report ____/____/____
- ☐ OSTDS Site Setback _____'
- ☐ OSTDS AP Setback _____'
- ☐ Foundation Setback _____'
- ☐ Bacteriological Result ____/____/____
- ☐ Nitrate Result ____/____/____
- ☐ Variance Application Date ____/____/____
- ☐ Variance Approval Date ____/____/____
- ☐ Warning Notice Sent ____/____/____
- ☐ Compliance Letter Sent ____/____/____
- ☐ FLUWID: _____
- ☐ Other: _____

Date:	Initials:	Violation(s):	Clerical Notes:
			Drawings:

	Original Site Visit	Construction Date	Re-inspection Date	Septic Site Approval Date	Final Date
Date					
Initials					

THIS PERMIT IS ISSUED BY THE AUTHORIZED REPRESENTATIVE OF THE FLORIDA DEPARTMENT OF HEALTH UNDER THE AUTHORITY OF CHAPTER 381, 402, 403, 513, 514, AND 489 PARTIII, FLORIDA STATUTES, FLORIDA ADMINISTRATIVE CODE AND BREVARD COUNTY CODE SECTION 46-36 THRU 46-72 ARTICLE II: ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS AND WATER WELL PERMITTING. THIS PERMIT IS SUBJECT TO SUSPENSION OR REVOCATION WHEN IT IS DETERMINED BY THE DEPARTMENT THAT THE OPERATION, CONDITIONS AND/OR DEPARTMENT STANDARDS ARE NOT BEING MET.

DISPLAY IN A CONSPICUOUS PLACE – THIS PERMIT IS NON-TRANSFERABLE

WELL COMPLETION LOG

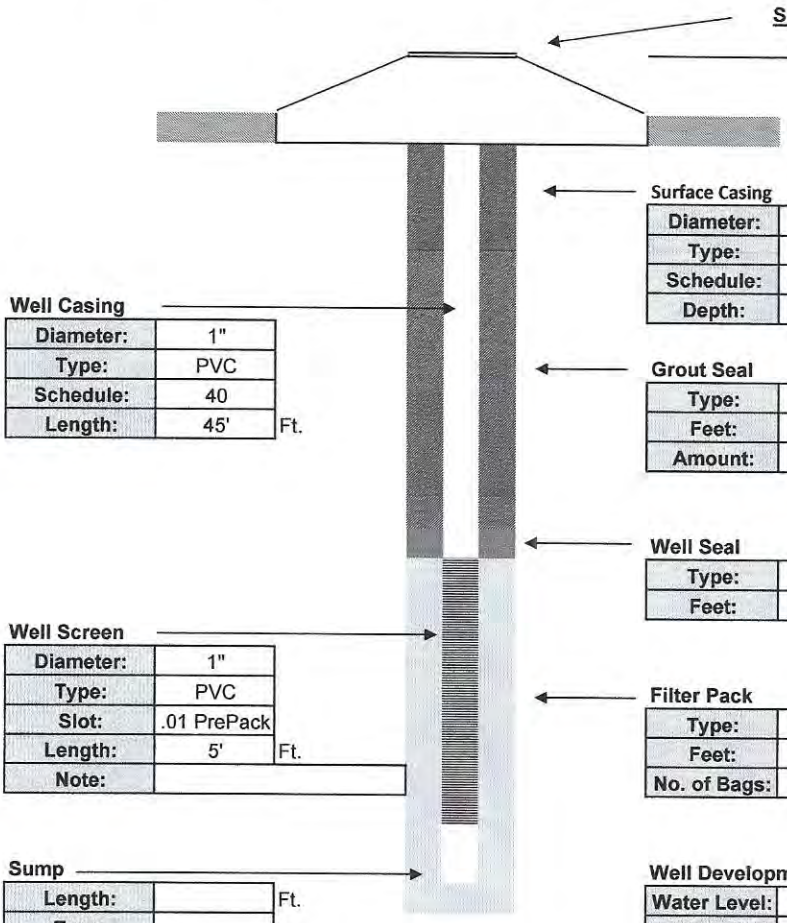
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 33
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	50'	5'	45'	1	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		41'	← Feet →	7'	2'



Surface Casing / Intermediate Casing

Diameter:		Diameter:	
Type:		Type:	
Schedule:		Schedule:	
Depth:		Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	45' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	41'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : **Brevard County**

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number **53797** CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned **1** * Number of permitted wells not constructed, repaired, or abandoned **0**

3. * Owner's Name **United States Govt** 4. * Completion Date **12/20/2019** 5. Florida Unique ID _____

6. **HMFN Site off 5th St & G Ave East, KSC**
* Well Location - Address, Road Name or Number, City, ZIP

7. * County **Brevard** * Section **4** Land Grant _____ * Township **23S** * Range **37E**

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: **X** Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted **X** Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level **NA** ft. After **NA** Hours a **NA** GPM

14. *Measuring Point (Describe) **Land Surface** Which is **0** ft. _____ Above _____ Below Land Surface * Flowing _____ Yes **X** No

15.* Casing Material: _____ Black Steel _____ Galvanized **X** PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: **50** ft. Cased Depth **45** ft. Open Hole From: **NA** to **NA** ft. Screen:From **45** to **50** ft. Slot Size **.01 PrePack**

*** ABANDONMENT** _____ **OTHER (Explain)**

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. **1** in. From **0** ft. To **41.0** ft. # of bags **1.00** Seal Material (Check One): **X** Neat Cement _____ Bentonite _____ Other
Diam. **1** in. From **41.0** ft. To **45** ft. # of bags **1.00** Seal Material (Check One): _____ Neat Cement _____ Bentonite **X** Other : **SAND**
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: **James Hinst** * License No. **9311** Email Address: Jim@drillprollc.com

*Contractor's Signature : *James Hinst* * Driller's Name : **Dave Longino**

I certify that the information in this report is accurate & true.

* Permit No. 53797

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	To	Color	Grain Size (F, M, C)		Material
From 0 ft.	To 3 ft.	Color Dk Gray	Grain Size (F, M, C)	N	Material Sand
From 3 ft.	To 10 ft.	Color Dk Red/Brwn	Grain Size (F, M, C)	N	Material Sand
From 10 ft.	To 20 ft.	Color Gray/Brwn	Grain Size (F, M, C)	N	Material Sand
From 20 ft.	To 35 ft.	Color Green/Grey	Grain Size (F, M, C)	N	Material Sand
From 35 ft.	To 44 ft.	Color Green/Grey	Grain Size (F, M, C)	N	Material Sand & Shell
From 44 ft.	To 50 ft.	Color Green	Grain Size (F, M, C)	N	Material Silty Sand with Clay
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____
From ____ ft.	To ____ ft.	Color ____	Grain Size (F, M, C)	____	Material ____

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 33 28°30'55.49" N 80°38'28.43" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

FLORIDA DEPARTMENT OF HEALTH – BREVARD COUNTY

Environmental Health Services
2725 Judge Fran Jamieson Way, Suite A116
Viera, Florida 32940-6605
PHONE: 321/633-2100 FAX: 321/633-2151
www.BrevardEH.com

WELL CONSTRUCTION PERMIT

Permit Number: 53798

Application Date: 12/5/2019
Expiration Date: 12/5/2020
Permit Fee: $50.00

Purpose: MONITORING WELL: (1)
Township/Range/Section: 23 - 37 - 04
Subdivision/Lot #: 9 WELLS
Well Site Address: 5TH STREET & G AVENUE E
KENNEDY SPACE CENTER, FL

Companion Permit Type / Number: 53797 - 53799

Well Contractor: GROUNDWATER PROTECTION, HINST **WWC #:** 9311
WWC Phone #: 407-426-7885
Owner Name: UNITED STATES GOVERNMENT
Owner Phone:

Issuance of this permit does not relieve the well owner of meeting the permit requirements of county, municipal, or other legally constituted authorities. The well contractor must meet the well set-back per Chapter 62-532, F.A.C., Table 1. Any variance from these setbacks or change to site plan must be approved in advance by Environmental Health Services.

Inspection Details: Circle One: OSTDS or Sewer **OSTDS # and Expiration Date** _____

- ☐ Site Plan
- ☐ Well ID Tag
- ☐ Casing Height _____"
- ☐ Grout Depth _____"
- ☐ Completion Report ____/____/____
- ☐ OSTDS Site Setback _____'
- ☐ OSTDS AP Setback _____'
- ☐ Foundation Setback _____'
- ☐ Bacteriological Result ____/____/____
- ☐ Nitrate Result ____/____/____
- ☐ Variance Application Date ____/____/____
- ☐ Variance Approval Date ____/____/____
- ☐ Warning Notice Sent ____/____/____
- ☐ Compliance Letter Sent ____/____/____
- ☐ FLUWID: _____
- ☐ Other: _____

Date:	Initials:	Violation(s):	Clerical Notes:
			Drawings:

	Original Site Visit	Construction Date	Re-inspection Date	Septic Site Approval Date	Final Date
Date					
Initials					

THIS PERMIT IS ISSUED BY THE AUTHORIZED REPRESENTATIVE OF THE FLORIDA DEPARTMENT OF HEALTH UNDER THE AUTHORITY OF CHAPTER 381, 402, 403, 513, 514, AND 489 PARTIII, FLORIDA STATUTES, FLORIDA ADMINISTRATIVE CODE AND BREVARD COUNTY CODE SECTION 46-36 THRU 46-72 ARTICLE II: ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS AND WATER WELL PERMITTING. THIS PERMIT IS SUBJECT TO SUSPENSION OR REVOCATION WHEN IT IS DETERMINED BY THE DEPARTMENT THAT THE OPERATION, CONDITIONS AND/OR DEPARTMENT STANDARDS ARE NOT BEING MET.

DISPLAY IN A CONSPICUOUS PLACE – THIS PERMIT IS NON-TRANSFERABLE

WELL COMPLETION LOG

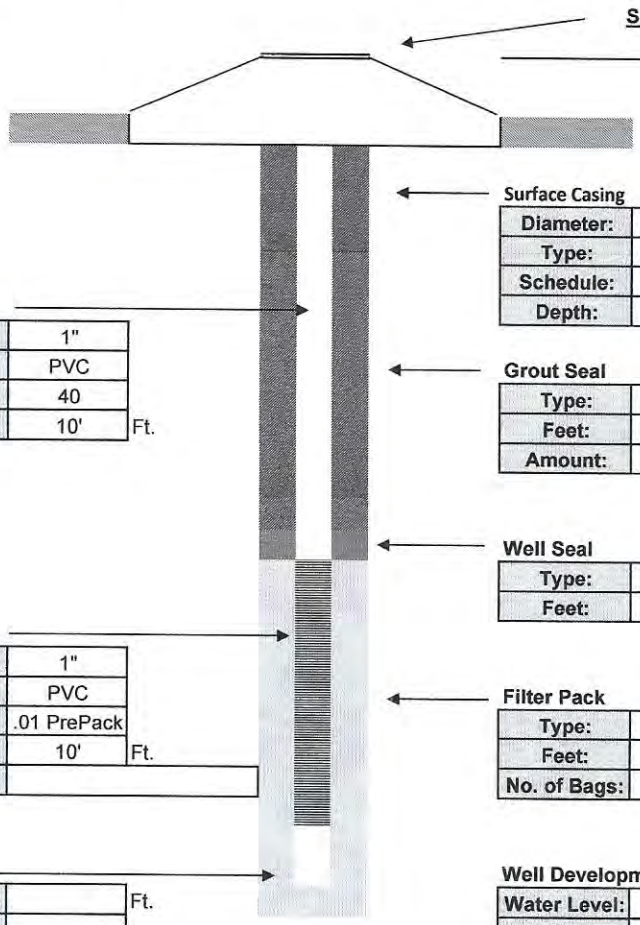
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 29
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	20'	10'	10'	0.5	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		6'	← Feet →	12'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	10' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	6'
Amount:	0.5 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

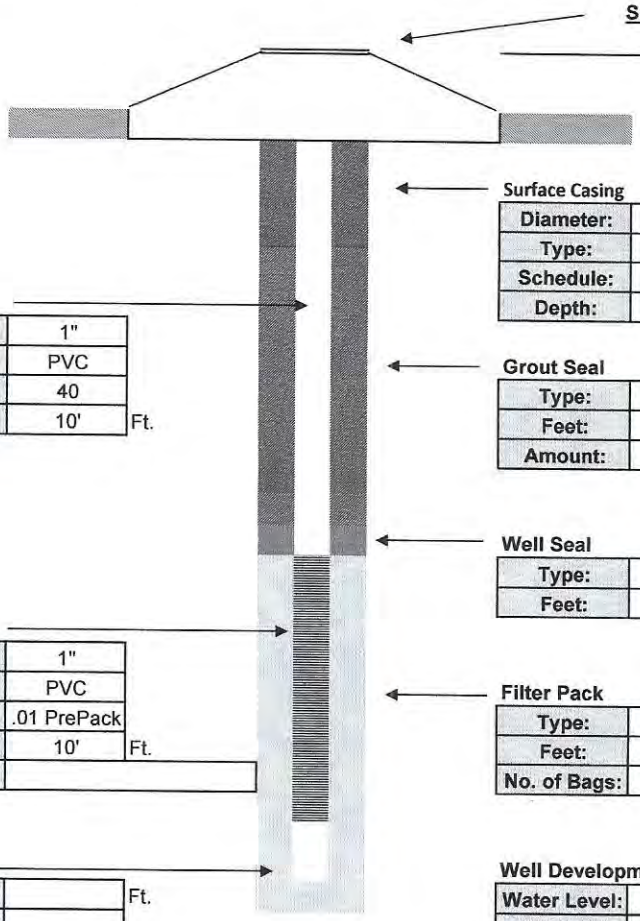
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 34
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	20'	10'	10'	0.5	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		6'	← Feet →	12'	2'



Surface Casing		Intermediate Casing	
Diameter:		Diameter:	
Type:		Type:	
Schedule:		Schedule:	
Depth:		Depth:	

Well Casing	
Diameter:	1"
Type:	PVC
Schedule:	40
Length:	10' Ft.

Grout Seal	
Type:	I / II PORTLAND
Feet:	6'
Amount:	0.5 Bags

Well Seal	
Type:	30/65
Feet:	2'

Well Screen	
Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack	
Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump	
Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

WELL COMPLETION LOG

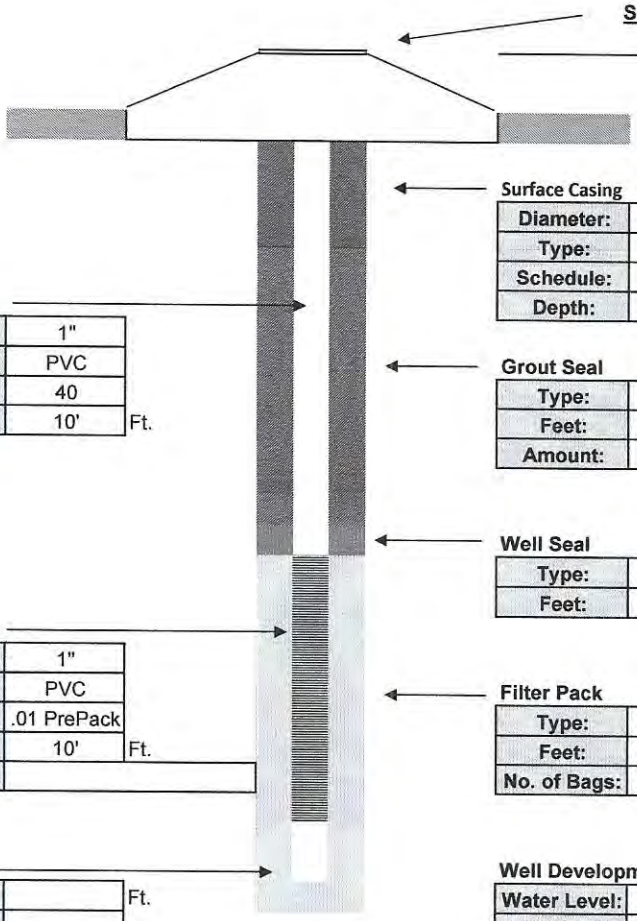
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 36
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	20'	10'	10'	0.5	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		6'	← Feet →	12'	2'



Surface Completion
8" Boltdown

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	10' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	6'
Amount:	0.5 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : **Brevard County**

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number **53798** CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned **3** * Number of permitted wells not constructed, repaired, or abandoned **0**

3. * Owner's Name **United States Govt** 4. * Completion Date **12/20/2019** 5. Florida Unique ID _____

6. **HMFN Site off 5th St & G Ave East, KSC**
* Well Location - Address, Road Name or Number, City, ZIP

7. * County **Brevard** * Section **4** Land Grant _____ * Township **23S** * Range **37E**

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: **X** Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted **X** Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level **NA** ft. After **NA** Hours a **NA** GPM

14. *Measuring Point (Describe) **Land Surface** Which is **0** ft. _____ Above _____ Below Land Surface * Flowing _____ Yes **X** No

15.* Casing Material: _____ Black Steel _____ Galvanized **X** PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: **20** ft. Cased Depth **10** ft. Open Hole From: **NA** to **NA** ft. Screen:From **10** to **20** ft. Slot Size **.01 PrePack**

*** ABANDONMENT** _____ **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. **1** in. From **0** ft. To **6** ft. # of bags **0.50** Seal Material (Check One): **X** Neat Cement _____ Bentonite _____ Other
Diam. **1** in. From **6** ft. To **10** ft. # of bags **0.50** Seal Material (Check One): _____ Neat Cement _____ Bentonite **X** Other : **SAND**
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: **James Hinst** * License No. **9311** Email Address: Jim@drillprollc.com

*Contractor's Signature : *James Hinst* * Driller's Name : **David Longino**

I certify that the information in this report is accurate & true.

* Permit No. 53798

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
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P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
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SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	ft. To	3	ft. Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	ft. To	10	ft. Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	ft. To	20	ft. Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	
From		ft. To		ft. Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO	1219010	
MW 29	28°30'55.49" N	80°38'28.43" W
MW 34	28°30'55.36" N	80°38'27.50" W
MW 36	28°30'54.79" N	80°38'26.63" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

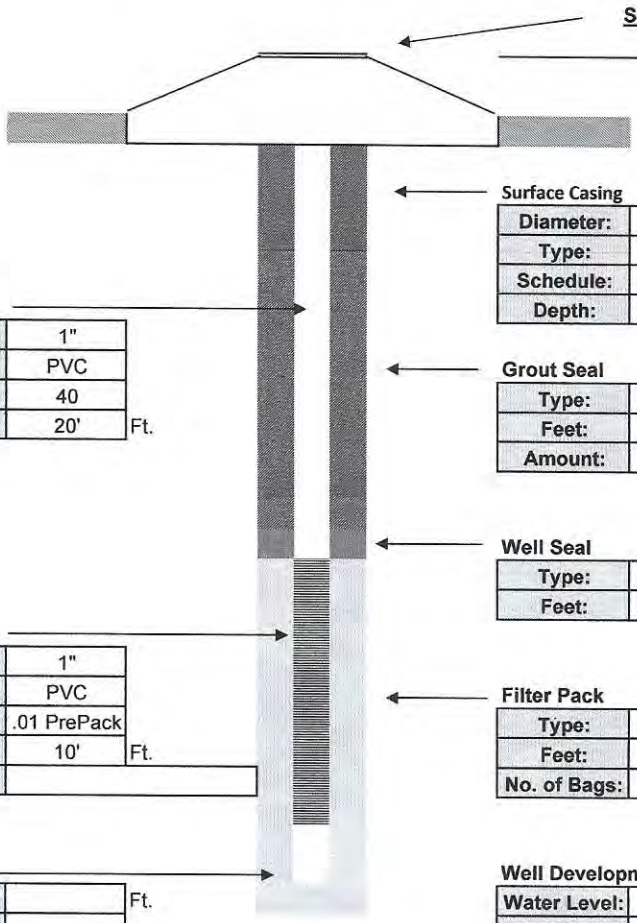
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 30
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	30'	10'	20'	1	3 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PrePack		16'	← Feet →	12'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	20' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	16'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	3 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Dave Longino
Lead Hand:	Ben Yarema
3rd Man:	NA
Drill Rig:	SR 4

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : **Brevard County**

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number **53798** CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned **1** * Number of permitted wells not constructed, repaired, or abandoned **0**

3. * Owner's Name **United States Govt** 4. * Completion Date **12/20/2019** 5. Florida Unique ID _____

6. **HMFN Site off 5th St & G Ave East, KSC**
* Well Location - Address, Road Name or Number, City, ZIP

7. * County **Brevard** * Section **4** Land Grant _____ * Township **23S** * Range **37E**

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic
_____ Bottled Water Supply
_____ Public Water Supply (Limited Use/DOH)
_____ Public Water Supply (Community or Non Community/DEP)
_____ Class I Injection
_____ Landscape Irrigation
_____ Recreation Area Irrigation
_____ Agricultural Irrigation
_____ Livestock
_____ Nursery Irrigation
_____ Commercial / Industrial
_____ Golf Course Irrigation
_____ Site Investigation
X Monitoring
_____ Test
_____ Earth - Coupled Geothermal
_____ HVAC Supply
_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level **NA** ft. After **NA** Hours a **NA** GPM

14. *Measuring Point (Describe) **Land Surface** Which is **0** ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: **30** ft. Cased Depth **20** ft. Open Hole From: **NA** to **NA** ft. Screen:From **20** to **30** ft. Slot Size **.01 PrePack**

*** ABANDONMENT** **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. **1** in. From **0** ft. To **16** ft. # of bags **1.00** Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. **1** in. From **16** ft. To **20** ft. # of bags **0.50** Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : **SAND**
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: **James Hinst** * License No. **9311** Email Address: Jim@drillprollc.com

*Contractor's Signature : *James Hinst* * Driller's Name : **David Longino**

I certify that the information in this report is accurate & true.

* Permit No. 53798

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE (352) 796-7211 OR (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1427
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA FL 32333-4712
(US HIGHWAY 90, 10 MILES WEST OF TALLAHASSEE)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PALM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICE
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 OR (800) 226-1066 (FLORIDA ONLY)
WWW.MYSUWANNEERIVER.COM

DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	30	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 30 28°30'55.49" N 80°38'28.43" W

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

WELL COMPLETION LOG

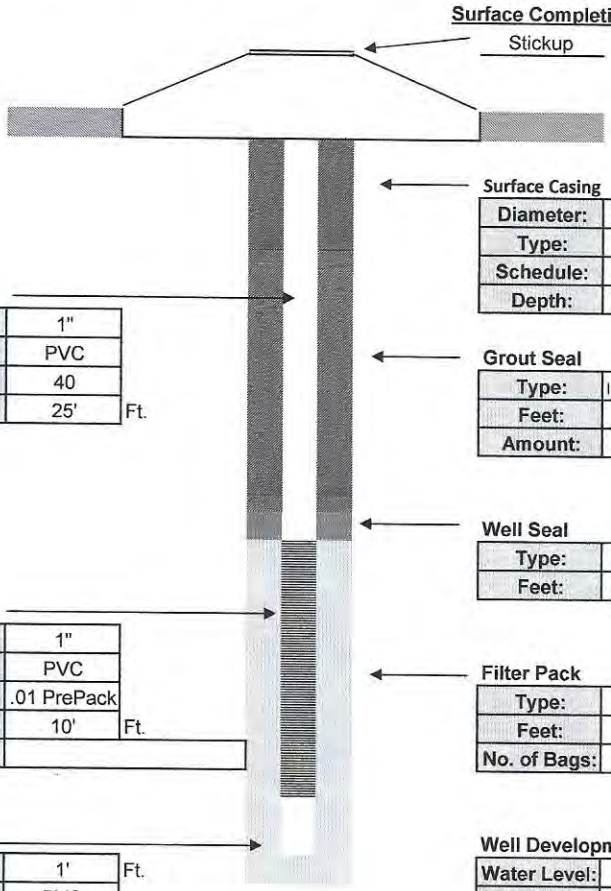
Water Mgmt. Dist.:
Permit Number:

Work Order: 1219010
Type of Well: Monitor
Well Number: MW 45
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: HMF North
Address:
C,S,Z: KSC, FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep:

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	35'	10'	25'	1	3 / 50 lbs	20/30	30/65
40 ← Schedule		Slot Size: →	.01 PrePack		21.5'	← Feet →	11.5'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	25' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	Feet
Amount:	3 / 50 lbs Bags

Well Seal

Type:	0
Feet:	0

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PrePack
Length:	10' Ft.
Note:	

Filter Pack

Type:	30/65
Feet:	2'
No. of Bags:	20/30

Sump

Length:	1' Ft.
Type:	PVC

Well Development

Water Level:	4'		
Method:	Honda		
Start:	Greenish	Finish:	Clear
Time:	0.25 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	12/20/2019
Driller:	Jared Link
Lead Hand:	Thomas Watson
3rd Man:	Malcolm Smith
Drill Rig:	SR 3

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

☐ Southwest
☐ Northwest
☐ St. Johns River
☐ South Florida
☐ Suwannee River
☐ DEP
■ Delegated Authority (if Applicable) : Brevard County

PLEASE FILL OUT ALL APPLICABLE FIELDS
(* Denotes Required FieldS Where Applicable)

Date Stamp

Official Use Only

1. *Permit Number 53798 CUP/WUP No. _____ DID Number _____ 62-524 Delineation No. _____

2. * Number of permitted wells constructed, repaired, or abandoned 1 * Number of permitted wells not constructed, repaired, or abandoned 0

3. * Owner's Name United States Govt 4. * Completion Date 12/20/2019 5. Florida Unique ID _____

6. HMFN Site off 5th St & G Ave East, KSC
* Well Location - Address, Road Name or Number, City, ZIP

7. * County Brevard * Section 4 Land Grant _____ * Township 23S * Range 37E

8. Latitude _____ Longitude _____

9. Data Obtained From : _____ GPS _____ Map _____ Survey Datum: _____ NAD 27 _____ NAD 83 _____ WGS 84

10* TYPE OF WORK: X Construction _____ Repair _____ Modification _____ Abandonment

11. Specify Intended Use(s) of Well(s):

_____ Domestic	_____ Landscape Irrigation	_____ Agricultural Irrigation	_____ Site Investigation
_____ Bottled Water Supply	_____ Recreation Area Irrigation	_____ Livestock	X Monitoring
_____ Public Water Supply (Limited Use/DOH)		_____ Nursery Irrigation	_____ Test
_____ Public Water Supply (Community or Non Community/DEP)		_____ Commercial / Industrial	_____ Earth - Coupled Geothermal
_____ Class I Injection		_____ Golf Course Irrigation	_____ HVAC Supply
			_____ HVAC Return

Class V Injection: _____ Recharge _____ Commercial/Industrial Disposal _____ Aquifer Storage & Recovery _____ Drainage
Remediation : _____ Recovery _____ Air Sparge _____ Other (Describe) _____
_____ Other (Describe) _____

12. *Drill Method: _____ Auger _____ Cable Tool _____ Rotary _____ Combination (Two or More Methods) _____ Jetted X Sonic
_____ Horizontal Drilling _____ Hydraulic Point (Direct Push) _____ Other _____

13. *Measured Static Water Level _____ ft. Measured Pumping Water Level NA ft. After NA Hours a NA GPM

14. *Measuring Point (Describe) Land Surface Which is 0 ft. _____ Above _____ Below Land Surface * Flowing _____ Yes X No

15.* Casing Material: _____ Black Steel _____ Galvanized X PVC _____ Stainless Steel _____ Not Cased Other _____

16.* Total Well Depth: 35 ft. Cased Depth 25 ft. Open Hole From: NA to NA ft. Screen:From 25 to 35 ft. Slot Size .01 PrePack

*** ABANDONMENT** _____ **OTHER (Explain)** _____

From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
From _____ ft. To _____ ft. No of Bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** SURFACE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** PRIMARY CASING DIAMETER & DEPTH**

Diam. 1 in. From 0 ft. To 22.5 ft. # of bags 1.00 Seal Material (Check One): X Neat Cement _____ Bentonite _____ Other
Diam. 1 in. From 22.5 ft. To 25 ft. # of bags 0.50 Seal Material (Check One): _____ Neat Cement _____ Bentonite X Other : SAND
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** LINER CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

*** TELESCOPE CASING DIAMETER & DEPTH**

Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other
Diam. _____ in. From _____ ft. To _____ ft. # of bags _____ Seal Material (Check One): _____ Neat Cement _____ Bentonite _____ Other

PUMP TYPE (If Known)

_____ Centrifugal _____ Jet _____ Submersible _____ Turbine
Horsepower _____ Pump Capacity (GPM) _____
Pump depth _____ ft. Intake Depth _____ ft.

CHEMICAL ANALYSIS (When Required)

Iron _____ ppm Sulfate _____ ppm Chloride _____ ppm
_____ Laboratory Test _____ Field Test Kit

WATER WELL CONTRACTOR

* Contractor Name: James Hinst * License No. 9311 Email Address: Jim@drillprollc.com

*Contractor's Signature : James Hinst * Driller's Name : Jared Link

I certify that the information in this report is accurate & true.

* Permit No. 53798

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DRILL CUTTINGS LOG (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zones.

From	0	To	3	Color	Dk Gray	Grain Size (F, M, C)	N	Material	Sand
From	3	To	10	Color	Dk Red/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	10	To	20	Color	Gray/Brwn	Grain Size (F, M, C)	N	Material	Sand
From	20	To	35	Color	Green/Grey	Grain Size (F, M, C)	N	Material	Sand
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	
From		To		Color		Grain Size (F, M, C)		Material	

COMMENTS

Detailed Site Map of Well Location

GP WO 1219010

MW 45 28°35'55.20" N 80°38'28.27" W

N

Give distances from all reference point or structures, septic systems, sanitary hazards, and contamination sources within 500 ft. of well

APPENDIX C

GPR SURVEY REPORT

FINAL REPORT
GEOPHYSICAL INVESTIGATION
HMF NORTH SITE
MERRITT ISLAND, FL

Prepared for Tetra Tech, Inc.
Pittsburgh, PA

Prepared by GeoView, Inc.
St. Petersburg, FL

November 26, 2019

Mr. Christopher Hook, P.E.
Tetra Tech, Inc.
661 Anderson Drive, Suite 200
Pittsburgh, PA 15220

Subject: Transmittal of Final Report for Geophysical Investigation
HMF North Site - Merritt Island, FL
GeoView Project Number 30625

Dear Mr. Hook,

GeoView, Inc. (GeoView) is pleased to submit the final report that summarizes and presents the results of the geophysical investigation conducted at the HMF North Site in Merritt Island, Fl. The purpose of the geophysical investigation was to determine the presence and location of underground utilities within the designated area of the project site. GeoView appreciates the opportunity to have assisted you on this project. If you have any questions or comments about the report, please contact us.

GEOVIEW, INC.

Michael J. Wightman, P.G.
President
Florida Professional Geologist
Number 1423

Stephen Scruggs
Senior Geophysicist
Florida Professional Geologist
Number 2470

Introduction

A geophysical investigation was conducted at the HMF North Site located near the intersection of Fifth Street SE and G Avenue SE in Merritt Island, FL. The location of the survey area is provided on Figure 1. The investigation was conducted in the accessible areas of the designated portions of the project site. The purpose of the investigation was to help identify underground utilities within the survey area.

Description of Geophysical Investigation

The geophysical investigation was conducted using ground penetrating radar (GPR) and electronic utility locate (EUL) equipment. The EUL was used to identify any underground utilities that were either carrying electrical power or could be energized by an induced electrical current. The GPR was used to help identify both electrical and non-electrical underground utilities within the survey area.

A combination of two geophysical methods was used for the site investigation. The two selected methods are complementary, in that, the EUL can accurately and rapidly detect many types of underground utilities. GPR, which is slower, can then be used to confirm the results of the EUL survey and to identify other underground utilities that are non-detectible by the EUL. It is typically possible to evaluate the burial depth of the underground utilities using both methods. A description of the geophysical methods is provided as Appendix 1.

Survey Results

Results of the geophysical investigation are provided in Figure 1. The locations of the identified utilities were recorded using a Trimble Geo7x Global Positioning System (GPS) with a horizontal accuracy of 1 to 3 ft.

The estimated depths of the underground utilities (in feet below land surface [bls]) are provided. In general the estimated depths of the underground utilities are accurate to within a tolerance of +/- 25 percent. Plan view positions are usually accurate to within +/- 1-foot. If determinable, the type of underground utility is also indicated. The location of the underground utilities was also indicated on the ground surface using spray paint and/or wire pin flags. GeoView uses the American Public Works Association (APWA) uniform color codes for temporary marking of underground utilities which is as follows:

- Power / Electric (both active and inactive): red
- Communications: orange

- Gas: yellow (black with yellow outline in figures)
- Water: blue
- Nitrogen line: purple
- Unknown: pink (magenta in figures)

Limitations

The ability to collect interpretable information at a project site using the GPR and EUL methods is limited by the physical properties of both the underground soils and the underground utilities. Specific to the GPR, the depth of penetration of the GPR signal limited by the attenuation (absorption) of the GPR signal within subsurface soil materials. Once the GPR signal has been attenuated at a particular depth, information regarding deeper features will not be obtained. The ability of GPR to resolve a particular utility is a function of the contrast in dielectric constants (conductivity) between the particular utility and the surrounding soils. The larger the contrast the more easily the pipe can be resolved by the GPR. For example, the difference in dielectric constants between sand and a PVC or ceramic pipe is relatively small in comparison to the difference between sand and a steel pipe. Accordingly, when using GPR, a PVC pipe is more difficult (and sometimes impossible) to resolve in comparison to a steel pipe.

The ability of GPR to resolve a utility is also controlled by the utilities size and depth. In general, GPR loses 0.5 to 1 inch of resolution per foot of burial. For example, it would not be possible to resolve a 2-inch diameter pipe at a depth greater than 2 to 4 ft.

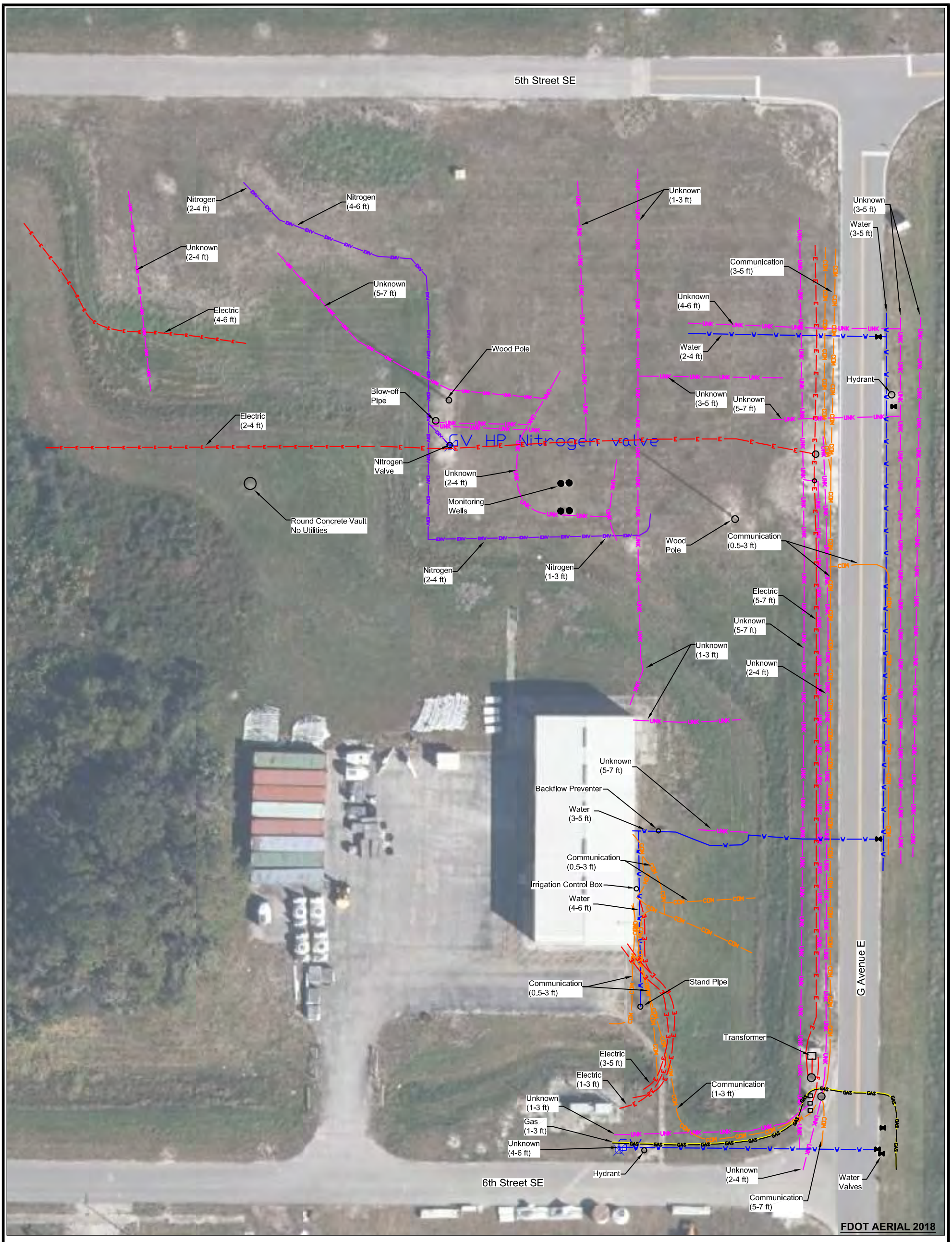
Utilities can be identified using the EUL method in both the passive and active mode. In the passive mode, the EUL detects underground utilities that are energized by a 60 Hertz current. These utilities can be either actively carrying an electrical current or may be non-electrical metallic utilities that have been energized by a nearby electrical utility. It is because of this energizing that a particular utility may be incorrectly identified as an electrical utility. For the EUL equipment to identify an electrical utility in the passive mode, the utility must be carrying a sufficient amperage (load). If the load on a particular utility is low or zero then it will not be possible to identify the utility in this mode.

In the active mode, the EUL is directly connected to the particular utility and an energizing current is induced. This method only works when the utility is metallic, if a particular utility changes from a metallic to non-metallic then the EUL will not be able to identify the utility beyond the point of that transition. Some non-metallic pipelines, such as gas pipelines, have metallic trace wires

emplaced along the pipeline. If this wire is broken or corroded then it will not be possible to locate the utility beyond that point.

It is noted that underground utilities at the project site were identified using GPR and EUL methods only. Physical probing or other visual confirmation for the presence and/or identification of the suspected underground utilities was not performed. The identification of the utilities was based solely on above-ground observations; e.g., proximity to water valves and by observations made into manholes and vaults.

The results of the GeoView investigation are limited by the capabilities of the GPR and EUL methods at the project site. GeoView can make no warranties or representations of subsurface conditions beyond the capabilities of the geophysical methods. Results of this investigation should be used only to help anticipate where, what type and approximate depth of the underground utilities that will be encountered during demolition activities at the project site. All standard operating procedures typically employed for utility-removal projects should be followed.



EXPLANATION

- UNDERGROUND ELECTRICAL LINE
- UNDERGROUND UNKNOWN LINE
- UNDERGROUND WATER LINE
- UNDERGROUND COMMUNICATION LINE
- UNDERGROUND GAS LINE
- UNDERGROUND NITROGEN LINE
- MONITORING WELL

N

0 50'

SCALE: 1"=50' APPROXIMATE

GeoView

FIGURE 1

SITE MAP SHOWING RESULTS OF GEOPHYSICAL INVESTIGATION

HMF NORTH SITE
5TH STREET SE 7 G AVENUE E
MERRITT ISLAND, BREVARD COUNTY, FLORIDA

TETRA TECH, INC.
PITTSBURGH, PENNSYLVANIA

PROJECT: 30625
DATE: 11/26/19

Appendix 1
Description of Geophysical Methods

Ground Penetrating Radar

Ground Penetrating Radar (GPR) consists of a set of integrated electronic components which transmits high frequency (250 to 1,000 megahertz [MHz]) electromagnetic waves into the ground and records the energy reflected back to the ground surface. The GPR system consists of an antenna, which serves as both a transmitter and receiver, and a profiling recorder that both processes the incoming signal and provides a graphic display of the data. The GPR data can be reviewed real time on the system's computer screen or recorded on the hard drive for later review. GeoView uses a Mala GPR system. Underground utility surveys are typically conducted using either a 500 or 250 MHz antenna.

A GPR survey provides a graphic cross-sectional view of subsurface conditions. This cross-sectional view is created from the reflections of repetitive short-duration electromagnetic (EM) waves which are generated as the antenna is pulled across the ground surface. The reflections occur at the subsurface contacts between materials with differing electrical properties. The electrical property contrast that causes the reflections is the dielectric permittivity which is directly related to conductivity of a material. The GPR method is commonly used to identify such targets as underground utilities, underground storage tanks or drums, buried debris, voids or geological features.

The greater the electrical contrast between the surrounding earth materials and target of interest, the greater the amplitude of the reflected return signal. Unless the buried object is metal, only part of the signal energy will be reflected back to the antenna with the remaining portion of the signal continuing to propagate downward to be reflected by deeper features. If there is little or no electrical contrast between the target interest and surrounding earth materials it will be very difficult if not impossible to identify the object using GPR. A typical target difficult to identify during a GPR survey would be a water-filled PVC pipe buried below the water table.

The depth of penetration of the GPR signal is very site specific and is controlled by two primary factors: subsurface soil conditions and selected antenna frequency. The GPR signal is attenuated (absorbed) as is passes through earth materials. As the energy of the GPR signal is diminished due to attenuation, the energy of the reflected waves is reduced, eventually to the level that they can no longer be resolved by the GPR system. The more conductive the earth materials,

the greater the GPR signal attenuation, hence a reduction in signal penetration depth. In Florida, the typical soil conditions which severely limit GPR signal penetration are near-surface clay and organic materials.

The depth of penetration of the GPR signal is also reduced as the antenna frequency is increased. However, as antenna frequency is increased the resolution of the GPR data is improved. Therefore, when designing a GPR survey a tradeoff is made between the required depth of penetration and desired resolution of the data. As a rule, the highest frequency antenna that will still provide the desired maximum depth of penetration should be used.

A GPR survey is conducted along survey lines (transects) which are measured paths along which the GPR antenna is moved. Electronic marks are placed in the data by the operator at designated points along the GPR transects. These marks allow for a correlation between the GPR data and the position of the GPR antenna on the ground.

For underground utility surveys, the GPR investigation is conducted along a set of perpendicularly orientated transects. The survey is conducted in two directions because the definitive GPR signal response associated with an underground utility is only obtained when the GPR antenna is passed perpendicular to the long axis of the utility. Spacing between the transects typically ranges from 2.5 to 20 feet depending upon the complexity of the configuration of the underground utilities. The location of the underground utilities is typically painted on the ground surface and/or provided on a scaled map.

To determine the depth of an underground utility using GPR, the time of travel of the GPR signal between the utility and the ground surface is divided by the velocity of the GPR signal. The velocity of the GPR signal can be obtained either from published tables of velocities for the type of soil underlying the site or by directly calibrating the GPR system on site by using utilities with known depths. The accuracy of GPR-derived utility depths typically ranges from 10-25 percent of the total depth.

Conventional Utility Locating

A Pipehorn 800 H and RD 8100 System is used by GeoView to locate underground utilities using conventional means. The system consists of a dual-function receiver and transmitter. The receiver can be operated in two modes: active and passive. In the passive mode the receiver detects the presence of underground utilities that are energized by a 60 Hertz cycle current. These utilities can either be those actually carrying electrical power or those utilities that are both

metallic and sufficiently close to the electrical lines to have an electrical field induced within them.

In the active mode, an electrical current is deliberately induced into the utility by the transmitter. The frequency of this field can be varied from 1 to 80 Hertz. The electrical field is induced using a transmitter which is either directly attached to the utility, placed on or above the utility or attached to an induction coil which is placed around the utility. Depths of underground utilities can be determined when the EM equipment is being used in the active mode. Depths are typically accurate to within 10 percent of the total utility depth.

On Site Measurements

The measurements that were collected and used to create the site map were made using a Trimble Geo7x GPS system.

APPENDIX D

AIR SPARGE SYSTEM AND WELL INSTALLATION RECORDS

30 N. TROPICAL TRL, STE B, MERRITT ISLAND, FL 32953 LB6575
klsinc@cfl.rr.com KLS#2019121

TETRA TECH

HMF, KENNEDY SPACE CENTER

POINT #	NORTHING (FT)	EASTING (FT)	NORTHING (M)	EASTING (M)	TOC EL	GND EL	DESC	ID
2028	1520301.10	771334.60	463388.706	235103.259	6.35	2.7	MW	MW-0027
2027	1520301.90	771329.53	463388.949	235101.713	6.18	2.7	MW	MW-0028
2022	1520267.19	771389.75	463378.371	235120.068	5.60	5.8	MW	MW-0029
2023	1520268.20	771387.44	463378.680	235119.366	5.70	5.8	MW	MW-0030
2024	1520269.20	771384.91	463378.983	235118.594	5.65	5.8	MW	MW-0031
2025	1520269.87	771382.23	463379.189	235117.776	5.50	5.8	MW	MW-0032
2026	1520270.83	771379.91	463379.480	235117.068	5.61	5.8	MW	MW-0033
2017	1520251.05	771410.68	463373.451	235126.449	6.12	5.8	MW	MW-0034
2018	1520251.07	771407.71	463373.458	235125.542	6.09	5.8	MW	MW-0035
2016	1520197.94	771537.70	463357.264	235165.163	3.90	4.0	MW	MW-0036
2002	1520126.19	771794.84	463335.393	235243.541	6.09	2.0	MW	MW-0037
2001	1520129.18	771795.62	463336.305	235243.778	5.90	2.0	MW	MW-0038
2008	1520272.50	771590.03	463379.988	235181.113	5.69	5.9	MW	MW-0039
2007	1520269.29	771589.92	463379.011	235181.081	5.76	5.9	MW	MW-0040
2013	1520280.23	771502.27	463382.346	235154.364	4.89	5.0	MW	MW-0041
2012	1520275.86	771504.66	463381.014	235155.093	4.88	5.0	MW	MW-0042
2011	1520320.42	771531.20	463394.595	235163.181	4.76	4.9	MW	MW-0043
2010	1520320.11	771535.05	463394.500	235164.354	4.77	4.9	MW	MW-0044
2003	1520138.91	771694.55	463339.272	235212.970	5.95	2.6	MW	MW-0047
2019	1520216.18	771393.74	463362.822	235121.284	7.02	3.5	MW	MW-0045
2004	1520137.19	771696.35	463338.748	235213.519	6.03	2.6	MW	MW-0046

SURVEYOR'S NOTES

1. NEWLY INSTALLED MONITORING WELLS.
2. ELEVATIONS DEPICTED HEREON ARE REFERENCED TO THE NORTH AMERICA

VERTICAL DATUM OF 1988 AND ARE BASED ON UNITED STATES ARMY CORP OF ENGINEERS BRASS PLUGS "C-15-3, 9-13-63" AND "1-1, 5-5-64" HAVING ELEVATIONS OF 7.38 FEET AND 8.58 FEET RESPECTIVELY.

3. COORDINATES DEPICTED HEREON ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, 1983 DATUM, AND ARE BASED ON "C-15-3, 9-13-63" AND "1-1, 5-5-64" HAVING COORDINATES OF X=770594.64, Y=1517675.78 & X=770622.65, Y=1523070.49 RESPECTIVELY.

4. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT(S)

ABBREVIATIONS

FT=	FEET	GND=	GROUND
M=	METERS	DESC=	DESCRIPTION
TOC=	TOP OF CASING	ID=	IDENTIFICATION
EL=	ELEVATION		

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	27-Jan
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM	X	Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	X
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:15	CN onsite, DF meeting straw wattle delivery at badging; morning traffic backed up due to SpaceX launch this morning, setting up for tailgate
7:45	WC, KH, DF escorted straw wattles delivery truck onsite; KH on Skidsteer (skid) offloading 6 pallets with DF spotting
8:15	DF, KH escorting straw truck to POL to offload other 4 pallets with Kubota
8:45	DF and KH return, all review and sign off on SSHASP
9:45	DF and KH offsite to LC34 for supplies; CS, SR and drill crew onsite completing well installations; CN and WC marking trench lines
10:30	DF and KH drop trailer offsite to retrieve spill pallets for CHP/POL
11:15	AM onsite
11:30	RO onsite
11:50	RO and AM offsite
11:55	WC and KH offsite for lunch, KH housekeeping
12:10	Drill crew and CS offsite, SR completing air sparge well inventory
12:30	WC and KH return; WC on DOOSAN 85 (mini) excavating 2-feet from area for manifold trailer #2; KH on skid removing and stockpiling soils in Zone 8
1:00	Drillers return, drill rig broke down
1:45	RL onsite briefly
2:00	RL offsite; KH on skid placing pallet of wattles in 4x4 for CN and DF to lay out
3:00	Wattles laid out north of center swale, KH on skid grading bottom of Manifold 2 for rack construction
3:30	WC on mini trenching Zone 7, working west to east
4:00	All offsite, CN and DF to CN's house to drop CN's truck off, CN drove DF back to site in work truck
5:30	All offsite

Comment:

-- Heavy equipment was mobilized on 3/23/2020

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Temperature Range: 43 -- 68 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	28-Jan
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	X
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:10	CN at Home Depot for supplies (Unistrut and concrete)
7:30	CN to site, DF, WC, RL onsite; WC on DOOSAN 85 (mini), resumes trenching Zone 7, RL spotting
7:50	CN onsite
8:15	KH onsite
8:30	Tailgate meeting
8:45	WC and RL resume, DF and KH setting string level for Manifold 2 pipe rack installation
10:15	DF and KH mixing concrete to set Unistrut uprights
11:15	CN offsite to escort Frac tank from Badging to POL
11:30	KH offsite on Kubota to clear spot for drums @ CHP; DF offsite to LC34 for supplies
12:00	All return to HMFN
12:10	WC, RL, KH, DF offsite for lunch
12:50	WL, RL, KH. DF return; WC and RL resume; KH installing rack and T-post boundary along north side and hanging "Open Excavation" signage
2:30	During trenching it was discovered that AS0070 was potentially drilled through MW007 which was buried. CS investigated and felt the MW is full of sand/silt to 5' to 6' below grade, also asked AM to check RIS to confirm MW number, depth, and last time sampled
4:00	WC, KH, RL, DF offsite
4:15	RO onsite, CN talked and briefed
5:00	CN and RO offsite

Comment:

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Temperature Range: 55 -- 72 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	29-Jan
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	X
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite
Drill Pro LLC	Jared Link, head driller	JL	X				
Drill Pro LLC	Malcolm Smith, driller	MS	X				
Drill Pro LLC	Gamalier Rivera, driller	GR	X				

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, DF, WC, RL, KH onsite
7:45	Tailgate meeting, discussed warning signal from 10 am yesterday, possibly due to earthquake off coast; combination of trench depth plus spoils height can not exceed 4-feet
8:15	WC on DOOSAN 85 (mini), resumes trenching, moving from Zone 7 to 6, still working west to east, with RL spotting
9:06	All watch Falcon 9 launch
9:10	All resume, CN assisting DF and KH
11:30	Pipe racks constructed
12:10	WC, RL, KH offsite for lunch
12:30	DF offsite to LC34 to work on HMFN manifold trailer, CN reviewing CHP trenching layout and providing comments to AM via Skype
1:00	WC, RL, KH return; WC on mini resumes trenching with KH spotting; RL offsite to LC34 to assist DF
2:30	Drill crew and CS complete final AS well and demobilize to POL
3:00	CN notifies Ryan Purdy of Synergy that a mechanic has not been onsite yet for Skidsteer float issue, to place fire extinguishers in mini and skid, and 4X4 not going into 4WD
4:00	All offsite

Comment:

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Temperature Range: 55 -- 70 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	30-Jan
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jon Slifko	Synergy Mechanic	JS	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD	X	Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	X
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	WC, RL, KH, DF onsite
7:45	CN stopped for ice, then dropped off water, Propel, and ice to MB at CHP
8:00	CN onsite, Tailgate meeting, discussing wearing proper PPE for the job
8:15	DF and RL offsite to LC34, CN inspecting trenches, all okay, KH and WC cutting off air sparge (AS) well stickups and recapping so DOOSAN 85 (mini) can straddle them as it trenches, Synergy mechanic onsite working on Skidsteer float and fixing the 4X4's 4WD
8:30	CS onsite to pick up KH for former Headquarters building (HQ) PCB sampling
8:45	GC onsite briefly, CN briefed until 8:50
9:00	WC on mini resumes trenching, now working east across site connecting Zone 8 to Manifold 2 location, CN spotting;
11:00	JS of Synergy offsite
12:20	CN and WC offsite for lunch
12:50	WC and CN to HQ to drop KH lunch, stayed to discuss remediation methodologies with MD, Anne Chrest (AC), and RO as CS and KH completed sampling and decon; met Ralph Kennedy of Maverick
1:15	AC and RO drive to south side of HQ to watch Universal Engineering Sciences (UES) collect samples
1:30	WC and KH return to HMFN and resume trenching; CS to POL to prep HQ sample cooler; CN and MD walk perimeter of HQ; met Bill of Maverick and Margaret of UES; Bill said samples would be dumped out of Ziploc and recollected tomorrow with proper equipment and decon
2:30	MD drops CN off at HMFN
4:00	WC and KH offsite
4:15	CN offsite

Comment:

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Temperature Range: 58 -- 70 ^{0} F

Weather Conditions: Cloudy, windy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	31-Jan
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	X
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, DF, WC, KH onsite, Tailgate meeting discussing slides 5 of 10 of National Safety Council's website slide show
7:45	WC on DOOSAN 85 (mini) resumes trenching Zone 8 with KH spotting; CN and DF adjusting trench alignments
8:30	Issue with swing button on joystick of mini; DF, WC, and KH repairing; CN reviewing POL electrical design
9:15	WC resumes trenching
11:00	Call with RO regarding all AS designs; HMFN is BOSS-approved and they are seeking NASA approval; RO will wait and send POL design in next week to clarify our spacing question; BOSS is still working on outage and will likely plan for a weekend due to downstream effects
12:00	All offsite for lunch
1:00	All returned; RL onsite unloading supplies, WC resumes trenching in Zone 6 from west to east with KH spotting
1:30	RL offsite; DF offsite to LC34 for pipe reel and supplies
3:15	CS onsite with drill crew to demobilize drums and concrete mixer, DF returns with pipe reel and HDPE piping spools, KH on skid off-loading piping and reel
3:35	CS and drillers offsite
4:00	WC and KH offsite
4:15	CN and DF offsite

Comment:

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Temperature Range: 59 -- 79 ^{0} F

Weather Conditions: Cloudy to partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	3-Feb
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	DF, WC, KH, RL onsite setting up to deploy pipe and inspecting equipment
7:45	CN stops for ice
7:50	CN onsite, Tailgate meeting to discuss slips, trips, falls, mud, open trenches, uneven terrain
8:15	WC on DOOSAN 85 (mini), resumes trenching in Zones 6 and 9, working from south side to east side with RL spotting; DF and KH marked pipe rack with spacing for racking pipe
8:45	DF offisite to CHP to meet Dig Police for step-out clearance
9:00	CN on SE weekly call
9:20	DF returns
9:45	DF and KH begin deploying and racking 1-inch HDPE pipe in Zones 2 and 7
10:30	CN assisting DF and KH
12:15	All offsite for lunch; DF to CRCA and LC34 to restart systems
1:00	All return and resume
1:15	DF returns
4:00	WC, RL, KH offsite; approximately 5,500 LF of 1-inch HDPE deployed in Zones 2, 6, 7, and 9
4:15	DF offsite
4:45	CN offsite

Comment:

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Temperature Range: 48 -- 75 ^{0} F

Weather Conditions: Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	4-Feb
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, DF, WC, KH, and RL onsite, Tailgate meeting discussing measurement of pace and distance covered deploying piping
7:45	WC and KH greasing and inspecting DOOSAN 85 (mini) and Skidsteer (skid)
8:00	WC on mini, resumes trenching in Zone 8 with RL spotting; CN, DF, KH resume deploying HDPE piping in Zones 6, 8, and 9
10:30	WC completes trenching for Manifold #2, begins filling trenches for placement of warning tape and wire, RL leveling and backfilling
10:45	1-inch piping for Manifold #2 complete, additional approximate 3,500 feet today; CN and DF housekeeping, KH on skid moving pipe reel and excess piping back to lay down, then placing a pallet of straw wattles on south side of swale
12:00	Call from MD and Headquarters Epoch to discuss the KSC former Headquarters Building (HQ) schedule
12:15	CN, WC, KH, RL offsite to lunch, DF offsite to LC34
1:15	CN, WC, KH, RL return
1:30	RL offsite to LC34, WC on mini, resumes backfilling, KH raking and leveling
2:00	CN call with DF over parts delivery; DF is informed HDPE transitions should arrive late this week
2:30	CN has WC begin excavating box for Manifold #1; CN and KH laying out straw wattles around south side of swale
3:30	KH in skid moving and stockpiling Manifold #1 spoils
3:50	Skid showing error code, CN texting Pat Davis of Synergy
4:00	WC and KH offsite; RO onsite, CN briefs
4:30	CN offsite, texts with CH regarding IDW and UST sampling; call with AM regarding the same; texts with DW regarding 1 pm Space conference tomorrow; stopped at Home Depot for Unistrut, concrete, PVC cutters, post hole digger, stopped at BJ's for fuel
6:00	CN home, continuing texts with CH and MS

Comment:

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Temperature Range: 55 -- 76 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	5-Feb
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jon Slifko	Synergy Mechanic	JS	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC	X			

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	Text from Joey Herreau (JH) that there is no badge in system for him, asked him to check with AM to see if Dinh Vo confirmed submittal, call to CS to have him set MOT up at CHP for MB
7:15	CN stopped for ice
7:20	CN stopped at CHP to discuss schedule and order of sampling with MB and drillers; they need MOT along C Avenue first thing
7:30	CN to POL and assists CS with loading traffic cones and showing him MOT plan, also discussed HMFN IDW and underground storage tank (UST) sampling, WC and KH onsite at HMFN
7:35	JS, the Synergy mechanic, is onsite at HMFN for Skidsteer (skid)
7:50	CN onsite at HMFN, Tailgate meeting
8:15	CN inspects trenches; KH gathering supplies for Rack #1 construction; WC on DOOSAN 85 (mini), resumes excavating box for Rack #1
9:00	DF onsite, DF assists CN with cutting Unistrut and dropping off supplies
10:00	DF offsite
10:30	CN KH erecting Rack #1; WC begins trenching to the east
11:15	GC onsite, asked for Operator Qualifications for Drill Rigs spreadsheet
11:45	GC offsite
12:00	CN, WC,KH offsite
12:45	CN, WC, KH return
1:00	WC resumes trenching, CN on Space and Missile Launch OPS call
2:00	CN and KH placing concrete in rack post holes and erecting the second rack
2:30	Synergy onsite to swap out skid and 4X4, however 4X4 won't go in forward gear and was rejected
3:30	Rack #1 complete
4:00	All offsite
4:15	CN stopped at POL to ask CS to contact Drill Pro for skid operator qualifications memo/letter or spreadsheet

Comment:

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Temperature Range: 63 -- 81 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	6-Feb
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN at KSCRT meeting, DF, WC, RL, KH onsite at HMFN, Tailgate meeting
7:45	WC on DOOSAN 85 (mini), resumes trenching in Zones 1 and 4; KH and RL prepare to install tees and weld HDPE piping in Zone 6
8:15	RL spotting for WC; DF and KH offsite to pick up parts delivered at Tiki Shack
9:15	DF and KH return; RL and KH installing tees
11:30	WC, KH, RL offsite for lunch
1:00	All plus CN return to site, WC resumes trenching, moving into Zone 5; CN, KH, and RL conduct housekeeping and putting away or strapping all loose articles due to pending storm this evening; DF offsite to LC34 to offload and inventory parts delivery; supplier incorrectly provided 2-inch HDPE to brass, male X male transitions rather than socket X female thread, supplier to provide couplers at their cost
3:00	KH and RL resume installing tees
3:15	DF returns to site
4:00	WC and KH offsite, CN emailing to get driller's Skidsteer (skid) operator qualifications per GC's request; POL electrical design; and HMFN IDW sampling
5:00	CN and DF offsite
5:15	CN checks on CHP and POL sites, then offsite

Comment:

-- 20 tees installed

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Temperature Range: 71 -- 84 ^{0} F

Weather Conditions: Cloudy, breezy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	7-Feb
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:20	CN stopped for ice
7:30	CN, DF, WC, KH onsite; Tailgate meeting discussing that it is too wet to work in trenches; going to LC34 to assemble tees and manifold trailer
8:00	DF and KH to LC34 to begin parts assembly; CN and WC to former Headquarters Building (HQ) to discuss excavation strategies and walk site
9:00	WC offsite to LC34, CN call to Ryan Purdy for HQ scrape equipment costs, Ralph Kennedy of Maverick pulled up, asked us to sign in when around HQ (no fencing or signage) and asked CN some questions about the HQ TSCA dig; CN informed him that we needed all power/electric off and removed from both locations D and E before we can start (no phasing due to such a small project)
9:45	CN to LC34
10:00	CN at LC34
11:45	All offsite for lunch
12:45	All return, DF, WC, KH resume
1:15	CN emails with Diano and Soltis concerning HQ SSHASP requirements
1:45	CN providing weekly progress bullets to CH
2:00	CN assisting others with parts/trailer assembly
4:00	All offsite

Comment:

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Temperature Range: 60 -- 75 ^{0} F

Weather Conditions: Cloudy, breezy, O/N Rain 1/2"

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	10-Feb
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	X
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	X
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN stopped for ice, DF, WC, RL, KH onsite
7:45	CN onsite, Tailgate
8:15	WC resumes trenching; RL and KH installing tees; CN and DF walking Zone E and trailer area and discussing deployment of 2-inch HDPE
9:00	CN on SE Weekly call
9:15	DF offsite
9:30	GC and John McCoy (new safety rep.) onsite briefly, offsite @ 9:40
10:15	MB onsite assisting RL and KH
10:30	CS onsite
10:45	CS and KH offsite to former Headquarters building (HQ) for additional sampling; CN assisting RL and MB
12:00	All offsite for lunch
1:00	RL and MB return and resume, CN and WC to cable shop on 4th Street to look for larger diameter steel reel for 2-inch piping deployment
1:15	WC and CN return to site, DF onsite with Kubota
1:30	WC mowing areas east of M7-1011
2:00	CN on call with MS, DW, AW about HQ cost estimate
2:15	DF and WC offsite to retrieve 8-foot diameter steel reel from cable shop
3:00	DF and WC return, CN on call with Matt Soltis about HQ SSHASP IH RTCs
4:00	WC, RL, MB offsite, CN and DF measuring and discussing erection of 2-inch pipe deployment reel
5:00	CN and DF offsite

Comment:

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Temperature Range: 69 -- 80 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	11-Feb
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN and RL onsite; RL prepping for tee installation
8:30	WC and KH onsite, Tailgate meeting
8:45	CN and WC paint trench line and re-marking utilities from Zone 5 to the trailer location; WC trenching; RL and KH resume installing tees
9;45	RL offsite to retrieve mud boots for he and KH, KH offsite to LC34 to retrieve two sump pumps and hoses, CN housekeeping
10:15	WC severs unmarked communication line buried at 2-4-inches bls; nobody currently in shop to check with; CN told WC to proceed
10:25	WC severs second unmarked communication line; CN call to JM who tells CN to call Josh Ballew @ 321-403-4461 to verify if communication lines were live, CN left voicemail for Josh
10:30	RL and KH return and resume installing tees
10:55	WC severs third unmarked line, assumed to be low voltage, CN call to JM to come check out before we proceed
11:00	WC on skid moving pallet of 1-inch HDPE spools to Manifold Rack #1 and moving straw wattles to trailer area for CN to lay out
11:30	CN and WC laying out straw wattles
11:45	DF onsite dropping supplies, marking Manifold #1 rack
12:10	All offsite for lunch
1:10	All return; RL and KH resume installing tees; WC on DOOSAN 85 (mini) half backfilling trenches in Zones 6, 8, and 9
2:00	CN call with MS, DW, AW regarding former Headquarters building (HQ) scrape cost comparison of 5-ft. vs.10-ft. sampling
3:15	CN and WC discuss HQ production rates
3:30	DF onsite with supplies
4:00	DF, WC, RL, KH offsite, CN housekeeping
4:15	RO onsite, CN brief
4:45	All offsite

Comment:

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Temperature Range: 73 -- 81 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	12-Feb
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Pat Davis	Synergy Representative	PD	X			
Ryan Purdy	Synergy Representative	RP	X			
Jon Slifko	Synergy Mechanic	JS	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	X
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN, DF, WC onsite, Tailgate meeting
8:00	RL onsite
8:15	AG of Dig Police onsite; CN walks and talks AG through the events yesterday, DF and RL placing warning tape and marking wire in trenches while WC on DOOSAN 85 (mini) places backfill
8:45	AG locating area for trailer and area SE of M7-1011
9:15	Josh Ballew and John Wolf of Communications (Comm) onsite to investigate. Josh states that both comm lines need to be replaced because one line of each was being used. They will abandon fiber optic line that was cut. Josh sending crew to repair comm lines and calling in to duty office; offsite 9:40.
9:50	AG offsite; Shawn, Mike, and Robert of Communications Shop onsite to repair one comm line needed rather than both (Josh called crew to tell them the other line was not needed and will be abandoned in place; CN briefed the facility manager, Annie, and introduced her to Comm guys; skid needs repair due to track sticking; RL called Synergy
10:30	Annie offsite; CN re-marking utilities along roadway
11:15	DF returns to site; call from JM to discuss notes AG wrote on dig permit
11:30	Shawn, Mike, Robert offsite for lunch
1:00	CN, WC, RL, DF return; Comm guys already on site continuing repair
1:15	CN offsite to CHP to assist MB open monitoring wells
1:45	PD and RP of Synergy onsite
2:00	CN returns to site
2:20	PD and RP offsite; RO onsite, CN briefs and both walk over to comm repair as CN updated RO of day's activities (RE: damaged utilities), JS, the Synergy mechanic, onsite to repair skid
3:00	Comm guys offsite; CN tries to get JS to return (just left), due to skid not being fixed, sent text to PD
3:10	CN, DF, RO deploying 1-inch HDPE in Zone 1
4:00	All offsite, CN calls to MS and CH regarding utilities; call from MD and Rosaly questioning trenching and actions; calls with CS, DF, MS, and MO regarding protocols; searched SSHASP and only mentions locations, not what to do if utility contacted, dig permit states to call ISC Duty office, CN has always called dig police due to so many dead abandoned-in-place utilities on the Space Center, informed MD and MS
6:20	End of day

Comment:

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Temperature Range: 73 -- 85 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	13-Feb
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jon Slifko	Synergy Mechanic	JS	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:35	CN stops for ice
7:45	CN, DF, WC, KH onsite; Tailgate meeting discussing series of events leading up to and following comm line strikes
8:15	CN offsite to Dig Police office to discuss event with JM and to clarify note AG wrote on dig permit; JM edited note
8:45	GC onsite; DF called CN and placed GC on phone; GC would like NASA Mishap Report filled out; emailing to CN; CN en route to HMFN at 9:00
9:15	CN returns to site and inspects trenches, all okay; WC on DOOSAN 85 (mini) and KH on Skidsteer (skid) placing backfill in Zone 8
9:45	JS, the Synergy mechanic, onsite for skid repair
10:00	CN on Cocoa weekly call
10:30	CN responding to MD email requesting root cause by forwarding to Matt Soltis with timeline of the events; DF offsite
10:55	Call from GC regarding the email he just sent requesting the NASA Mishap Report and requesting a verbal description of events
11:20	CN resumes email response
12:10	JS of Synergy offsite
12:30	WC and KH offsite; a BOSS survey crew is onsite to survey the utility cuts
1:30	WC and KH return. WC resumes backfilling Zone 8
1:45	GC onsite briefly with additional questions regarding comm strike
2:00	CN responds to Headquarters email from Anne Chrest regarding splitting locations 2D and 2E to separate projects (to MS, DW, AW)
2:15	CN and KH deploying 1-inch HDPE to complete Zone 1
3:00	KH housekeeping; CN on root cause analysis call with Matt Soltis
4:00	WC and KH offsite
4:15	CN offsite

Comment:

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Temperature Range: 75 -- 85 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	14-Feb
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	CN stops for ice
7:10	CN onsite
7:30	DF, RL, WC, KH onsite; Tailgate meeting, more discussion of utility strikes
8:00	DF offsite; RL and KH setting up to install tees adjacent to the swale in the SE corner of Zone 6; WC on DOOSAN 85 (mini) assisting by bailing water
8:30	CN resumes call with Matt Soltis regarding the root cause
9:45	Light rains begin
10:00	CN on call with Chris Pike, AM, and Jen Buel regarding CHP
11:00	CN checking on crew progress
11:15	Call with MS regarding root cause progress
11:30	GC onsite briefly, mentioned email request for dig permit and GPR report
12:30	All offsite for lunch
1:30	All return; third Skidsteer (skid) had been dropped off by Synergy to replace second one, CN texts Pat Davis and Ryan Purdy of Synergy due to failed backup alarm and the fire extinguisher
1:45	WC on mini placing 1/2 backfill in trenches in Zones 6 and 7 for placement of warning tape and wire; RL and KH on skid placing backfill and grading areas where tape and wire have been placed; CN call to AM to reconfigure AS well layout at CHP to remove less berm and relocate manifold trailer prior to asking Becky Bolt for meeting at site
3:00	DF offsite
4:00	WC, RL, KH offsite
4:30	CN offsite

Comment:

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Temperature Range: 73 -- 85 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	17-Feb
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:35	CN stops for ice
7:45	CN, DF, WC, KH onsite; Tailgate meeting. Site too wet to work, making today a parts assembly day at LC34.
8:00	All inspect site, trenches, erosion and sediment controls.
8:15	RL onsite
8:30	All offsite; CN, WC, KH to LC34, DF to Home Depot, RL to CRCA and 516
8:45	WC and KH assembling parts
9:00	CN on SE weekly call
9:45	CN corresponding with Matt Soltis to try to resume root cause discussions
10:00	DF onsite at LC34
10:30	CN on HMFN proposal call with MS, Mark Jonnet, Chris Pike, Jen Buel, Alex Murphy, and Andrew Walters
11:00	CN on EGS monthly management call
12:15	WC and KH offsite to lunch
12:30	CN offsite to lunch; met WC and KH on way, café is closed; WC and KH heading off base for lunch, CN returns to LC34
1:00	CN offsite to have work truck serviced
1:45	WC and KH return to LC34 to resume assembling parts
3:30	WC and KH offsite

Comment:

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Temperature Range: 71 -- 80 ^{0} F

Weather Conditions: Partly cloudy, Overnight rain ~ 2-inches

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	18-Feb
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN, WC, KH onsite; Tailgate meeting and inspect site
8:00	RL onsite; RL and KH setting up pumps to drain trenches and Manifold #1 area; WC on DOOSAN 85 (mini) placing backfill in trench
8:30	Call from MD to discuss former Headquarters Building (HQ) sampling and root cause progress
8:45	GC onsite, tours a portion of site, CN briefs
9:05	GC offsite
9:40	DF onsite to drop off supplies
10:00	DF offsite
11:00	RL and KH deploying 1-inch HDPE in Zone 4
12:30	All offsite for lunch
1:30	All return and resume
3:00	CN on call with Matt Soltis to review root cause write-up
4:00	WC, RL, KH offsite; approximately 1500 LF pipe laid out
4:15	RO onsite, CN briefs
4:30	All offsite

Comment:

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Temperature Range: 66 -- 80 ^{0} F

Weather Conditions: Clear

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	19-Feb
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, WC, KH onsite
7:45	RL onsite; Tailgate meeting
8:15	WC on DOOSAN 85 (mini) moves to Zones 1 and 4 to place backfill in trenches halfway for tape and wire placement; RL and KH setting up pumps to drain trenches again to resume 1-inch HDPE piping in Zone 5
9:00	DF onsite, CN briefs
9:15	CN offsite to CHP to meet Becky Bolt (BB) to make a plan to remove a portion of the eastern berm and protect the gopher tortoises
9:30	CN and BB onsite at CHP; CN will have area trimmed with a weed-eater and Kugelmann is to be staking on Thursday and Friday; BB will scope the burrows on east berm on Friday; if inhabited, they will be flagged to check again, if not, they will be collapsed; soil movement may be in "safe areas" and spread on existing berm surfaces; Dinh Vo onsite at 9:45, CN and BB briefed
10:00	All offsite CHP; CN returns to HMFN
10:15	CN inspects trenches with KH
10:30	GC onsite briefly
11:00	CN assisting RL and KH
12:30	Complete laying pipe in Zone 5, approximately 2,800 LF; all offsite for lunch
1:30	All return to site; RL and KH begin pumping water and installing tees at west end of Zone 1 working east; WC on DOOSAN 85 (mini), resumes filling trenches halfway
2:00	CN on call with Matt Soltis regarding root cause
4:00	WC, RL, KH offsite
4:15	CN offsite
4:45	CN stops to pick up project signs at Accuprint, but they closed early

Comment:

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Temperature Range: 71 -- 85 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	20-Feb
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN, WC, KH, DF, RL onsite; DF fueling equipment, WC assisting; RL and KH prepping to resume pumping water and installing tees
8:00	Tailgate meeting; discuss status of root cause
8:30	RL and KH installing tees; WC on DOOSAN 85 (mini) working along with them to continue placing backfill
9:30	DF onsite
10:00	CN on Cocoa weekly call
10:30	KH offsite to meet the sample courier at badging
11:00	CN on EGS-NUS Bi-weekly call; KH returns
12:15	All offsite for lunch
1:15	All return to site; CN, WC, KH laying tape and wire in Zone 1; RL moving pump
2:00	RL and KH resume installing tees; WC placing backfill to grade in Zone 1
4:00	All offsite; Zone 1 tees completed

Comment:

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Temperature Range: 72 -- 81 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	21-Feb
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN onsite, unloading signs in trailer, hitching truck to trailer and loading skidsteer to move it to CHP
8:30	KH onsite assisting
9:00	KH on Kubota driving it to CHP; DF onsite with straps for skidsteer (skid)
9:15	CN, KH, DF to CHP
9:30	Becky Bolt (BB) onsite flagging gopher tortoise burrows; KH weed eating area of berm to be removed
9:45	Mason French (MF) of Kugelmann onsite at CHP surveying/staking air sparge wells
10:00	BB scoping burrows; all clear for berm movement
10:30	DF offsite; KH on skid begins moving berm soil and spreading it along the inside berm slopes, CN spotting to observe one burrow with BB to allow her to occasionally re-scope until the end of the burrow was reached
11:30	BB offsite
11:45	MF offsite to lunch
12:15	CN and KH offsite to lunch; ran into RO while stopping by HMFN, CN briefed
12:30	MF returns and resumes
1:15	CN and KH return; KH resumes moving berm soil
2:30	Dave Kugelmann onsite at CHP to assist MF
3:30	Berm movement complete; CN and KH offsite to return skid to HMFN
3:45	Drop off skid; CN and KH offsite
4:00	Drop trailer and reel at WC's for DF to work on tomorrow
4:30	End of day

Comment:

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Temperature Range: 52 -- 55 ^{0} F

Weather Conditions: Cloudy and rainy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	24-Feb
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	WC onsite
7:45	CN onsite; KH at Grainger in Melbourne picking up supplies; Tailgate meeting
8:00	CN and WC walk site to plan week, inspect trenches
8:30	WC on DOOSAN 85 (mini), resumes placing backfill in Zones 1 and 4
9:00	CN on SE weekly call, KH onsite; setting up pumps to draw trench to allow tee installation to resume in Zone 5
9:45	CN and KH begin installing tees
12:00	AV onsite; CN briefs on day's activities
12:15	All offsite for lunch
1:15	All return to site, AV reviewing the SSHASP and signing off, CN and KH resume installing tees, WC on skid placing 1/2 backfill in trench, left open in Zone 4 as alternate route for 2-inch header line to Zone 10 if unable to schedule horizontal drillers
2:00	KH assisting WC placing tape and wire
2:15	KH resumes installing tees; AV now assisting, WC resumes placing backfill; CN housekeeping
3:00	WC offsite
3:30	DF onsite
4:00	All offsite

Comment:

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Temperature Range: 59 -- 70 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	25-Feb
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	X
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN call to KH to stop at CHP and drive Kubota to HMFN
7:45	CN, WC, KH, RL, AV onsite, Tailgate meeting
8:15	WC on DOOSAN 85 (mini) resumes placing backfill; RL, KH, and AV set up pumps to drain trench and resume installing tees
9:15	DF onsite; CN and DF discuss CHP stainless steel well parts and fittings
9:30	CN and DF on call with CP, CH, and AM discussing same subject; use galvanized, transition to 1-inch sooner, DF to sketch; find catalog cuts for parts
10:15	Tees complete; RL, KH, AV hand-shoveling section of trench that WC accidentally backfilled
10:30	WC re-excavating trench adjacent to 1-inch pipes for header; RL spotting; KH and AV installing rope fencing in trailer area
10:45	CN call with Roy Rushing of Trenchless Specialties to plan Thursday; KH and AV setting up 2-inch reel
11:00	CN assisting KH and AV
11:30	CN marking paths for trenching in Zone 3 and horizontal drilling
11:45	AG onsite to locate paths
12:30	All offsite for lunch
1:30	All return to site except RL; AG still onsite; AG discusses his findings with CN; AG offsite @ 1:45; WC resumes backfilling Zone 5; KH and AV resume placing second 500-ft. spool of 2-inch HDPE on reel
2:00	CN call to DF for portion of reel he cut off
2:15	DF onsite with piece of reel; all deploying two 2-inch HDPE lines from trailer area to trench where horizontal drillers will pull them beneath road and swales to Zones 3 and 10; WC begins trenching Zone10 with KH and AV spotting
4:00	RO onsite; CN briefs; WC, KH, AV offsite
4:30	CN, RO, DF offsite

Comment:

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Temperature Range: 65 -- 84 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	26-Feb
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	DF onsite with ice
7:30	WC, AV, RL onsite; Tailgate meeting and discussing to-do's: RL to backfill and grade with skid; WC on mini, AV, and KH to trench in Zone 10 and Zone 3, spotter at all times; DF hook-up Frac tank to drain per CH
8:00	KH onsite
8:30	Dig police onsite to clear Zone 3 but did not stop. DFcall to Dig Police at 9:00, they said Zone 3 is clear to excavate
10:00	Dinh Vo (DV) call to DF to meet at Pad 39A at 1 pm
11:00	Start trenching in Zone 3
12:00	Lunch-all
12:45	All resume, DF offsite to Pad 39A with DV; DV wants compressor restarted since trenches have been backfilled by SpaceX. When restarted compressor alarm "Overload fan motor". DF checked voltages at 277, 278, 277, then called Atlas to schedule a service
2:00	DF returns to HMFN; trenching complete. DF, AC, KH, and AV offsite to CCB to pull cabinets for use in HMFN Zones 3 and 10. DF call to Mark Jonnet to see if RO is okay with moving two cabinets for use at HMFN. RO had not talked with CH but is okay with using the cabinets.
3:00	DF calls Freese for roll-off ETA (not today), will be there by 11:00 tomorrow due to no liners
4:00	All depart, end of day

Comment:

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Temperature Range: 70 -- 80 ^{0} F

Weather Conditions: Cloudy, late afternoon rain

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	27-Feb
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite			Onsite
Kevin Pelkey	Trenchless Specialties, Inc	KP	X			
Abe Bratcher	Trenchless Specialties, Inc	AB	X			
Joey Czaja	Trenchless Specialties, Inc	JC	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD	X	Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, DF, WC, KH, RL, AV onsite; Tailgate meeting
7:50	Call from KP of Trenchless Specialties, Inc (TSI), crew at badging
8:00	KP, AB, JC onsite; CN briefs on JHA
8:15	TSI crew walk site with CN
8:30	TSI crew settling for 160-foot bore from Zone 3 to east of M7-1011; KH and AV setting up pump to drain trench in Zone 3 for drilling mud; RL on skid backfilling area of Zone 10 where drill rig will need to set up later
9:00	DF, KH, AV, and RL offsite to retrieve manifold cabinets from CCB
9:30	TSI crew begin 160-ft bore
11:30	Bore complete
11:15	DF, RL, KH, AV return; TSI prepares for pullback
11:30	MD, Anne Chrest (AC), and RO onsite, CN briefs
11:15	TSI begins pullback to pull two 2-inch pipes through the bore hole
12:00	MD, AC, RO offsite
12:15	TSI moves drill rig and RL fastens both 2-inch HDPE pipes to Skidsteer (skid) for WC to continue pulling until off reel; AV and CN spotting at reel
12:30	TSI offsite for lunch. CN and WC pull one 2-inch pipe an additional 100-feet to make sure it will reach Zone 10 on next TSI bore
12:45	All offsite for lunch
1:45	All return, TSI setting up to bore from Zone 10 under swale to Zone 3; CN, KH, AV posthole to find utilities in bore path; DF and RL offsite
2:30	WC on DOOSAN 85 (mini) excavating trench over utilities along bore path
3:00	TSI boring Zones 10 to 3
3:30	TSI pull back
3:40	TSI offsite, all housekeeping
3:55	RO onsite, CN brief
4:00	WC, KH, AV offsite; RO and CN offsite at 4:10

Comment:

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Temperature Range: 50 -- 68 ^{0} F

Weather Conditions: Clear

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	28-Feb
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, AV, WC, KH onsite; Tailgate meeting
8:00	WC on DOOSAN 85 (mini) cleaning out area for erection of Zone 10 rack; CN, KH, AV gathering supplies to erect rack
8:30	CN and AV erecting rack; KH offsite for fuel
9:00	KH returns and fuels mini
9:15	KH offsite to retrieve two bags concrete from CHP; WC excavating new trench in Zone 3 to allow 2-inch pipe to fall into place once pulled back toward the trailer area, CN spotting
9:30	KH and AV pouring concrete in rack post holes
10:00	RL onsite, begins deploying 1-inch HDPE pipe in Zone 10 and racking; KH on skid and AV preparing for 2-inch pull back to trailer
10:45	Pulling pipe into trench
11:15	All offsite for lunch
12:45	CN returns
1:00	WC, KH, RL, AV return, begin deploying 1-inch HDPE in Zone 10
2:00	Approximately 1500' pipe deployed; WC, KH, AV installing tees; RL offsite to work out PC issues; CN reviewing root cause analysis report
3:15	Zone 10 tees complete; all housekeeping
3:30	WC, KH, AV offsite
4:00	CN call from Matt Soltis regarding root cause
4:30	CN offsite

Comment:

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Temperature Range: 45 -- 61 ^{0} F

Weather Conditions: Clear

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	2-Mar
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7;30	CN, WC, KH onsite, Tailgate meeting
7:45	AV onsite
8;00	All walking area where five 2-inch HDPE header lines need to trench across the swale in the center of the site; moving straw wattles and marking utilities
8:30	GC onsite, CN brief
8:45	GC offsite
9:00	KH on skid placing soil across swale to both trench through and drive 4X4 across swale to deploy 2-inch piping, WC prepping to trench, AV spotting; CN on weekly call
9:45	CN assisting KH to set up 2-inch reel and spool
10:15	WC backfilling small branch of header trench with 2-inch lines to Zones 3 and 10; CN assisting with installing tape and wire
10:30	CN re-marking utilities in trailer area
10:45	WC on DOOSAN 85 (mini) resumes trenching to trailer area with AV and KH spotting
11:00	CN on call with Matt Soltis finalizing root causes
12:15	All offsite to lunch
1:15	All return; resume trenching/hand excavating to expose utilities, CN assisting
2:45	WC on mini half-backfilling Zone 10; CN, KH, and AV deploying and racking 2-inch HDPE piping for Zones 7 and 8 to Manifold #2 and second half of Zone 2 from split where tee is to be welded to Manifold #1
4:00	All offsite
4:30	CN offsite, stopped at CHP to check on CS
5:15	CN and CS offsite

Comment:

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Temperature Range: 55 -- 73 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	3-Mar
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	WC, KH, AV onsite
7:45	CN and RL onsite, Tailgate meeting
8:10	KH and AV installing tracing wire and caution tape in Zone 10
8:15	DF onsite, scoping two AS wells in Zone 10 prior to completing backfill
8:30	CN, KH, AV, RL deploying 2-inch HDPE to Manifold #2 for Zones 6, 9, and 2, and Manifold #1 for Zones 1, 4, and 5
10:15	WC completed backfilling Zone 10, proceeds to resume trench excavation in Zone 3
11:30	2-inch pipe deployed, approximately 2500 LF; CN, KH, AV, and RL welding tee in Zone 2 header line and coupler in Zone 10 header to add short section of pipe to reach trailer
12:15	All leaving site to lunch, but stop due to arrival of man-lift that is supposed to be delivered to office for training tomorrow; CN redirects delivery
12:30	All to lunch; call from AM that tractor is at badging to be escorted to move the frac tank from HMFN to CHP; CN call to DF to meet and escort
1:00	DF meets and escorts the tractor from the Badging Office to HMFN
1:30	All return to site; WC on DOOSAN 85 (mini) begins placing 1/2 backfill from sidewalk working way north to manifolds; KH, RL, AV complete welding 2-inch coupler and tee
2:00	CN offsite; KH, RL, AV erect pipe racks for trailer and Zone 3 cabinet
3:00	KH, RL, AV move silt sock to downslope side of Zone 10 upgradient of swale, cleaned off the road
4:00	All offsite

Comment:

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Temperature Range: 61 -- 75 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	5-Mar
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN and DF onsite
7:45	KH and AV onsite; Tailgate meeting
8:00	DF offsite; CN, KH, AV setting up to deploy 1-inch HDPE piping in Zone 3
8:30	All deploying pipe
10:15	WC onsite
10:30	Complete deploying pipe; KH on skid filling in Manifold #2 area; WC on DOOSAN 85 (mini) assisting; CN and AV racking 2-inch HDPE lines at trailer rack
11:30	CN and AV housekeeping
12:00	All offsite for lunch
1:00	All return to site; CN and AV racking 2-inch piping at Manifold #1; WC on mini placing 1/2 backfill in header trench from the split to Manifold #1; KH placing backfill in Manifold #1 area
2:00	CN and AV resume housekeeping
2:30	AM and Graeme Bowles (GB) onsite; CN briefs and tours site
3:00	AM and GB offsite; KH offsite
3:30	CN on root cause call with Matt Soltis, MS, Mark Jonnet, and Debbie Wilson
3:45	RO onsite, CN briefs
4:40	RO offsite; CN responding to emails and writing text for root cause regarding GPR survey
5:25	Call to Sue Rogers (SR) to ask her to stop by site to see if utilities struck were ever marked and/or remarked by her
5:40	SR onsite, she does not recall if there were utility markings there or not with any confidence
6:15	SR offisite
6:30	CN offsite

Comment:

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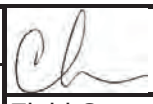
Temperature Range: 71 -- 85 ^{0} F

Weather Conditions: Cloudy



Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	6-Mar
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, DF, AV, WC, KH onsite; Tailgate meeting
7:45	WC on DOOSAN 85 (mini) placing 1/2 backfill in Zone 3; KH and AV set up and begin pumping water from the trenches and installing tees
8:20	CN status call with CH
10:30	Michelle Moore onsite to prep empty drums for pickup
11:15	RL onsite, begins prepping cabinets for painting
12:00	All offsite for lunch
1:00	All return to site; RL resumes working on cabinets; DF offsite to meet Dig Police at POL; KH and AV resume installing tees, caution tape and tracing wire to allow WC to complete backfilling
2:00	DF returns to site; CN offsite for dentist appointment
4:00	All offsite

Comment:

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Temperature Range: 66 -- 86 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	9-Mar
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	X
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	DF and RS onsite, DF call to CN
7:45	CN stops at former Headquarters Building (HQ) to have Sarah Damehouse (SD) and AV meet at HMFN, call to CS to meet at HMFN
8:00	CN, AV, SD, KH onsite; Tailgate meeting, coordinate HQ sampling effort
8:30	CS onsite to brief crew on supplies and procedures, CN traded vehicles with AV
9:00	CN on SE weekly call, CS offsite to CHP
9:15	AV, SD, DF, KH, RS offsite to gather supplies for HQ
9:20	GC on site briefly, CN brief
10:00	CN assisting with HQ organization by suggesting MB print labels and package rather than shipping
11:30	RL onsite HMFN to pick up labels from DF and transport to office for MB to print, also to pick up bottle ware
12:00	CN drives 4X4 to HQ; DF, CN, SD, RS go to lunch
1:15	Return to HQ
1:30	CN and DF return to HMFN; erect and install concrete pad form boards for Zones 3 and 10 manifold cabinets
2:30	RL onsite; RL on Skidsteer (skid) filling in header trench near trailer to allow CN and DF to erect form boards to replace the sidewalk
3:45	RL grading the AS area
4:00	All offsite; CN check on HQ personnel, then CS at CHP
5:00	CN offsite

Comment:

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Temperature Range: 70 -- 72 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	13-Mar
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO	X	Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	DF onsite
7:45	CN onsite
8:00	RL, KH, AV onsite, Tailgate meeting
8:30	DF offsite to meet Dig Police at POL; RL offsite to LC34 to continue assembling manifold trailer parts; AV and KH gathering tools and parts to weld HDPE to brass transitions on pipe racks
9:00	CN, AV, KH installing transitions, DF returns, Dig Police returning after lunch to POL
10:30	RO onsite, CN briefs, hangs out to watch some transitions being welded
11:00	RO offsite
11:45	CN, DF, KH, AV offsite for lunch
12:00	Call from Advantage Concrete to let us know they will arrive in one hour
12:45	All return to site and resume installing transitions; RL meeting concrete truck at badging
1:00	Find out that concrete truck went to Port and had them drive around to KSC Badging Office
1:30	CN prepping for concrete arrival
2:00	RL onsite with concrete truck; CN and DF spreading concrete; KH and AV screeding; RL troweling and finishing; start with sidewalk, move to Zone 10 pad and then Zone 3 pad
3:00	DF escorts concrete truck offsite
4:00	All offsite

Comment:

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Temperature Range: 63 -- 70 ^{0} F

Weather Conditions: Clear

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	16-Mar
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite			Onsite
Tyler Timmons	Amteck Rep.	TT	X			
Thomas Keating	Amteck Rep.	TK	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN onsite; DF, KH, RL, and AV already onsite; Tailgate meeting
8:15	RL, KH, and AV set up to resume installing transitions at Manifold #2; CN and DF gathering parts and tools to install cabinets at Zones 3 and 10
9:00	CN on weekly call
9:15	DF offsite to check systems. Rain begins, crew takes shelter.
10:30	Rain subsides, crew resumes
11:00	CN on EGS monthly management call
12:30	All offsite for lunch
1:30	All return and resume; Tyler Timmons (TT) and Thomas Keating (TK) of Amteck onsite to walk the electrical SOW
2:00	TT and TK offsite
2:30	RL, KH, and AV move to Zone 10 pad to install transitions; CN and DF install Unistrut supports on Zones 3 and 10 concrete pads with redheads
4:00	All offsite

Comment:

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Temperature Range: 68 -- 75 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	17-Mar
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN and AV onsite
7:45	DF and KH onsite
8:30	AV and KH setting up to weld 2-inch transitions at Manifold #2 and trailer rack
10:00	DF and KH setting up to mount cabinet for Zone 10 while CN and AV weld 2-inch transitions at trailer rack
10:30	CN and AV assisting DF and KH
11:30	GC stops by site briefly and informed us that KSC is going to mandatory telework tomorrow, but did not know how that would impact our operations
12:00	All offsite for lunch
12:45	CN receives call from MD with instructions to prepare sites for potential shutdown tomorrow (COVID-19)
1:00	All return to site and proceed to de-mobilize items to be worked on off-property in the event of project shutdown tomorrow; also remove trailers and parts from LC34 to resume assembly off property
4:00	Drop off trailers, tools, and supplies at WC's property

Comment:

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Temperature Range: 64 -- 77 ^{0} F

Weather Conditions: Clear

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	18-Mar
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	X

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN, RL, KH, AV onsite; AV drives crew to FDSA to watch launch and conduct Tailgate meeting
8:30	All return to site; RS onsite to drop off Atlas Copco O&M supplies delivered to Orlando's office by mistake
8:45	RL offsite to retrieve Kubota and trailer from WC's; RS and KH offsIte to POL to unload supplies; CN and AV prep to bolt down cabinet at Zone 3
9:15	RS and KH return and assist CN and AV
9:45	RL returns and assists
10:30	Zones 3 and 10 cabinets bolted in; all begin loading reels and spools of pipe for transfer to POL
11:00	Offloading at POL
11:30	Re-loading 2-inch spools at HMFN
12:00	Drop trailer at POL and break for lunch
1:00	Return to POL and unload
1:30	Return to HMFN for six pallets of 1-inch HDPE
1:50	To POL to unload
2:10	Return to HMFN for six pallets of 1-inch HDPE and one pallet of straw wattles
2:30	To POL to unload
2:50	Return to HMFN to retrieve the portolet, hand wash station, MOT road signage, and last of parts and supplies. The rolloff box, some 2-inch piping, and the skid steer remain
3:30	To POL to unload and place road signage in POL shed
4:00	All offsite

Comment:

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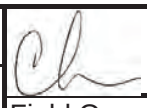
Temperature Range: 63 -- 78 ^{0} F

Weather Conditions: Partly cloudy



Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	19-Mar
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:15	CN stops at WC's to pick up hydraulic trailer
7:30	CN, DF, RL, KH, AV onsite at POL; Tailgate meeting, brief crew on SSHASP
8:30	All walk site to review dig permit and utility markings; also come up with plan to begin excavation in Zones 7 and 8 on south side of site
8:45	RL on DOOSAN 85 (mini), begins excavation/trenching with AV spotting
10:30	CN and KH offsite to HMFN
10:45	CN and KH at HMFN racking Zones 6 and 9 2-inch pipe and final housekeeping
11:00	CN drops KH at DF's truck for them to go to Tiki Shack to meet a parts delivery; CN call from MD asking for CHP drilling progress: 61 AS wells set at CHP, so approximately half-way completed, approximately 3-4 more weeks anticipated
11:30	CN at POL
12:00	DF and KH return; RL offsite; all break for lunch
12:45	RL returns and resumes trenching; KH and AV offsite to LC34 to gather soil sampling equipment for former Headquarters building (HQ) PCB sampling
2:00	AV and KH return; CN making calls to recruit samplers to coordinate HQ sampling effort for tomorrow
3:00	AV and KH to HQ to scout sample locations
4:00	All offsite

Comment:

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Temperature Range: 70 -- 84 ^{0} F

Weather Conditions: Partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	20-Mar
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	Crew meeting for former Headquarters Building (HQ) sampling; call from KH that Mark Boward badge request not submitted; CN text to MD and Anne Chrest; Anne responds that she is submitting
7:15	CN at Home Depot buying Unistrut, concrete, marking paint, and gloves for POL and carabiners for HQ
8:00	CN at Publix buying Ziplocs for HQ and Propel for crews
9:00	CN drop supplies at HQ and then retrieves ice for both projects
9:30	CN at POL unloading supplies; RL has been on DOOSAN 85 (mini) clearing and root raking SE corner since 7:30 am
10:00	RL begins trenching Zones 6/7 south of GN2 line, working west to east
10:30	CN on BD team call
11:30	Call from MD, will soon be receiving letter to shut down construction activities (COVID-19)
12:15	RL offsite for lunch; DF onsite to fuel mini
1:00	DF offsite; CN on Space and Missile Operations call; RL returns and resumes; AV stops onsite to say farewell before heading to airport; others are shipping samples and putting equipment away and managing IDW
1:15	DF returns with more fuel for mini, Skidsteer (skid), 4X4, and Kubota
1:30	DF offsite
3:00	Receive letter/email forwarded by MS from NASA Contracting to cease construction, but continue O&M (COVID-19)
4:00	RL offsite; CN tours and photographs sites (HMFN, CHP, POL) and loads Kubota to transfer to WC's property
5:00	CN offsite

Comment:

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Temperature Range: 72 -- 82 ^{0} F

Weather Conditions: Clear

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	23-Mar
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	DF, RL, KH onsite WC's.
7:45	CN onsite WC's. Tailgate; discuss COVID-19 plan to continue working at WC's until trailers are all built.
8:30	DF goes over plans for build out of both HMFN manifold trailers.
9:00	RL and KH organizing work trailer and parts trailer following travel. DF investigating power connections to determine cords/adaptors needed to power work trailer. CN on weekly call.
9:30	CN and DF to KSC to retrieve ice and portolet and hand wash station from POL.
10:45	CN returns to WC's and offloads portolet and hand wash and drink cooler. DF to Home Depot for supplies
11:00	CN on EGS guidance call.
12:15	Break for lunch.
1:00	RL and KH resume. CN and DF call KJ and CP to request splitting tool/supply trailer 3-ways with HMFN - OK.
1:30	CN and DF offsite to procure POL manifold trailer and tool/supply trailer.
4:00	KH and RL offsite. DF drops trailer at WC's on way home. CN will bring second trailer tomorrow morning.
4:30	End of day.

Comment:

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Temperature Range: 81 -- 87 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	24-Mar
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	RL onsite (WC's) opening trailers.
7:45	CN onsite. RL and CN park and reposition two new trailers.
8:00	KH onsite. Tailgate.
8:15	RL and KH installing Unistrut and manifolds in HMFN manifold trailer. DF hooking up power to job trailer.
10:15	DF offsite to check on systems. CN photographing notes to upload for daily files. Email Alex Murphy RE: Dailies and waste profile for R.O.Bs at all three sites.
11:00	Calls with Tyler Timmons of Amteck and Scott Postler RE: HMFN electrical RFQ questions.
12:00	KH and RL offsite for lunch. CN upload photos and Notes for HMFN.
1:00	RL and KH return and resume. CN assisting.
4:00	All offsite.

Comment:

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Temperature Range: 68 -- 88 ^{0} F

Weather Conditions: Clear, Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	25-Mar
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN onsite.
8:00	KH, RL, and DF onsite. Tailgate
8:15	CN emailing AM, MB, and SR to clarify tasks required regarding waste manifests and dailies. KH, RL and DF resume assembling manifold trailers.
10:30	CN updating excavation permit checklist per root-cause analysis corrective actions and emailing to MS and Andrew Walters.
12:00	DF offsite to check systems. KH and RL offsite for lunch. CN lunch.
1:00	KH and RL return and resume.
1:20	Call from MB with questions RE: Waste profiling for HMFN roll-off box and summary of UST aqueous data for RO and CH.
1:40	Call from Mike Deliz to discuss what it would take and how long before re-starting POL trenching and CHP drilling if allowed. CN call to CS who called drillers.
2:30	CN call to MD to tell him 3-days or Monday.
3:30	DF returns to site.
4:00	All offsite.

Comment:

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Temperature Range: 70 -- 86 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	26-Mar
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN onsite
8:00	RL and KH onsite, tailgate.
8:15	RL and KH resume assembling manifold trailers. CN editing the HMFN daily template for CN notes to be transferred to and emailed file to SR.
10:00	CN on Cocoa weekly call.
12:00	Lunch.
1:00	All resume, CN assisting.
4:00	RL and KH offsite. CN responding to email RE: HMFN waste profiling and dailies.
5:00	CN offsite.

Comment:

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Temperature Range: 68 -- 84 ^{0} F

Weather Conditions: Cloudy, mostly sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	30-Mar
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN and KH onsite. Tailgate. DF at LC39A with Richard of Atlas Copco performing O&M.
8:00	CN to KSC for ice. KH cleaning out cooler then resumes erecting manifold trailer.
8:30	CN returns, RL onsite.
9:00	CN on Southeast weekly call.
10:00	RL offsite for supplies. CN call with DF RE: 39A/B access and conflict now with meeting Dave Giddens (DG) vs LC39B tomorrow. CN call to DG to postpone meeting with DF until Wednesday.
10:30	Call with Alex Murphy. RE: Utilization.
11:00	EGS guidance call with Tetra Tech Management.
11:30	CN assisting KH.
12:00	CN and KH break for lunch.
1:00	RL returns. CN and KH resume.
1:30	RL offsite.
4:00	CN and KH offsite.

Comment:

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Temperature Range: 69 -- 89 ^{0} F

Weather Conditions: Sunny and clear.

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	31-Mar
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN onsite. Call with AM RE: Office (Mail, water, expenses), personnel utilization, CHP work plan, and parts.
7:45	KH onsite. Tailgate.
8:00	KH resumes erecting manifold trailer.
8:30	Call from MD, okay to resume construction at POL and drilling at CHP as long as CDC COVID-19 is followed.
9:00	RL onsite, assisting KH. CN reviewing HMFN disposal SOW.
9:45	Call with MD and MS to wait on restarting construction due to unsurety of interpretation of email response.
11:00	CN completing FY20 cybersecurity and SUI awareness training.
12:00	RL offsite, CN and KH lunch.
1:00	RL returns, all resume.
2:00	Receive revised letter from Dan Heggen of NASA contracting allowing AS construction at POL and CHP to resume. CN notifies CS to contact drillers to see when they can resume.
4:00	KH offsite.
4:30	CN and RL offsite.

Comment:

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Temperature Range: 68 -- 90 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	1-Apr
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN onsite.
8:00	KH onsite. Tailgate.
8:15	KH resumes erecting manifold trailer.
8:30	RL onsite, assisting KH.
9:00	CN assisting KH and RL.
12:00	RL offsite, CN and KH lunch.
1:00	RL returns, all resume.
4:00	All offsite.

Comment:

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Temperature Range: 64 -- 75 ^{0} F

Weather Conditions: Mostly Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	2-Apr
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN and RL onsite; tailgate.
7:45	RL resumes working on manifold and trailer. CN reviewing and commenting on HMFN waste profile.
8:00	DF onsite for supplies. KH onsite assisting DF.
8:30	DF offsite to CCF. KH assisting RL.
9:15	Call from GC for status update for root-cause corrective actions and schedule.
9:30	Receive root-cause memo from Matt Soltis; forwarding it along with other corrective actions to GC.
10:00	Cocoa weekly call.
11:45	RL offsite, CN and KH lunch.
12:30	CN on NASA check-in call. KH loading Kubota on the trailer.
1:00	CN and KH to 516S.
1:30	CM and KH offload Kubota at 516S.
1:45	KH mowing 516S. CN to POL.
2:00	CN at POL, RL arrives at POL with tools.
2:15	RL on Mini resumes trenching CN spotting for crossing the GN2 line.
4:00	All offsite.

Comment:

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Temperature Range: 55 -- 77 ^{0} F

Weather Conditions: Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	7-May
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Freese Inc.	Jason Mele	JM	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN onsite HMFN, Jason Mele of Freese Inc. onsite with P.O truck prepping roll-off box for transport.
8:15	CN manifests load, JM offsite; CN offsite to POL. RL and KH onsite POL, tailgate, resume backfilling and warning tape and wire placement.
8:30	KH and RL offsite to HMFN to pickup leftover PVC piping from vicinity of roll-off box and to get ice.
9:30	KH and RL return to site. RL on mini and KH on skid, resume backfilling, grading and placement of the warning tape and
10:00	CN on Cocoa weekly call. CN email to Sharron Jimerson for POL IDW manifest to be emailed.
11:00	Received and sent POL IDW manifest to Dinh Vo for signature.
12:00	RL offsite; CN and KH lunch.
1:00	RL returns; RL and KH resume; CN receives signed manifest and notifies Todd Freese to send truck for transport
3:00	CN offsite.
4:00	RL and KH offsite. DF onsite to drop Kubota tractor and trailer and manifests and fuels equipment
4:30	DF offsite.

Comment:

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Temperature Range: 68 -- 71 ^{0} F

Weather Conditions: Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	15-Jun
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X		Alex Valli	AV	

Subcontractor:			Onsite			Onsite
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Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC		#REF!	#REF!	###	
				#REF!	#REF!	###	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	RL onsite POL on Kubota traclor mowing. CN stop for ice.
8:00	CN and KH onsite; tailgate.
8:15	KH resume assembling parts for HMFN.
9:00	RL offsite to check on system at other sites.
9:30	KH offsite to HMFN to install legs into manifold trailer.
9:50	CN to HMFN.
10:45	RL onsite HMFN, assisting KH.
12:00	RL and KH offsite to lunch.
12:15	CN to POL for lunch.
1:15	CN and KH repairing hole saw bit.
1:30	RL onsite assisting.
1:45	All offsite POL to HMFN. RL, KH resume plumbing manifold trailer #1.
3:00	RL and KH move to trailer #2 to drill holes in floor.
4:00	RL and KH offsite.
4:30	CN offsite to CHP to check on SR and drilling progress.
5:00	CN offsite.

Comment:

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Temperature Range: 79 -- 83 ^{0} F

Weather Conditions: Mostly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	16-Jun
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X		Alex Valli	AV	

Subcontractor:			Onsite			Onsite
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Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC		#REF!	#REF!	###	
				#REF!	#REF!	###	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN onsite POL, fill cooler with water and pick up ice.
7:45	CN onsite HMFN; call to KH. KH retrieving supplies from LC34 for James Lloyd and Mark Broward to collect waste profile samples at KHQA after managing 39 A/B IDW.
8:00	RL onsite, tailgate.
8:15	RL setting up men working ahead sign and cones and inventorying parts and tools needed to plumb zone 10, manifold cabinet 4 and zone 3, manifold cabinet 3.
9:00	CN and RL to POL for parts and tools.
9:30	CN and RL return to HMFN; RL begins plumbing manifold 4.
11:00	KH onsite assisting RL.
11:45	Manifold cabinet #4 complete, KH and RL move on to cabinet #3.
12:30	Manifold cabinet #3 complete besides cutting and rebanding cam-lock onto 2-inch hosing to fit. All offsite.
1:30	CN and RL at POL gathering tool and supplies to install 2-inch hosing in manifold trailer #2.
2:00	CN and RL at HMFN, unload parts and tools, RL plumbing trailers.
4:00	RL offsite.
6:00	CN offsite.

Comment:

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Temperature Range: 78 -- 81 ^{0} F

Weather Conditions: Mostly Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	17-Jun
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH			Alex Valli	AV	

Subcontractor:			Onsite			Onsite
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Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC		#REF!	#REF!	###	
				#REF!	#REF!	###	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
8:00	CN, KH, RL onsite. Tailgate all working on connecting 2-inch hosing from manifold trailer #2 to the pipe racks.
8:20	Call from RO to discuss horizontal drilling mud/IDW options.
12:00	All offsite. CN to CHP to answer question for SR and Ryan of Geosyntec Re: location of MW to be installed.
12:15	CN to CCB to restart AS system.
12:45	CN drive by check on 516 and CRCA
1:00	CN at POL looking for parts, RL onsite assisting.
1:15	CN and RL to HMFN; all running 1/2" flex line to connect zone 9 rack to manifold trailer #2.
3:55	Check on KH and RL status; zone 9 complete.
4:00	RL and KH offsite.
4:30	CN offsite.

Comment:

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Temperature Range: 80 -- 82 ^{0} F

Weather Conditions: Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	24-Jun
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN			Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
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Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC		#REF!	#REF!	###	
				#REF!	#REF!	###	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	WC onsite CHP on Mini resumes trenching nearby AS wells. CN call to JM for permission to trench at CHP due to dig permit stating "call back for trenches" and we have maintained markings. Okay and follow up with AG when he returns to KHQA on Monday.
8:00	KH and RL to HMFN to resume installing flex line from racks into manifold trailer #2. CN at CHP reviewing dig permit and SSHASP with WC.
9:00	CN cutting down PVC stickups to allow Mini to straddle as WC continues trenching.
10:50	CN check on WC, cut off 2 more AS wells, then goes to KHQA to add pin flags to utility markings.
12:00	CN return to CHP. WC, KH onsite, CN lunch.
12:30	DF onsite CHP.
12:45	CN to KHQA to walk site with MD, Bruce Davidson (BD), Mike McMcullough (MM), Ralph Kennedy (RK), Lisa (Epoch) and a BOSS inspector. Bruce will try to get RK permission to have electric sub lock out tag out (LOTO). Parking lot lighting, 3 condensers, and 2 irrigation timers. CN to have HVAC Co. remove refrigerant. RK electric sub disconnect and remove 3 condensers.
2:45	Walk complete. CN talk with MD. BD is having Tom King mark 3 water shutoffs in case of damage.
3:30	CN to CHP. DF potholing communication line. CN call with AM.
4:00	WC offsite. KH stopped by to inform CN that hosing to manifold #2 is complete. CN to KHQA to pin flag north and east sides (dig police locates this morning).
4:45	CN offsite.

Comment:
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Temperature Range: 83 -- 90 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	25-Jun
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	WC and DF onsite CHP. WC on mini resumes trenching.
8:00	CN and KH onsite. Tailgate, RL onsite. CN brief crew on SSHASP. CN call with Ryan Purdy regarding heavy equipment. CN call with CA regarding schedule for day for HBF. MB meeting Kugelmann and later CA to access Schwartz.
9:00	KH and RL offsite to HMFN to install 2-inch and 1/2-inch flex hosing from the pipe racks to manifold trailer #1. WC on mini resumes trenching with DF spotting.
9:30	CN on call with John Zwahl regarding HQ waste profile and schedule.
11:35	John McCoy, NASA safety, onsite, CN briefs.
12:00	KH onsite, KH, DF, WC break for lunch.
12:15	CN break for lunch.
12:45	KH offsite to HMFN. WC resumes trenching with DF spotting. CN downloading KHQA drawings from MD and Ralph Kennedy.
12:55	Phase II stop work of trenching and spotting.
2:45	Rain begins.
3:00	WC, DF, RL, KH offsite. CN making calls and sending emails to get Chrome to provide schedule info for HMFN outage and field work and POL field work.
5:00	CN offsite.

Comment:
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Temperature Range: 88 -- 92 ^{0} F

Weather Conditions: Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	29-Jun
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	X
Project Manager	Chris Hook	CH			Ron Linton	RL	
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	DF, WC, KH, onsite CHP. Tailgate
8:00	CN stop for ice then onsite. All walk potential new electric line for movement of AS trailer so as to not block access to the AS expansion in the field to west.
8:15	James Lloyd onsite.
8:30	WC on mini, trenching in SE corner of site with KH spotting, DF and JL to POL to move tool trailer to CHP.
9:00	DF and JL return, CN on southeast weekly call, Rob Siegel onsite.
9:40	Call from Tom Johnson asking CN to join QA council, DF and JL offsite.
9:45	CN call with Linda Diano to talk over HQ SSHASP rev 1 amendment 1 comments and presentation expectations.
10:00	CN on NG review call.
10:15	DF returns and takes over spotting WC, KH and RS offsite to HMFN to install blocks and anchors on manifold trailers.
10:30	CN, DF, WC layout electric trench.
12:00	Lunch.
12:45	CN to HMFN to assist KH and RS anchoring manifold trailer #1, DF and WC resume.
1:30	CN return to CHP.
2:15	CN returns to HMFN to assist again.
3:00	CN to CHP, call with AM and Chris Pike regarding manifold design from Geosyntec/PRM. Send them our details to build it in trailer rather than Conex and no electric is necessary.
3:20	Phase II
3:30	WC, KH, RS, offsite.
4:00	Phase II terminated CN and DF to POL to remark utilities and inventory Unistrut.
4:30	DF and CN offsite with trailer to purchase Unistrut and 3-inch electric conduit in morning along with picking up walk behind concrete saw from home depot.

Comment:

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Temperature Range: 81 -- 92 ^{0} F

Weather Conditions: Sunny

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	30-Jun
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN			Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	DF, WC, KH, RS onsite CHP. Tailgate. CN at CED to purchase supplies to install 3-inch PVC conduit and #4/0 soft drawn bare ground wire at CHP.
7:45	KH and RS to HMFN to install anchors and blocks on manifold trailer #2. DF and WC prepping for saw cut of asphalt.
8:30	CN at Home Depot for rental of walk behind saw.
9:30	CN onsite CHP offloading supplies and saw.
9:45	DF saw cutting asphalt.
10:00	CN and WC selecting area to build 2-inch pipe rack for air sparge (AS) trailers.
11:30	KH and RS return to CHP and unload tools and supplies.
12:00	lunch.
12:45	WC offsite to take skid steer to LC34 to trade for tractor and steel plates. DF offsite to take flatbed to LC34 to load tractor and steel plates. CN, KH, RS installing pipe racks.
2:30	WC returns and offloads tractor and steel plates.
2:45	WC offsite . Pipe racks set. KH and CN load walk behind saw in CN's truck.
3:00	CN offsite to return saw. KH and RS mix concrete and set pipe rack posts in concrete.
3:30	CN returning saw. KH and RS housekeeping.
4:00	KH and RS offsite.

Comment:

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Temperature Range: 84 -- 93 ^{0} F

Weather Conditions: partly cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	14-Jul
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC		Mike McCaughn		MM	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
6:30	CN stop at Home Depot for supplies.
7:00	CN, WC, KH, EW, onsite KHQA. SR at HMFN.
8:00	RL onsite KHQA, tailgate.
8:15	EW taking trailer with vegetation to Schwartz Road Landfill. CN and KH open stockpile area. WC on Mini resumes excavating and loading Areas 4 and 5.
8:30	CN to HMFN to brief SR on Chrome scope of work. RL and KH to HMFN with weed eaters and tractors.
9:00	RL and KH weed eating HMFN. Ron Gilles of Chrome onsite with foreman and 4 laborers. SR brief crew on SSHASP and
9:15	KH returns to KHQA. EW returns to KHQA and dumps dump truck while WC on WL loads trailer with vegetation.
9:45	CN returns to KHQA. EW offsite to Schwartz landfill. WC resumes excavating with KH spotting.
10:30	KH drums WL with gas station for CN to fuel up.
11:00	Resume excavation.
11:45	DF and CN shut off water supply to hose bibs.
12:00	Break for lunch. Rain coming, CN, DF, KH cover stockpile.
12:20	EW returns from Schwartz.
12:25	Phase II.
12:30	CN meet Son Ho and electricians at SS177 at CHP just as it begins to rain. CN informed Son that Luis Arangure and Jeff Johnson have his number to text him when rescheduled. CN drove by HMFN to check on Chrome and SR.
2:00	Call from SR, Chrome leaving for the day. SR checking on POL for Kugelmann on way through.

Comment:

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Temperature Range: 88 -- 92 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	15-Jul
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X	Mike McCaughn		MM	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	SR and Chrome onsite at HMFN.
7:30	CN, WC, KH, EW, RS onsite KHQA, Herc Rentals mechanic onsite for truck air conditioning.
8:15	DF, RS, MB1, and RL on tractor offsite to CHP to install and rack 1-inch HDPE piping.
8:30	Herc Rentals Mechanic (Sean) offsite following recharge of truck AC. WC on Mini resumes excavating Areas 4/5 with KH spotting and EW driving dump truck to stockpile area. CN offsite to CHP to meet Son Ho and BOSS electricians (Jodi and Ron) to investigate SS177.
9:00	GC onsite KHQA briefly.
9:15	GC onsite CHP, CN briefs and tours.
9:30	CN and GC to HMFN, GC onsite briefly, CN remains to answer some question from the Chrome foreman.
10:00	CN returns to KHQA and drafts email to report CHP electrical meeting summary.
10:45	CN call with Alex Murphy.
11:00	CN, KH, and RL construct 2nd Stockpile base.
12:00	Break for lunch. Rain coming, CN, DF, KH cover stockpile.
1:00	WC resumes excavating with EW transporting. CN and KH cover Stockpile 1.
1:30	No air conditioner in dump truck again, CN order truck swap.
2:00	CN and KH spotting for WC.
2:45	CN call with Bobby Lochmueller of Soiltech to schedule transportation and disposal trucks next week.
3:00	CN call with Debbie Wilson and Andrew Walters RE: badging truckers.
3:45	DF onsite, 1-inch HDPE piping completed at CHP; RS and MB1 offsite.
4:00	WC, KH, EW, RL offsite.
4:15	CN and DF offsite.
4:45	CN stop at BJs for supplies, CN call with MD Re: badging for truckers.
5:30	End of day.

Comment:

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Temperature Range: 77 -- 90 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	20-Jul
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF			Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH	X		Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC		Mike McCaughn		MM	

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	EW at badging to lead truckers to site once badged. SR at HMFN with Chrome resuming installation of conduit and ground wire. CN and RS onsite KHQA.
7:05	One transportation and disposal truck badged, second truck to be here in 5 minutes.
7:15	WC onsite assisting CN removing cover from stockpile.
7:30	DF, KH, MB1 onsite. Second truck at badging, badging info not in system. CN call to MD to have info submitted.
7:45	CN call with MD while he is resubmitting badge request. RL onsite.
7:55	CN directing truck S229 where to park.
8:00	RL on WL loading S229, CN manifesting. RS and MB1 offsite to POL to resume erecting tees for CHP. EW returns to badging for truck 250. WC on 145 completing 6-inch in Area 7 and excavating and stockpiling 2-feet in Area 8 footprint. KH on Mini excavating 6-inch in Area 9 into dump truck for EW to transport to Stockpile 3.
9:00	KH spotting WC, RL on Mini in Area 9 with CN spotting.
11:00	CN on EGS operations call.
11:40	S229 returns, RL on WL loading last of Stockpile 1 then KH leads truck to Area 8 to complete load.
12:00	250 returns, RL on WL loading from Stockpile 3, offsite 250.
12:30	RL offsite, lunch.
12:40	S229 offsite
12:45	CN, WC, KH, EW lunch.
1:45	RL returns, WC and RL in excavators CN and KH spotting.
3:30	250 returns, RL breaks valve off of hose bib line, WC loading 250 as CN and RL shut off water valve.
3:45	DF onsite to assist with capping water line, S229 returns.
4:00	WC and KH offsite, RL on 145 completing loading 250 and S229.
4:20	250 offsite, water line capped.
5:00	DF offsite to assist CS with flat tire.
5:30	S229 offsite, rocket launch. RL offsite.
5:45	CN call with Alex Murphy RE: CRCA PEEAC and invoice.
6:45	CN offsite.
6:45	CN offsite.

Comment:

-- CHP 30 tees installed to day by RS, MB and DF.

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Temperature Range: 84 -- 90 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	27-Jul
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jacob Bayles	Chrome Electric	JB	X			
John Rauch	Chrome Electric	JR	X			
Greg Floyd	Chrome Electric	GF	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC	X			

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN called SR to stop by KHQA to pick up the HMFN SSHASP and that GC had called to say that he was onsite and Chrome was onsite and he was calling SR. SR texted GF who responded that the crew had shown up earlier than he originally informed SR.
8:15	SR stopped by KHQA then to HMFN
8:50	SR conducts tailgate meeting; wear safety glasses due to flying bugs/debris and maintain hydration due to heat
9:00	Chrome crew working on temporary junction box
9:20	JB and JR setup a canopy for shade. Setting up temporary junction box for Wednesday, July 29th.
9:45	GF onsite. Crew finishing work. SR taking photo of temporary junction box.
11:45	All offsite
11:50	SR stopped by KHQA to return SSHASP. CN asked SR to hold onto it in anticipation of the 0700 start time on 7/29 for continuation of the electric installation.
12:00	SR offsite.

Comment:

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Temperature Range: 75 -- 89 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	29-Jul
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jacob Bayles	Chrome Electric	JB	X			
John Rauch	Chrome Electric	JR	X			
Greg Floyd	Chrome Electric	GF	X			
Ron Gilles	Chrome Electric	RG	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	Chrome and Tt onsite.
7:05	Chrome laid out color coded cable.
7:20	SR conducts tailgate meeting; wear safety glasses due to flying bugs/debris and maintain hydration due to heat
7:30	Chrome finishing laying out cable.
7:45	Crew waiting for outage personnel
7:50	SR texted CN about when to pick up LOTO tags and stickers (2 sets).
8:05	SR stopped by KHQA to pick up the tags and stickers.
8:15	SR returned to HMFN. SR asked GF for status of cable installation. GF stated that ground wire is installed and the cable will be pulled once the trailer is air sparge trailer is onsite.
8:30	Outage crew arrives; two BOSS trucks and two more Chrome Electric trucks
8:50	BOSS offsite
8:55	JB inside substation wearing electrical PPE; full suit, hardhat with shield, 2 sets/layers gloves
9:00	CN onsite
9:05	Ground and neutral are bonded on substation. LOTO applied to breaker in the off position. GF showed SR to verify and SR took photo.
9:20	Cutting cable and putting into temporary junction box and wrapping ends with electrical tape. Cable tightly placed into temporary box and cover reattached.
9:45	Ron Gilles of Chrome Electric onsite to observe work and speak with CN and Chrome crew
10:05	CN offsite
10:10	RG offsite
10:20	GF calling BOSS to turn on power at substation.
10:30	BOSS onsite to turn on power
10:45	All offsite

Comment:

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Temperature Range: 79 -- 86 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	12-Aug
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS			Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH			Ron Linton	RL	
Project Engineer:	Alex Murphy	AM			Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA			Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH			Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	CN and KH onsite.
7:15	RL and WC onsite; tailgate.
7:30	S229 onsite; CN, WC, KH uncover Stockpile 12, RL on WL loading from Stockpile 12.
7:55	S229 offsite. RL scraping Stockpile footprints into Stockpile 12. CN, DF, WC, KH, discussing LC34 excavation.
8:45	250 onsite, RL loading. WC and KH on 4x4 gathering debris around building; housekeeping.
9:10	250 offsite. RL on WL assisting WC and KH housekeeping.
11:20	S229 returns, RL loading last of Stockpile 12, WC on Mini assisting with CN and KH setting up to decon buckets over the truckload.
12:00	CN, KH, DF decontaminate buckets over the truck bed.
12:30	S229 and RL offsite; lunch.
1:15	CN on NASA MCL Meeting call (late)
1:45	RL returns. CN and KH fueling Volvo ECR88 Mini.
2:00	DF offsite to escort AS trailer delivery from badging to HMFN. CN offsite fueling dump truck. RL fueling WL from CN's truck. WC and KH relocating office trailer from KHQA to POL.
2:24	Phase II.
2:30	RL cleaning out dump truck cab. CN offsite to HMFN to drop trailer anchors in trailer.
2:45	All offsite.
3:00	CN send trailer photos to Chris Hook.
3:15	CN stop for fuel for heavy equipment.
4:30	CN offsite.

Comment:

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Temperature Range: 79 -- 88 ^{0} F

Weather Conditions: Mostly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	13-Aug
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN, DF, KH, RL onsite at KHQA. Tailgate.
8:00	DF offsite to HMFN to meet dig police for trailer anchor locations. KH and RL prepare for going to LC34 to install tires on Kubota tractor, load steel plates to protect sidewalk at KHQA and 2-inch steel piping for CHP.
8:30	CN, RL, KH to LC34.
8:45	RL and KH loading 2-inch pipe. DF to Home Depot for supplies.
9:00	KH and RL installing new tires.
9:30	RL and KH to CCF to pick up 1-inch steel pipe for CHP. CN investigating LC34 for feasibility of dropping roll-off box beneath pedestal and seeking a location to build soil stockpiles to the southeast of the pad.
9:45	CN to CCF. DF tracking skid from CHP to HMFN.
10:00	CN on Cocoa Weekly call. CS on skid loading 1-inch steel for RL and KH. RL and KH to SW3 to pick up steel pipe.
10:45	All at HMFN positioning trailer to mark locations to install anchors.
12:00	Lunch.
1:00	DF and RL saw cutting squares in asphalt with KH removing squares.
2:00	CN assisting KH auger through lime rock.
2:30	CN offsite to locate tool for driving anchors.
3:45	DF, KH, RL, housekeeping.
4:00	KH and RL offsite. CN and DF continue to search for tool.
4:45	CN and DF gather parts to make another tool.
5:00	CN and DF offsite.
4:30	CN offsite.

Comment:

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Temperature Range: 82 -- 89 ^{0} F

Weather Conditions: Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	14-Aug
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA	X	Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN and KH at KHQA. RL at HMFN.
7:40	CN and KH to POL to gather parts to erect 2-inch hosing for HMFN.
8:30	CN and KH onsite HMFN. KH and RL drilling out limestone to break it up for post hole auger.
9:00	CN reaming holes with post hole auger with KH moving spoils.
9:30	DF onsite with tool for driving anchors with drill. DF and RL installing anchors.
11:00	KH on skid re-positioning trailer over installed anchors with CN, DF, RL placing blocks.
12:00	DF offsite to Orlando for 2-inch hosing, RL offsite. Lunch.
1:00	CN and KH to KHQA to offload steel plates then to CHP to offload steel pipe.
1:30	RL onsite assisting KH. CN on KSC Check-in call.
2:00	CN on HMFN start up call.
2:15	CN, KH, RL installing hurricane straps on HMFN AS trailer.
3:15	CN and DF teflon taping and installing couplers and cam-lock fittings for header hose connections.
3:30	CA onsite briefly.
4:00	All offsite.

Comment:

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Temperature Range: 82 -- 91 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	17-Aug
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:15	CN onsite KHQA with first backfill truck. CN has him dump in Area 8.
7:30	RL onsite KHQA.
7:45	WC onsite KHQA with skid and compactor attachment, KH onsite with Kubota tractor, DF onsite. Tailgate.
8:15	RL on wheel-loader placing backfill loads in Area 8, WC on skid prepping stockpile footprint Areas for sod. DF and KH offsite to HMFN to install 2-inch header hosing and check on SR working with Chrome to complete cable and panel installation.
8:30	CN call to Corey Nail to walk site for sod takeoff Wednesday. CN calculating loads per area for rough backfill truck distribution.
9:00	CN on SE Weekly call.
10:00	CN to HMFN to check on progress; Chrome installing cable and DF and KH installing hose.
10:15	CN housekeeping then to CHP to check on MB2 with drillers DPT sampling, then to POL to drop supplies and pickup parts for HMFN, drop parts at HMFN, then return to KHQA.
11:00	CN on EGS operations call.
12:00	Lunch.
1:00	WC and RL placing backfill in Areas 7,8,9,10. KH to HMFN and CHP to mow. DF to POL to offload supplies and load Maintenance of Traffic (MOT) signs and cones for CHP.
2:00	CN check in with Ralph Kennedy when his electricians will be onsite for Lock-Out-Tag-Out (LOTO) turnover. Answer: Tomorrow morning.
3:00	Last load of backfill for the day (13 total)
3:20	DF to CHP to remove MOT signage due to pending rain.
3:30	RL and WC offsite.
3:35	DF to HMFN, call to CN to call duty office to request SS109 be opened at 9AM tomorrow for Chrome to remove their LOTO. CN spoke with Kim at BOSS Duty Office.
3:45	DF prepping summa cannisters for samples tomorrow.
4:00	CN offsite.

Comment:

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Temperature Range: 77 -- 89 ^{0} F

Weather Conditions: Mostly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	18-Aug
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	X
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
6:15	CN receives text from Randy Morales of C.A.G that backfill pit is closed due to rains yesterday. CN text to crew.
7:30	CN onsite KHQA.
7:45	RL onsite KHQA. Call from Ralph Kennedy that his electrician is onsite for LOTO turnover. CN call to DF who is at HMFN with SR and Chrome and had set up summa canisters.
8:00	DF onsite KHQA walking building with electrician. CN and RL to HMFN.
8:15	RL on tractor mowing HMFN.
8:30	KH onsite HMFN begins weed eating.
9:40	CN making calls to follow up on last evenings request for electricians to open SS109 for Chrome to remove LOTO and energize breakers.
10:00	CN receives call from electric console that electricians to be onsite in 10 minutes.
10:15	BOSS electricians onsite to open SS109, Greg Lloyd of Chrome removes LOTO, energized breaker, and completed a voltage check. DF conducted a digital rotation check within the AS trailer and energized the lights and air conditioning.
10:30	BOSS and Chrome offsite. Crew watch launch.
10:45	SR onsite.
12:00	RL offsite for lunch. KH offsite to move tractor to POL begin mowing. CN and DF to CHP to remove MOT signage and discuss steel pipe layout.
12:30	CN at POL; lunch
1:15	KH offsite, RL onsite mowing.
2:30	Phase II- RL offsite.
3:00	DF picks up summa canister from HMFN.
3:30	CN offsite POL.

Comment:

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Temperature Range: 73 -- 91 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	19-Aug
112G08982			Year:	2020
			Day:	Wednesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jim Frydl	MAE2	JF	X			
John Evans	MAE2	JE	X			
Richard Payne	Atlas Copco	RP	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN and RL onsite POL. Fuel tractor.
7:45	RL mowing POL, CN to HMFN.
8:00	Jim Frydl and John Evans of MAE2 onsite HMFN. DF onsite. DF states that security needs Richard Payne (Atlas Copco) badge request resubmitted. Chris Hook trying to contact Ryan O'Meara and CN trying to contact MD. CH re-emailed to MD.
8:15	DF briefing MAE2 on SSHASP.
8:30	CN meet and greet MAE2. DF, JF, RP start system and pressure test. Find several loose fittings and tighten.
8:45	
10:00	KH offsite to LC34 for PIDs.
10:30	
11:20	
11:40	
12:00	All take lunch. CN check on HMFN and KH offsite to POL. RL offsite. RS onsite.
12:20	
1:20	CN on call with AM regarding whether CHP AS trailer has been approved, CN to HMFN to ask Jim Frydl if MAE2 were building it. Schematic not approved. CN email to Chris Pike to get AS and manifold trailer approved and constructed for December delivery.
1:45	CN returns to POL. RL and KH move on to mow SW3. DF calibrate PID @ 99.7 ppm with 0-0.1ppm background.
2:00	All fittings are tight and system holding air. DF sends air to all zones at 0.5 scfm@20 psi. DF walk site with PID readings at 0-0.1 ppm.
2:30	
2:45	
3:10	
3:30	DF walk site with PID readings 0-0.1 ppm. Retighten several loose MW caps. Find 4 broken AS wells to be fixed. RP says compressor operating as it should. DF and JF shut system down for the night.
4:00	DF, RS, JF have rundown and to-dos for tomorrow.
5:30	JF departs
6:00	RS departs
7:00	DF departs

Comment:

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Temperature Range: 76 -- 88 ^{0} F

Weather Conditions: Mostly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	20-Aug
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA	X	Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite			Onsite
Jim Frydl	MAE2	JF	X			
John Evans	MAE2	JE	X			

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG
Geoff Card	NASA Safety & Health	GC				

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	DF, JF, JE, RS onsite; Tailgate
7:45	All start sysem and start balancing wells to 0.5 scfm @ 20 psi. DF set up summas.
9:00	CN, RL, KH onsite start repair of 4 broken AS wells
10:30	DF, RS aid with well repairs
1:00	All wells repaired. CN, KH, RL offsite
3:00	DF recover summas
4:00	DF, RS, JF have rundown and to-dos for tomorrow.
5:30	JF, RS, DF departs. DF to fedex.

Comment:

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Temperature Range: 76 -- 89 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	21-Aug
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	X
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF	X	Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
9:30	CN, RL, KH to HMFN. DF and RS already onsite. RL and KH repair sharkbite at manifold cabinet then all investigating and adding portland to short circuits.
11:30	All offsite

Comment:

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Temperature Range: 78 -- 88 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	24-Aug
112G08982			Year:	2020
			Day:	Monday

Personnel Summary

Tetra Tech, Inc.				Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN		Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:00	CN on site. First load of backfill dumped in Area 11 and leaving site. CN asks Sunrise Systems of Brevard Team Working in KHQA to move vehicles parked adjacent to building later this morning.
7:30	RL onsite, drives CN to POL to retrieve 4x4, brief rain.
8:00	CN texting with Randy Morales of C.A.G. regarding 2nd backfill truck badging and directions.
8:45	WC onsite, offloading skidsteer.
9:00	CN on SE Weekly call. WC on skid placing and grading backfill.
10:00	KH onsite, retrieving skidsteer from CHP and begins working from east end of building to west raking and filling. Randy Morales of C.A.G onsite briefly.
11:15	CN offsite to badging to meet Herc Rentals delivery of pipe threader and stand for CHP.
11:50	CN returns.
12:00	RL offsite, lunch.
1:00	RL returns, all resume. CN on calls with AM and DF regarding CHP trailer layout and manifold trailer markups while periodically spotting backfill trucks.
1:45	WC switches to compactor attachment on skidsteer and makes multiple passes on Areas 8-22.
3:15	BF trucks last load of day. 15+12=27 today. 27+13 last week = 40 total to date.
4:00	RL, WC, KH offsite. RS call to CN to relay HMFN being shutoff for night due to PLC overheating issues. Restart in the morning.
4:30	CN offsite to CHP to check on CS and drill crew.
5:15	CN offsite.

Comment:

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Temperature Range: 82 -- 89 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	25-Aug
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
6:45	First BF load of day delivered.
7:00	CN onsite.
7:30	WC, RL, KH onsite.
7:45	WC and KH each in a sidsteer and RL on wheel loader resume placing and grading backfill working from Areas 18/19 counterclockwise around the building.
8:00	CN sending emails regarding hurricane response and spotting backfill trucks.
9:30	CN on call with DF, CP, AM regarding CHP AS trailer layout, second hot trailer vs 2 compressors in 1 trailer, and manifold trailer comments. CP arranging cals with Geosyntec and MAE2 and Geosyntec and PRM.
11:30	RS onsite to brief CN on HMFN startup status. RL places backfill on sidewalk to be protected. WC grades backfill as RL retrieves steel plates and places them on backfill to protect sidewalk.
12:00	RL offsite. Lunch
1:00	RL returns, all resume placing and grading.
2:00	CN offsite briefly to fill fuel tank.
3:25	Last load of backfill for today 15 + 14 = 29 for today + 40 = 69 to date.
4:00	All offsite. CN to HMFN to check on RS and system. CN capped one MW as he was leaving and notes to RS there may be some AC loss in air gap along compressor air instake shroud. RS taping.
4:20	CN to CHP to check on CS and drill crew. CA had replaced CS late in day.
4:45	CN offsite . Stop to fill fuel tank on way home.

Comment:

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Temperature Range: 83 -- 90 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	27-Aug
112G08982			Year:	2020
			Day:	Thursday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH		Alex Valli	AV	

Subcontractor:			Onsite			Onsite

Visitors:			Onsite			Onsite
Mike Deliz	NASA Technical Lead	MD	X	Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:30	CN onsite KHQA.
7:45	RL, WC, KH onsite KHQA. Tailgate.
8:00	RS onsite to drop off pipe camera for KH and update CN on HMFN status.
8:15	WC resumes grading as RL and KH resume raking/shoveling along building wall.
8:30	RS offsite, CN assisting RL and KH.
10:00	CN on Cocoa Weekly call.
10:45	CN resumes assisting RL and KH.
12:00	RL offsite, lunch.
1:00	RL returns, WC and KH load CAT skid into trailer and WC leaves site. RL and KH load steel plates and excess straw
1:30	CN offsite to HMFN for a pallet and stuck around to talk Chris Hook through system operating conditions due to compressor alarms he is receiving. Compressor is cycling but there are no alarms showing or shutting down system.
2:00	CN returns to KHQA, KH and RL had left site to demobe trailer to LC34 and offload contents.
2:15	CN call to MD to see when he wants to walk site, he will be onsite in 15 minutes or so.
2:30	CN cleaning out 4x4 and stacking t-posts on pallet for demobe.
2:45	MD onsite, walks perimeter of buildling with CN.
3:15	KH and RL return and resume raking/shoveling.
3:45	CN and MD offsite to HMFN to tour site.
4:00	KH and RL offsite. MD offsite. CN and RS measuring air intake and discharge shrouds and sound hood requested by Chris Hook and Shawn Evans of MAE2 and also discuss system operations and why compressor is cycling.
4:45	CN and RS offsite. CN call to AM to see is he can assist HMFN start up tomorrow. AM will assist tomorrow and deliver summa canister.
5:30	End of day.
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Temperature Range: 82 -- 89 ^{0} F

Weather Conditions: Mostly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	1-Sep
112G08982			Year:	2020
			Day:	Tuesday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:45	CN and KH onsite POL. Tailgate.
8:30	CN call with RS for startup status update.
9:00	KH offsite to check on systems and retrieve 3/4-in J-plug from LC34 to install at MW at CCB per RO.
11:00	CN to HMFN to assist RS with removing air discharge rain shroud.
12:00	CN to POL; Lunch
1:00	CN scheduled sod for KHQA for tomorrow afternoon. KH and CN at CHP shoveling around stainless steel AS wells to find transitions from stainless to temporary PVC risers.
2:00	CN on call with Chris Pike, AM, Eric Sager and Kevin Warner of GeoSyntec, and Shawn Evans of MAE2 to discuss CHP AS trailer layouts.
3:00	CN and KH to HMFN to load rain shroud for KH to take to Superior Welding to re-fabricate to force air straight out rather than down.
3:15	KH offsite. CN and RS covering air discharge hole with visqueen and weighting down with cinder blocks on trailer roof.
4:30	CN and RS offsite.
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Temperature Range: 77 -- 87 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

DAILY ACTIVITY REPORT

Project No.:	Project Title:	Hypergol Maintenance Facility North (HMFN) Interim Measures SWMU 90 Air Sparge (AS) System Installation	Date:	4-Sep
112G08982			Year:	2020
			Day:	Friday

Personnel Summary

Tetra Tech, Inc.			Onsite	Support Personnel:		Onsite
Program Manager:	Mark Speranza	MS		Wayne Crisafulli	WC	
Project Manager	Chris Hook	CH		Ron Linton	RL	
Project Engineer:	Alex Murphy	AM		Melissa Bennett	MB	
CM/Field Operations Supervisor:	Christopher Neumann	CN	X	Chuck Sorden	CS	
Site Safety & Health Officer:	Chris Adkison	CA		Rob Siegel	RS	X
Field Engineer:	Dan Forester	DF		Sue Rogers	SR	
Project Support:	Kyle Hoard	KH	X	Alex Valli	AV	

Subcontractor:			Onsite				Onsite

Visitors:			Onsite				Onsite
Mike Deliz	NASA Technical Lead	MD		Jeff McDowell	Dig Police	JM	
Ryan O'Meara	NASA RPM	RO		Alfredo George	Dig Police	AG	
Geoff Card	NASA Safety & Health	GC					

Description of Work Performed, Problems Encountered and Resolutions:

Time	
7:15	CN onsite to meet sod delivery
10:00	Sod delivery truck onsite. KH onsite prepping east end for sod, south of sidewalk. Nail Farms resumes throwing sod in SW field.
10:45	Nail Farms throwing sod at east end; KH to HMFN to prep area around AS trailer to receive sod.
11:15	Nail Farms and CN to HMFN with sod pallet.
11:45	Nail Farms tossing sod at HMFN. KH and RS re-installing rain shroud on trailer.
12:00	Nail Farms offsite. CN and KH return to HQ. Lunch.
12:30	KH on tractor mowing high grass at east end of building.
1:00	CN and KH offsite.
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Temperature Range: 80 -- 90 ^{0} F

Weather Conditions: Partly Cloudy

Field Operations Supervisor Signature

12/02/14 HMFN 112-G0892

Personnel : Chuck Sorden (CS) Geologist Tt
Sue Rogers (SR) P.G. Tt
Dave Laymon (DL) Driller GPS
Jared Linke (JL) Driller GPS
Thomas Horse (TH) Tech GPS
Adam Smith (AS) Tech GPS
Ben Yerkes (BY) Tech GPS

Weather : Sunny, windy 63°F
PPE : Level D
Health & Safety (HAS) : Topics – SSHASP, PPE, SDW
Objectives : Begin AS well install

0715 CS/SR on site; Site Setup
0950 GPS on site; HAS meeting; Site Setup
1010 Issue
1040 Issue resolved; DL Setup on AS 0003; JL Setup on AS0001
1110 Drilly Commenced on AS 0001
1130 ~~Drilly Core~~ Core pulled
1155 Core pulled; Spoons / PM; Setup well 25-27' TD; well will be 1"
Set in 6" Bentonite; All future 1" wells will be 4"; GPS offsite
1245 GPS on site
1300 JL Setup AS 0001 25'-27'
1315 Well Set; Begin Development well
-Screen : 25.5-27.5' (screen pull due to overdrill)
~~30~~/30 Sand : 24-27.5'
Bentonite : 21-24'
1335 Hydration Complete; Grout Backside
1400 Installation Complete
1410 JL Setup on AS0055; hand clear 5'
1420 ~~Pulling 40~~ Drilly Commence
1445 Drilly Core 40'-50'
1510 Core pulled; Setup well ~~41.5-43.5~~ 40.5-42.5 w/ 1' slip sup to 43.5
1540 Well Set; Develop / Hydro
Bentonite Backfilled to 46
30/65 to 43.5
20/30 Sand to 40'
Bentonite to 37'
1600 Development Complete; Grout Backside
~~1615~~ Installation Complete
1630 Setup on AS 0062; hand clear 5'

Scale: 1 square = _____

12/02/2014 HMPN 1126085E2

Personnel : Chuck Sorden (CS) Geologist Tr
Dave Longino (DL) Driller GPI
Sue Regnis (SR) P.G. Tr
Jared Linn (JL) Driller GPI
Ben Verema (BV) Tech GPI
Thomas Watson (TW) Tech GPI

Weather : Sunny Cold 42°F
PPE : Level D
Health & Safety (HAS) : Topics - SSHASP; PPE; JOW
Objectives : Continue AS well install

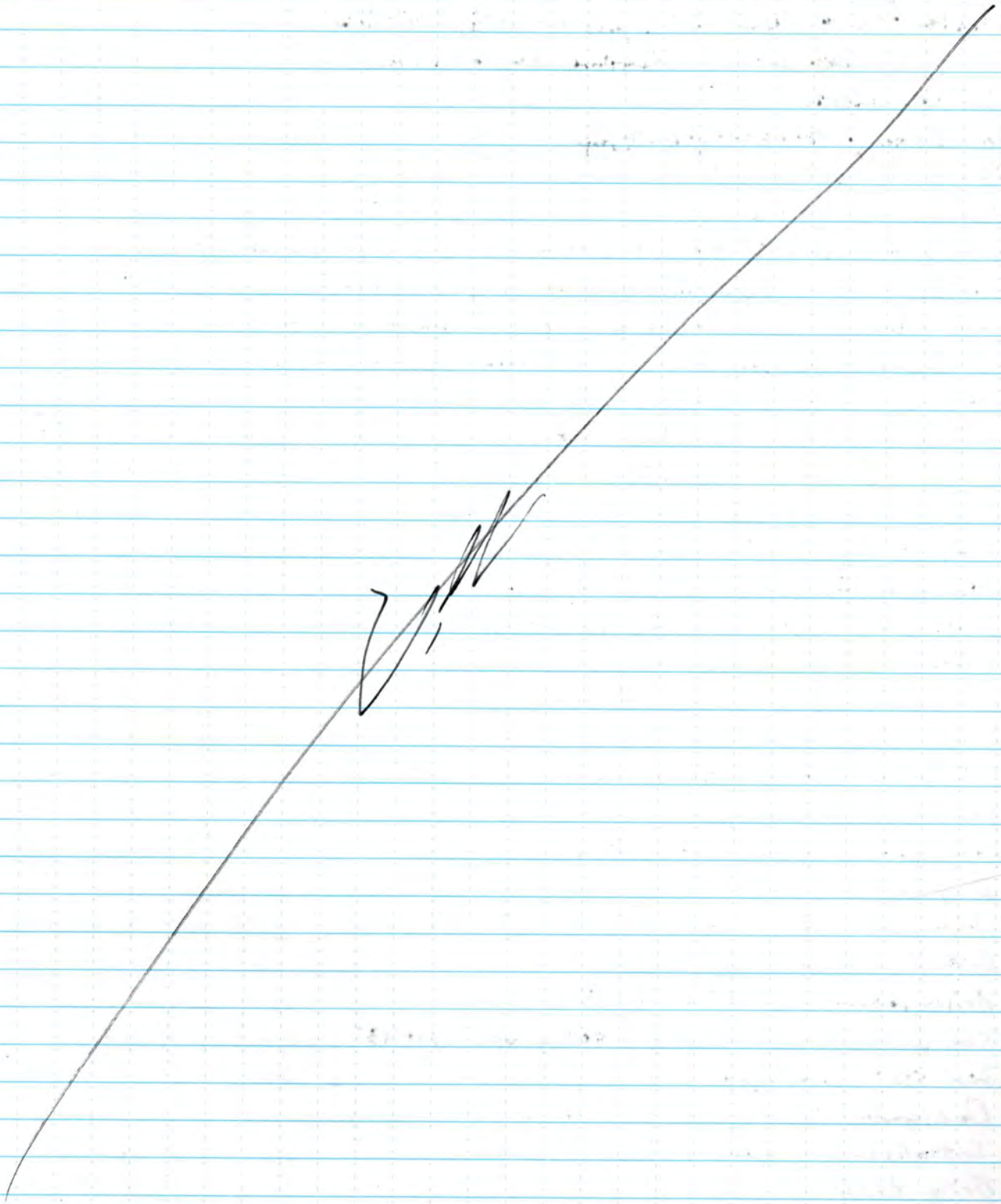
0700 CS/GPI onsite
0715 SR onsite; HAS meeting; Daily prep 5581055 4154
0740 JL Driving AS0062
0800 Pulling Core 40-50
0820 Core pulled; only 5' of recovery from unknown depth; Based on Lithology from AS0055 comparison; the core may have been collected ~38-43' ~~but~~ difficult to tell; In speaking w/ PM we are airing on the side of caution and setting well as AS0055 from 40.5'-~~to~~ 42.5'
0840 Well Set; Developing well
Bentonite Backfill - 30-45
30/65 Sand Sil) - 45-43.5
20/30 Sand 43.5-40
Screen 40.5-42.5; 1' Sump
Bentonite Seal; 40-37
0905 Development Complete; Grouting Borehole
0920 Installation Complete
0930 Drilling AS0061; previous stick hole cleared
0945 Pulling Core
1005 Core pulled Setting Screen 42.5'
1030 Well Set; Developing
1105 Development Complete; Grouting Borehole
1120 Installation Complete
~~1130~~ 1145 Drilling AS0068
1200 GPI Tech Lunch
1300 Drilling resumed; pulling Core 40-50'
1340 Core pulled; poor recovery; Setting well 41-43'
1400 Well Set; Developing
1425 Development Complete; Grouting Borehole
1440 Installation Complete
1450 Drilling AS0076
1515 Pulling Core

Scale: 1 square = _____

Rite in the Rain

12/03/14 HMP ✓ 112G08982

1540 Core Pulled; Setting well 43'
1600 Well Set; Hydro) Develop
1625 Hyd/Dev Complete; grout Backside
1640 Installation Complete
1650 Drilly AS0084
1720 Rig up
1730 Core pulled well set 43', clean



Scale: 1 square = _____

12/04/19 HMPN 1126-08982

Personnel : Chuck Sorden (CS) Geologist T+
Sue Rogers (SR) Geologist T+
Dave Longino (DL) Driller GPI
Ben Yarema (BY) Tech GPI
Jared Linn (JL) Driller GPI
Thomas Hansen (TH) Tech GPI

Weather : Sunny 51°F

PPE : Level D

Health & Safety (HAS) : Topics - PPE; Lifting JSA; Smoking

Objective : Continue AS well install

0700 CS/SR/GPI on site; HAS Meeting; Daily Prep
0735 JL crew setting AS0084 to screen 41'-43'
0755 Well Set; Develop; Standard 43' Set
0820 Development Complete; Grouting Backfill
0835 Install Complete; JL off site to Pick up additional Crew member from
0840 Badging
Setup 0920 on AS0085; Hot clean 5'
0950 Drilling Commenced; Mateen Shirin (MS) on site w/ GPI; CS Conducting HAS SSHASP review
0950 Pulling Core
1030 Core pulled; Issue w/ Core; Depths Convoluted; Setting 41-43
1050 Well Set; Hyd/Dev
1110 Hyd/Dev Complete; Grouting Backfill
1125 Installation Complete
1130 Drilling AS0092; previously Hot Clean
1200 -OUT of water; GPS taking hrs
1300 On Site; Daily reshoot; On Site 1245
1315 Pulling Core
1340 Core Pulled Setting Well 42-44
1400 Well Set; Hyd/Dev
1423 Hyd/dev complete; Grouting Backfill
1440 Installation Complete
1450 Drilling AS0103
1520 Pulling Core 40-50
1540 Core Pulled; Setting Screen 41.5-43.5
1610 Well Set; Hyd/Dev; Issue w/ Mono pump (Locked up)
1630 Hyd/Dev Complete
1655 Installation Complete

Scale: 1 square = _____

Rite in the Rain

12/05/2014 HMPN 112G 08982

Personnel : Chuck Scalia (CS) Geologist TT
Site Reports (SR) P.G. TT

Weather : Sunny 48°F
PPE : Level D
Health & Safety (HAS) : Topics - PPE; JDW; Critical Dig Dig
Objective : Complete AS well install

0700 TT/GPS on Site. HAS meeting; Daily prep. Going JL set up on AS008C Topsoil cable well 70.7°; 45.6' Light
0825 Drilling Commenced on AS008S
0905 Setting well 45.6, 46.6 TO Bottom of Sump
0925 well set; Hyd/Dev; well set ~ 47'; Sand dry Vibe at
0945 Hyd/Dev complete; grouting Borehole
1005 Installation complete
1020 Set up on AS0094 to set well 70.7° 46.6 to bottom of Sump
1030 Drilling AS0054
1105 Setting well
1125 well Set: Hyd/Dev
1150 Hyd/Dev Complete; grouting Borehole
1200 GPS offsite for lunch
1245 GPS on Site; Setting up on AS0105 to set well 70.7 46.6' Light to Sump
1410 Setting well
1430 well Set; Hyd/Dev
1455 Hyd/Dev complete; Grouting Borehole
1510 Installation Complete
1520 Set up on EW0117; Setting well 70.7°; 46.6' to Bottom of Sump
1530 Drilling Commenced
1605 Setting well
1615 well Set; Hyd/Dev
1645 Dev/Grout Complete; Grouting Borehole
1700 Installation Complete
1730 offsite

Scale: 1 square = _____

12/06/19 HMF N 112608982

Personnel : Chuck Sorden (CS) Geologist TF
Dave Logie (DL) Driller GPS
Jared Link (JL) Driller GPS
Ben Yeaman (BY) Tech GPS
Thomas Hansen (TH) Tech GPS
Malcom Smith (MS) Tech GPS

Weather : Sunny 53°F
PPE : Level D
Health & Safety (H&S) : Topics; PPE; Lifting; JDW
objectives : Continue AS well install

0700 CS/SR (Site Reqmts) onsite / GPS
0745 JL Drilling AS0128 setting well 70.7°; 46.6' +0.000 checked by
0805 Setting well
0820 Well Set; Hyd/Dev
0840 Hyd/Dev Capture; Grouting Borehole
0855 Installation Complete
0905 Setup on AS0138, Check clear 5'
0935 Drilling Core
1000 Core Pulled; Setting well 42.5'; Angled wells will remain the same @ 43'
Based on conversation w/ Chris Pipe in Lieu of Chris Hook
1015 Well Set; Hyd/Dev
1030 Hyd/Dev Capture; Grouting Borehole
1050 Setup on AS0151; Setting Angle well 78.30; 43.5'
1100 Drilling Commenced
1120 Setting well
1135 Well Set; Hyd/Dev
1150 Hyd/Dev Capture; Grouting Borehole
1210 GPS offset for lunch
1300 GPS onsite; Begin setup on AS0156; Setting well 69.1° Angle 47' Length for Sump
1320 Drilling Commenced
1345 Setting well
1410 Well Set; Hyd/Dev
1435 Hyd/Dev Capture; Grouting Borehole
1500 Install on Capture;

Scale: 1 square = _____

Rite in the Rain

12/09/19 HMFN 1126 0856-62

Personnel : Chuck Scrader (CS) Geologist TT
Sue Rogers (SR) P.G. TT
Jared Lantz (JL) Driller GPI
Dave Lagino (DL) Driller GPI
Ben Yarema (BY) Tech GPI
Thomas Hansen (TH) Tech GPI
Malcom Smith (MS) Tech GPI

Weather : Sunny 63°F
PPE : Level D
Health & Safety (HAS) : Topics - PPE; L. Frg. ; IDW

0725 TT onsite
0840 GPI onsite; HAS Meeting; unloading supplies; Daily prep
0930 Set up on AS020C / Setting well 61.5°; 50' Length to accommodate -hand clear 5'
0945 Drilling Commenced
1020 Setting Well
1040 Well Set; Hyd/Dev
1100 Hyd/Dev Complete; Grouting Backside
1120 Installation Complete
1130 Offsite Fuel
1215 GPI onsite
1235 Setting up on AS0015; Setting Well 790 27.5' - 1" Well
1250 Drilling Commenced
1315 Setting Well
1335 Well Set; Hyd/Dev
1400 Hyd/Dev Complete; Grouting Backside
1415 Installation Complete
1430 Setup on AS0047; prepared angle 54.7° 52.7 + 1 for slop TD will B 53.7 or 54'
1500 Drilling Commenced
1535 set well
1545 developing well
1615 grouting well
1630 Installation complete.
1640 Post-hole to 5' bls @ AS0047.
1645 GPI offsite

Scale: 1 square = _____

12/10/19 HMPN 112608982

Personnel : Chuck Sarch (CS) Geologist TT
Sue Rogers (SR) P.G. TT
Dave Longino (DL) Driller GPI
Ben Yoreman (BY) Tech GPI
Jared Lisle (JL) Driller GPI
Thomas Warson (TW) Tech GPI
Malcom Smith (MS) Tech GPI

Weather : Clear 65°F; Chance of Rain
PPE : Level D
Health & Safety (H&S) : Topics - PPE; Weather; Insects
Objective : Continue AS well install

0700 TT/ GPI onsite; H&S meeting; Daily prep
0730 Drilling AS0052 (previously hand cleared), Setting well 55° Angle 53' Length
0810 Setting well
0830 well Set; Hyd/Dev
0855 Hyd/ Dev Complete; Grouting Backside
0915 Set up on AS0063; hand cleared; propose 79.2° Angle 44.8 (1' extra to accumulate Sump
0930 Drilly Commenced
0950 Setting well @ 44.8'
1010 well Set; Hyd/Dev
1040 Hyd/ Dev Complete; Grouting Backside
1055 Installation Complete
1105 Set up on AS 0057
1120 Drilly Commenced
1145 Setting well
1200 well Set; Hyd/ Dev
1220 Hyd/ Dev Complete; Grouting Backside
1235 Installation Complete
1245 GPI offsite for lunch
1315 GPI onsite
1330 Set up On AS0046; Setting well 70.30 @ 46.7 (1' to accumulate Sump)
1355 Drilly Commenced
1420 Setting well
1430 well Set; Hyd/Dev
1450 Hyd/Dev Complete; G
1515 Installation Complete
1525 Set up on AS006 Setting well 81.30 @ 44.5 (Includes 1' Sump
1535 Drilly Commenced
1555 Setting well

Scale: 1 square = _____

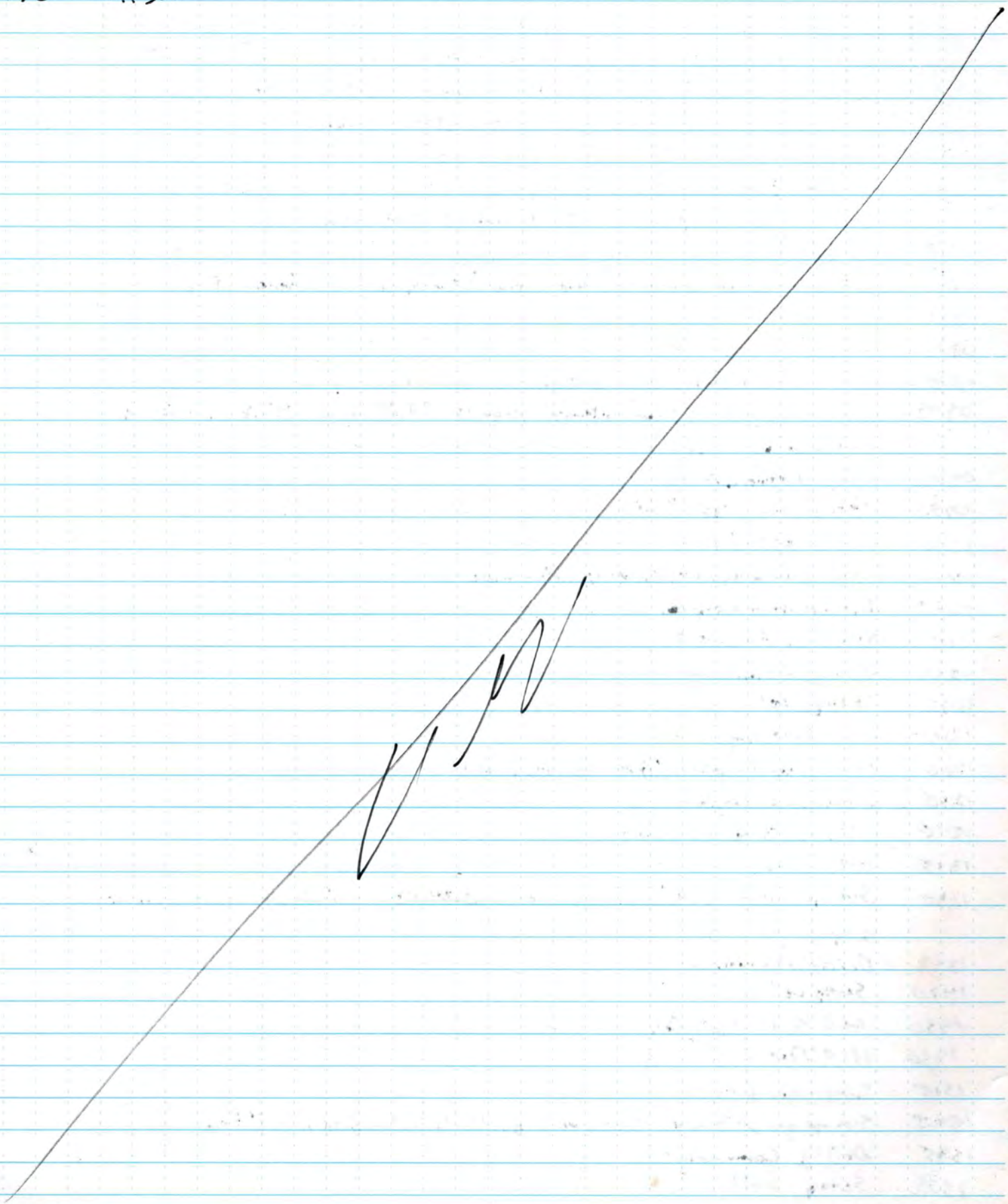
Rite in the Rain

1615 Well Set; Hyd/Dev

1635 Hyd/Dev Complete

1650 Installation Complete

170 Offset



Scale: 1 square = _____

12/11/2014 HMPN 112 G08982

Personnel : Chuck Sarden (CS) Geologist T+
Sue Regens (SR) P.G. T+
Dave Legris (DL) Driller GPI
Jared Linn (JL) Driller GPI
Ben Yerena (BY) Tech GPI
Malcom Smith (MS) Tech GPI
Thomas Watson (TW) Tech GPI

Weather : Dense Fog 69°F
PPE : Level D
Health & Safety (H&S) : Topics - L. Frog; Insects / Wildlife; PPE
Objectives : Continue AS well in sequ

0700 T+/GPI on site; JL @ Badger to escort Claude Hermel (CH) [Mechanic] to site; H&S meeting
0730 CH on Site; Begin replacing spindle assembly: FTI ~ 600 gals in Bottom
0915 Repair Complete
0925 Setting up on AS0051; Setting well 71°, 465' (Length includes 1' Sump)
0930 Drilling commenced; CH offsite
1000 Setting well
1015 Well Set; Hyd/Dev
1035 Hyd/Dev Complete
1050 Installation Complete
1100 Set up on AS0077; Setting well 70°; 46.8' Length to accommodate Sump; hand clear 5'
1105 Drilling Commenced
1125 Setting well
1140 Well Set; Hyd/Dev
1205 Hyd/Dev Complete; grouting Borehole
1220 Installation Complete; GPS tag lines
1320 GPI on site; Setting up on AS0050
1340 Drilling Commenced
1400 Pulling Core
1420 Core Pulled; Spoke w/ Chris Hook (CH); Setting well 42-44 (Sump+H&S)
1440 Well set; Hyd/Dev
1505 Hyd/Dev Complete; Grouting Borehole
1520 Installation Complete
1535 Drilling AS005C
1555 Pulling Core
1615 Core pulled; Spoke w/ Chris Hook; Setting 42-44
1630 Well Set; Hyd/Dev
1650 Hyd/Dev Complete; Grouting Borehole
1710 Complete

Scale: 1 square = _____

Rite in the Rain

12/12/19 HMPN 112G0898 2

Personnel : Chuck Serden (CS) Geologist
Dave Rogers (SR) P.G.
Dave Longino (DL) Driller GPI
Jared Lunn (JL) Driller GII
Ben Yarema (BY) Tech GPI
Malcolm Smith (MS) Tech GPI
Thomas Watson (TW) Tech GPS

Weather : Cloudy; Rainy; windy; 73°F

PPE : Level D

Health & Safety (HAS) : Topics- Inclement weather; PPE; JSA

Objectives : Complete AS well install

0700 CS/~~GPS~~/GPS onsite; HAS meeting; Daily prep
0725 Set up on AS 0018; pulled core 25-35; had clean
0735 Drilling Commenced
0800 Core pulled; per Chris Hook; Setting 32.5
0815 Well Set; Hyd/Dem
0835 Hyd/Dem Complete
0850 Install Complete
0905 Drilling AS0053
0955 Core Pulled; Spoke w/ Chris Hook; Setting well 41-43 (44' +0slip)
~~upper clay identified from 40-44 N4~~
1005 Well Set; Hyd/Dem
1025 HYD/Dem Complete Grouting Brackets
1040 Installation Complete
1050 Set up on AS0104; had clean 5'
1055 Drilling Commenced
1135 Core pulled spoke w/ CH; Setting Bottom of Screen @ 41 in shelby clay @ 43.5 TD 44.5'
1150 Well Set; Hyd/Dem
1210 Hyd/Dem Complete; Grouting Brackets
1225 Installation Complete; GPS taking lunch; CS/Kyle Loud assy. ribs/place Tarp on Roll off
1305 GPS onsite
1335 Drilling AS0116
1415 Core Pulled; Setting well 42.5' after spoke w/ CH; Heavy rain install Packer
1435 Well Set 43 +0 Slip; Cement up Screen 40-42; Hyd/Dem; Heavy rain Epic

Scale: 1 square = _____

12/13/12 HMPN 1126 08482

Personnel : Charles Sorden (CS) Geologist TT
Sue Regas (SR) P.G. TT
Dave Longino (DL) Driller GPI
Jared Lamb (JL) Driller GPI
Ben Thomas (BT) Tech GPS
Thomas Iverson (TI) Tech GPI
Malcom Smith (MS) Tech GPI

Weather : Cloudy; Light Rain 71°F
PPE : Level D
Health & Safety (H&S) : Topics - Incident review; PPE; JDN
Objectives : Continue AS well install

0700 TT/GPI onsite; H&S meeting; Daily prep
0725 Greeting ASO11C Borehole
0740 Installation Complete
0745 Setup on AS0027; Angle 74.5 33.2' Length
0750 Drilling Commenced
0810 Setting well
0820 Well Set; Hyd/Dw
0850 Hyd/Dw Complete; Greeting Borehole
0900 Install Complete
0910 Drilling AS002M; pulling core 25-35
0930 Core Pulled; Setting well 35'
0950 Well Set; Hyd/Dw
1015 Hyd/Dw Complete; Greeting Borehole
1030 Installation Complete
1040 Drilling MW0045; setting well screen 25'-35'
1110 1105 Setting well
1130 Well Set; Greeting Borehole
1150 Installation Complete
1220 GPI offsite Fulmer
1250 GPI onsite
1315 Drilling AS0025; Angle 64.7°-35.4' (Target Depth 32'
1335 Setting well
1350 Well Set; Hyd/Dw
1425 Hyd/Dw Complete
1450 Installation Complete; ~~Greeting Borehole~~ Incident water spray
1515 Site Secured; OFFSITE

Scale: 1 square = _____

Rite in the Rain

12/16/19 HMPN 112G08982

Personnel : Chuck Sorden (CS) Geologist TH
Sue Rogers (SR) P.G. TH
Dave Longwo (DL) Driller GPI
Jacob Linn (JL) Driller GPI
Ben Thomas (BT) Tech GPI
Thomas Hansen (TH) Tech GPI
Mateo Smith (MS) Tech GPI

Weather : Sunny 70°F

PPE : Level D

Hazlan / Safety (JHA) : Topics - Insects; Heat Stress; IDW

Objective : Continue AS well install

0800 CS/SR onsite
0915 GPI on Site; HASmeeting; Daily prep
0940 Drilling AS0139
1000 Pulling Core
1020 Core pulled; Spoon w/ CH; Setg Screen 40-42 (43 TD/Sump) Cly starts @ 42
1035 Well Set; Hyd/Dev
1160 Hyd/Dev Capped; grouy Backfill
1115 Installation Complete
1130 GPI offsite for lunch
1215 GPI onsite
1235 Drilling AS01296
1310 Core Pulled; Setting well 42.5'; Cly ID
1330 1335 Well Set; Hyd/Dev
1350 1355 Hyd/Dev Capped; grouy Backfill
1410 Installation Complete
1435 Drilling AS0202
1515 Core Pulled; Setg well 42.5' Cly Starts @ 42 Burn/ shell/ Sat
1535 Continue in Transition Zone; Should Be about U Set @ 42.5
1605 Well Set; Hyd/Dev
1630 Hyd
1645 Inst./ Capped
1700 offsite

Scale: 1 square = _____

2/17/19 HMPN 112 G08T82

Personnel : Chuck Sorden (CS) Geologist T4
Sue Regan (SR) P.G. T4
Dave Legard (DL) Metric GPI
Jared Link (JL) Driller GPI
Ben Yeoman (BY) Tech GPI
Thomas Watson (TW) Tech GPI
Mateen Samir (MS) Tech GPI

Weather : Sunny 77°F
PPE : Level D
Health & Safety (H&S) : Weather, Heat stress, PPE
Objective : Complete AS well install

0700 GSTT/GPI onsite; H&S meeting; Drill prep
0800 Setup on AS0198 (Had issue w/ Faulty master disconnect switch)
0805 Drilling Commenced
0820 Pulling Core
0850 Core Pulled; process meeting; 40-45' recovered; Setting well 46' TD w/ sump
0910 Well Set; Hyd/Dem
0935 Hyd/Dem Complete; grout Backside
0950 Installation Complete
1005 Driving AS0199
1040 Core Pulled; Setting well 42.5 w/ bottom 5' of screen in shelly clay core
1055 Well Set; Hyd/Dem
1115 Hyd/Dem Complete; Grout Backside
1135 Installation Complete
1200 Setup on AS0044; Setting well 76.5°; 45.5' to accomodate Sump
1216 GPI offsite for lunch
1250 GPI on site
1300 Drilling Commenced
1320 Setting well
1335 well Set; Hyd/Dem
1355 Hyd/Dem Complete; Grout Backside
1410 Installation Complete
1420 Setup on AS0048; Setting well 76.5 45.3' to accomodate sump
1445 Drilling Commenced
1500 Setting well
1515 Well Set; Hyd/Dem
1535 Hyd/Dem Complete; grout Backside
1550 Install Complete
1555 Setup on AS0053 Setting well 76.5° 48.3'
1605 Drilling Commenced

Scale: 1 square = _____

Rite in the Rain

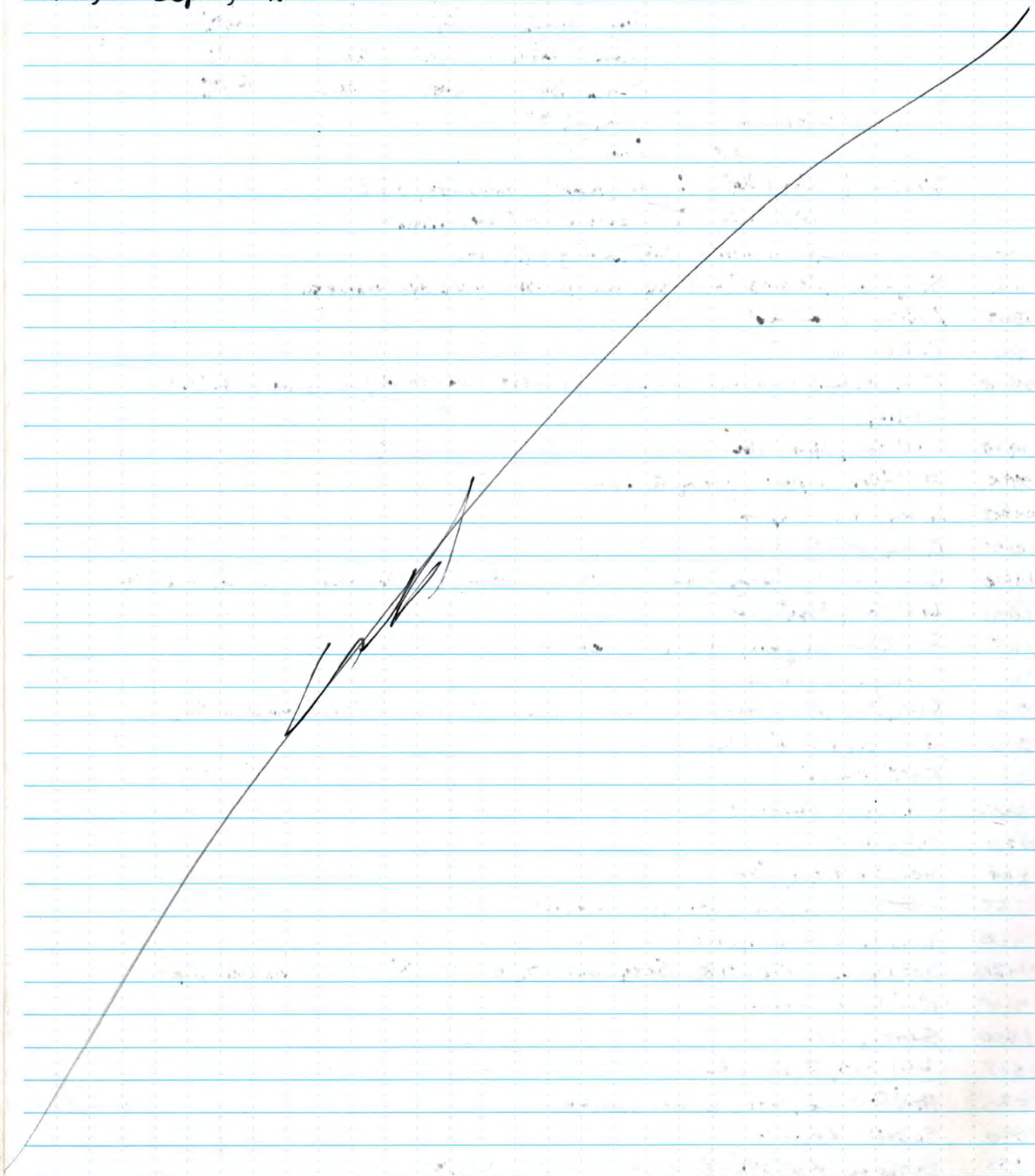
12/17/19 LC34 1126084182

1620 Setup well

1645 well set; Hyd/Dur

1710 Hyd/Dur Cyclonic; grassy Bentonite

1725 Complete; OFF



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12/18/2019 HMPN 112G08582

Personnel : Chuck Sorden (CS) Geologist T4
Sue Regnus (SR) P.G. T4
Dan Lungmus (DL) Driller GPI
Jered Linn (JL) Driller GPI
Ben Yeamans (BY) Tech GPI
Thomas Watson (TW) Tech GPI
Malcom Smith (MS) Tech GPI

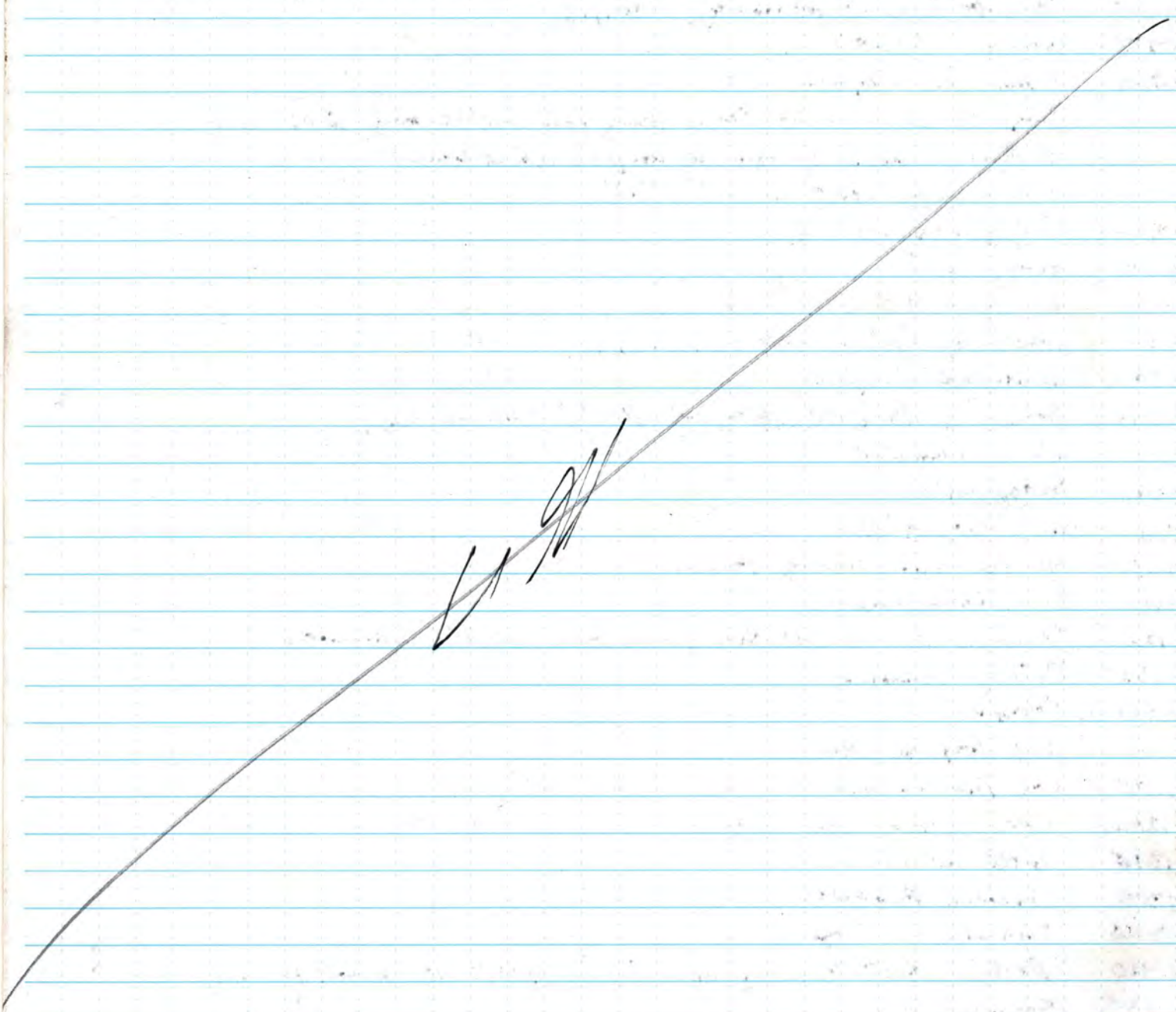
Weather : Windy/Misty 60°F
PPE : Level D
Health & Safety (HAS) : Topics - PPE; Slips-Trips-Falls; FOD
Objective : Continue AS Drilling
TT
0700 CS/GPI on site; HAS meeting; Daily prep
0735 Going ASOO53
0750 Installation Complete
Setup up on ASOO58; Due to Heavy rain, will be many survey points
4' Back along Drill length to keep rig out of water
- New Angle/Length = 65.5° - 47.3'
0800 Drilling commenced
0835 Setting well
0850 Well set; Hyd/Dev
0915 Hyd/Dev Complete; Going Borehole
0930 Installation Complete
0940 Setup on ASOOC5; setting well 54.3 44.2 for Surv
0955 Drilling Commenced
1010 Setting well
1025 Well set; Hyd/Dev
1050 Hyd/Dev Complete; Going Borehole
1105 Installation complete
1120 Setup on ASOO 64; setting well 61° - 50.2' (to account for slip)
1130 Drilling Commenced
1150 Setting well
1210 Well set; Hyd/Dev
1235 Hyd/Dev Complete
1240 GPI offsite for lunch
1315 GPI on site
1340 Going Borehole
1355 Installation Complete
1410 Drilling ASOO73; setting well 79.5° 44.7 to account for slip
1435 Setting well
1450 Well set, developing/hydrating
1515 Well development/hydration complete, grouting

Scale: 1 square = _____

Rite in the Rain

12/18/19 HMPN 112G08282

(cont)
1530 well installation complete.
1545 setup @ AS0072, setting well at angle - post hole to 5ft b/s @ angle, 70.7° to 46.5'
1600 Drilling commenced.
1620 Setting well
1630 Well set, developing/hydrating
well development / hydration complete, grouting
1645 Installation complete
1720 leaving job site. for evening



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12/19/19 HMPN 112G08982

Personnel : Chuck Sorden (CS) Geologist TH
· Sue Rogers (SR) P.G TH
· Dave Longmo (DL) Driller GPS
· David Link (DL) Driller GPS
1245 · Thomas Hansen (TH) Tech GPS
1400 Only AS0054 · Ben Yerxa (BY) Tech GPS
· Malcom Smith (MS) Tech GPS
Weather : Sunny 63°F
PPE : Level D
Health ; Safety (H&S) : Topics – Underground utilities; PPE; SOW
Objectives : Continue AS well install

0700 TH/GPS on site; H&S meeting; Daily prep
0730 Personal UST Started in vicinity of AS0073/AS0023; all Due Diligence Complete
0815 Drilly AS0045; poly Core 40-50
0855 Core pulled; spoke w/ Chris Hoch (CH); Setting well 45' TD; clay ID starting @ 44'; only 1' recovery
0915 Well Set; Hyd/Dev
0940 Hyd/Dev Complete; grouting Bucket
1000 Installation Complete
1010 Drilly AS0049
1040 Core pulled; Setting well 44' TD (includes sump)
1055 Well Set; Hyd/Dev
1120 Hyd/Dev Complete; grouting Bucket
1130 Installation Complete
1140 Setup on AS0054; hand clear
1150 Drilly Commenced
~~1155~~ ~~Pulling Core~~
1215 Core Pulled; Setting well
1235 Well Set; Hyd/Dev
1245 GPS offsite Finished
1330 GPS onsite; Hyd/Dev Complete; grouting Bucket
1350 Installation Complete
1420 Drilly AS0055
1445 Core Pulled; Setting well 40-42; Sump 4043 Clay ~~Set~~ Starts @ 42.5-43
1500 Well Set; Hyd/Dev
1525 Hyd/Dev grouting Bucket
1540 Installation Complete
1555 Drilly AS0060
1630 Core Pulled; Setting well 44.5' TD
1645 Well Set; Hyd/Dev
1705 Hyd/Dev Complete; grouting Bucket
1720 Offsite

Scale: 1 square = _____

Rite in the Rain

12/20/14 HMPV 112G0652

Personnel : Chuck Sorden (CS) Geologist TT
Sue Regens (SR) P.G. TT
Dave Legrand (DL) Driller GPI
Jared Limb (JL) Driller GPI
Ben Yeremia (BY) Tech GPI
Thomas Lautsch (TW) Tech GPS
Malcom Smith (MS) Tech GPS

Weather : Sunny 66°F
PPE : Level D
Health & Safety (HAS) : Topics — PPE; Personal Denab; IDW
Objectives : Continue AS well install

0700 ~~CS/to~~ TT/GPS onsite; HAS meeting; Daily prep
0745 Drilling AS0081; Setting well 78.3° 44.9 TD
0805 Setting well
0820 Well Set; Hyd/Dem
0840 Hyd/Dem Complete; Grouting Backside
0855 Installation Complete
0905 Driving AS0070
0925 Setting well
0945 Well Set; Hyd/Dem
1020 Hyd/Dem Complete; Grouting Backside
1025 Installation Complete
1040 Driving AS0078; Set well 78.3° 44.9 TD
1105 Setting Well
1135 Well Set; Hyd/Dem
1140 Hyd/Dem Complete; Grouting Backside
1300 Offsite

Scale: 1 square = _____

01/06/2020 HMPN 112608482

Personnel : Chuck Sardou (CS) Geologist TW
Sue Rogers (SR) P.G. TR
Dave Legros (DL) Driller GPI
Gamer Rivera (GR) Tech GPI
Jared Link (JL) Driller GPI
Thomas Hoosen (TH) Tech GPI
Malcom Smith (MS) Tech GPI

Weather : Sunny 52°F
PPE : Level D
Health & Safety (H&S) : Topics – SSHASP; PPE; Hydration
objectives : Continue AS well install

1000 CS on site; SR/GPI driving around assessing operations; CS Marking new locations along E side of Gate; JL Drilling AS0067
GPI offsite for lunch @ 45'TD
1215 GPI onsite; Setting up on AS0020; pulling Core 25-35'; Install clean 5'
1240 Drilling Commenced
1305 Core Pulled; Spoke w/ Chris Hoon; thin silty lens @ 33.5'-33.6'
Setting well 32'-34'
1320 Well Set; Hyd/Dev
1345 Hyd/Dev Cyclone; Grouting Backside
1406
~~1410~~ Install of Cyclone
1410 Drilling AS0019 & Setting well 72.3° (72.5) 33.6' Length
1430 Setting well
1445 Well Set; Hyd/Dev
1505 Hyd/Development Cyclone; grouting Bentonite
1520 Installation Complete
1530 Drilling AS0066; previously Used
1555 Pulling Core 40-50
1615 Core pulled; setting Screen 45-47 after speaking w/ CH; TD 48'
1635 Well Set; Hyd/Dev
1706 Hyd/Dev Complete; Will grout in AM; Offsite

Scale: 1 square = _____

Rite in the Rain

07/07/2020 HMPN M2608982

Personnel : Chuck Scudder (CS) Geologist Tt
Sue Rogers (SR) P. Geologist Tt
Dave Longino (DL) Driller GPI
Jarod Linn (JL) Driller GPI
Gene Rivera (GR) Tech GPI
Thomas Lotsen (TL) Tech GPI
Malcom Smith (MS) Tech GPI

Weather : Clear 47°F
PPE : Level D
Health & Safety (H&S) : Topics - PPE; smoking; JSPW
observations : Continue AS well inserts

0650 CS/DL/GR onsite
0700 JL crew/SR onsite; H&S meeting; Daily prep
0730 JL Crew ASOOGG
0745 ASOOGG Grouting
0810 Set up on AS0172; location is ~4' from marked utility there is ~5-7' BLS to top; moving point 3' west to ensure augers will get below utility
0835 Drilling Commenced; Setting well 74.5°; 45.6' Length
0855 Setting well
0915 Well Set; Hyd/Dw
0935 Hyd/Dw Complete; Grouting Backside
0950 Installation Complete
1005 Drilling AS0176; moved 3' westward along drill line to avoid utilities Setting well 635° 44' to Sump
1040 Setting well
1100 Well Set; Hyd/Dw
1125 Hyd/Dw Complete; grouting Backside
1140 Install complete; GPI offsite
1230 GPI onsite; Setting up on AS0175; moving Back 3'; Setting 74.5° 45.6'
12558 Drilling Commenced
1315 Setting well
1330 Well Set; Hyd/Dw
1355 Hyd/Dw Complete; Grouting Backside
1410 Installation Complete; setting up on AS0170; Hand Dig 5'
1420 Drilling Commenced
1435 Pulling Core
1450 Core Pulled; Spoke w/ CH; Setting well 41'-43' (44' TO for Sump)
1510 Well Set; Hyd/Dw
~~1510~~ 1533 Hyd/Dw Complete; grouting Backside
1550 Installation Complete
1605 Drilling AS0179; Setting well 63.2° 44.2' TD

Scale: 1 square = _____

9/07/2020 HMPN 112G08982

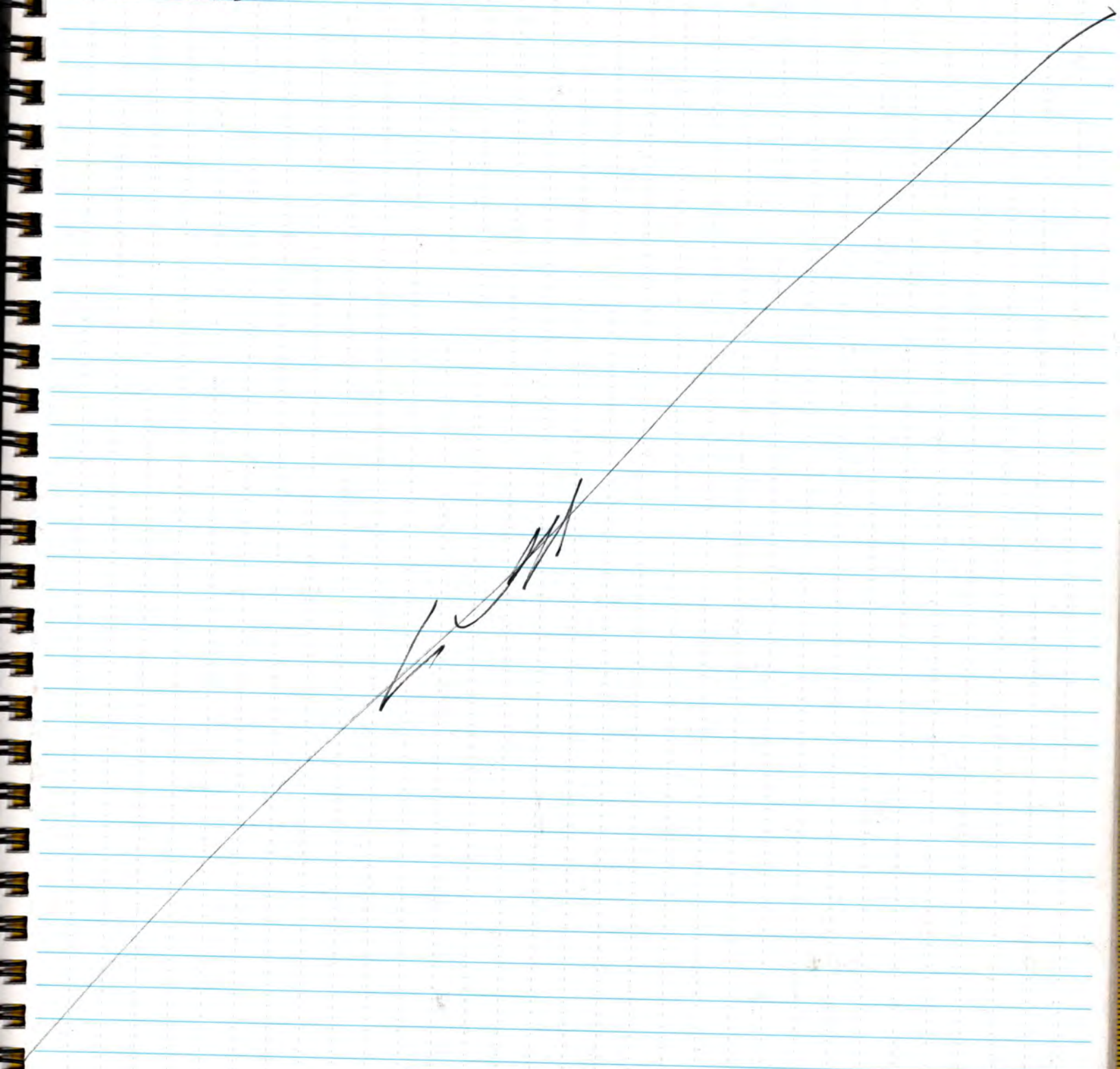
1625 Setup well

1640 well set; Hyd/Dev

1705 Hyd/Dev Completed; Grouting Borehole

1720 Instrt/ Logger

1730 Offsite



Scale: 1 square = _____

Rite in the Rain

01/08/2020 HMPN 112G08982

Personnel : Chuck Sorden (CS) Geologist TT
Sue Regnier (SR) P.G. TT
Dave Legino (DL) Driller GPI
Gene Rivera (GR) Tech GPI
Jared Link (JL) Driller GPI
Thomas Watson (TW) Tech GPI

Weather : Sunny 48°F
PPE : Level D
Health & Safety (HAS) : Topics - PPE; Hydration; JDW
Objectives : Continue AS well install

0700 TT/GPI on site; HAS meeting; Pre-trip
0730 Set up on AS0178; moved Back 3'; Setting well 74.5° 45.6' (Includes Sup); Had clear 5'
0750 Drilling commenced
0825 Well Set; Hyd/Dwn
0845 Hyd/Dwn Complete; grouting Bucket
0900 Installation Complete; Setting up on AS0174; Moved 1.0' W; had clear 5'
0910 Drilling Commenced
0925 Rig Core
0940 Core pulled; Spare w/ chris Hook (CH); Setting Screen 42-44; Sup to 45
1000 Well Set; Hyd/Dwn; replacing Pipe Seams on rig during Hyd/Dwn
1030 Issue w/ removal of 1 set of Seams; Hyd/Dwn Complete
1110 Replacement Complete; grouting Bucket
1125 Installation Complete
1130 Setting up on AS0182; Moved 3' W. Setting well
1140 Drilling commenced
1200 Setting well
1215 Well Set; Hyd/Dwn
1830 GPI offsite for hour
1300 GPI on site
1315 ~~Grout~~ Grouting Bucket
1335 Installation Complete
1340 Set up on AS0204; had clear 5'
1350 Drilling Commenced
1420 Core pulled; Spare w/ CH; Setting well 43-45; 46 TD
1435 Well Set; Hyd/Dwn
1455 Hyd/Dwn Complete; grouting Bucket
1510 Installation Complete
1530 Drilling AS0208; Setting well 51.3° 56'

Scale: 1 square = _____

01/08/19 HMPN 112G08982

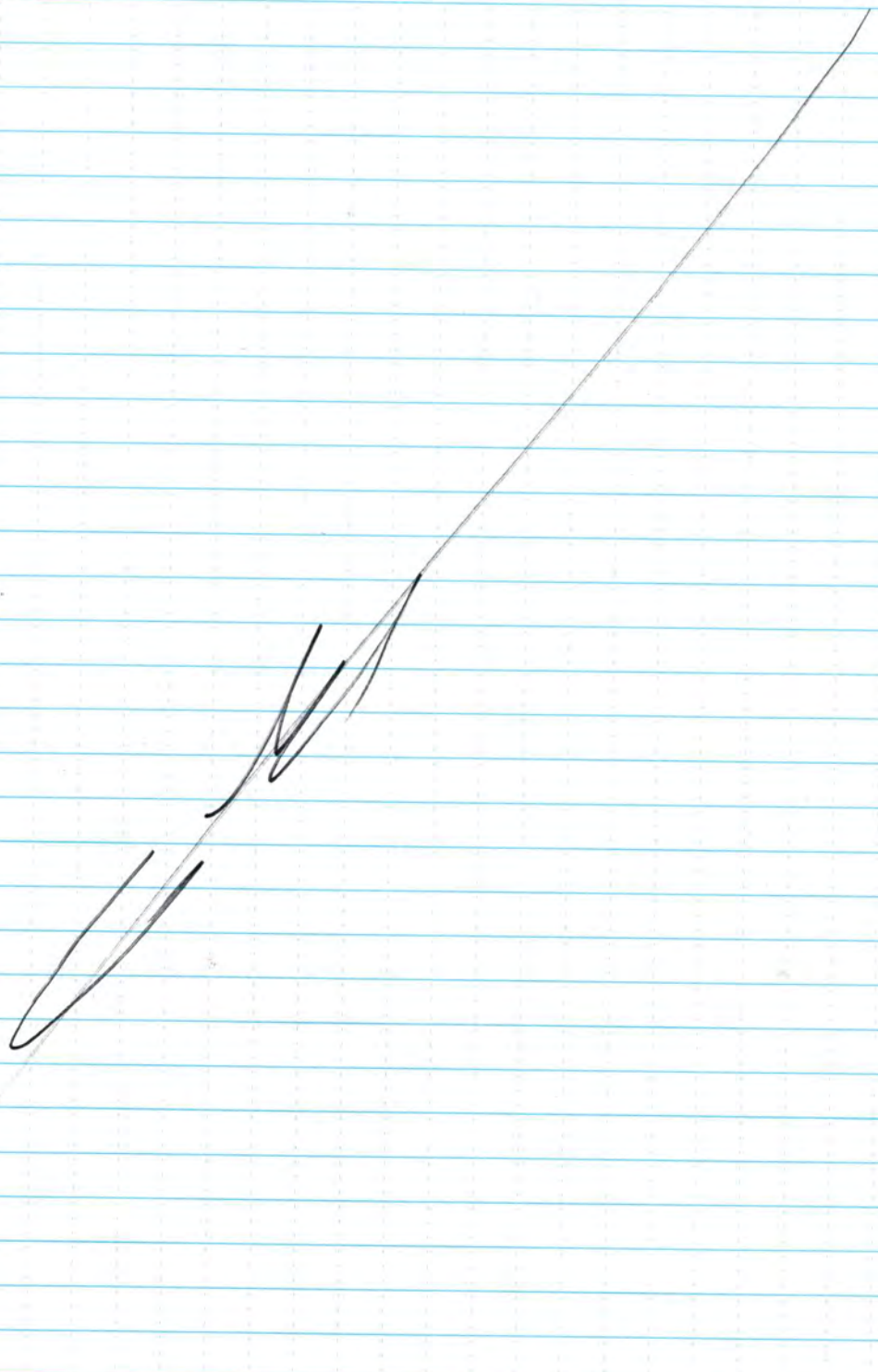
1625 Setting Well

1640 Well Set; Hyd / Dev

1705 Hyd / Dev Complete; Grouting Bentonite

1720 Install Complete

1730 Off Site



Scale: 1 square = _____

Rite in the Rain

01/09/2020 HMPN 112G0182

Personnel : Chuck Serden (CS) Geologist TT
Sue Rogers (SR) P.G. TT
Dave Longino (DL) Driller GPI
Jared Linn (JL) Driller GPI
Thomas Watson (TW) Tech GPI
Malcom Smith (MS) Tech GPI
Gianna Rivera (GR) Tech GPI

Weather : Sunny 73°F
PPE : Level D
Health & Safety (HAS) : Topics - Hydration; Smoking; IDW
objectives : Continue AS well install

1030 CS on site; SR/GPI already up and running; JL set up on AS0209
Setup well 49°; 58.2' Length
1100 Setup well
1120 Well Set; Hyd/Dev
1145 Hyd/Dev Complete; grout Bentonite
1200 Installation Complete; GPI offsite for Lunch
1230 GPI on site; Setup up on AS0203; hard clay 5'
1310 Drilling Commenced
1330 Pulling Core 40-50
1350 Core Pulled; Sparged w/ CH; only 3'/10' recovered; all shell; Setup well/ 42-44 (45' TD)
1415 Well Set; Hyd/Dev
1440 Hyd/Dev Complete; grout Bentonite
1505 Installation Complete
1515 Setup on AS0140; Setup well 71°; 44.6' TD
1530 Drilling Commenced
1600 Setup well
1620 Well Set; Hyd/Dev
1645 Hyd/Dev Complete; grout Bentonite
1705 Installation Complete
1720 Offsite

Scale: 1 square = _____

01/10/2020 HMPN 112G08982

Personnel : Chuck Sardeson (CS) Geologist T1
Sue Rogers (SR) P.G. T1
Dave Longmire (DL) Driller GPI
Jared Links (JL) Driller GPI
Gama Rivera (GR) Tech GPI
Thomas Isaacson (TI) Tech GPI
Malcom Smith (MS) Tech GPI

Weather : Sunny 69°F
PPE : Level D
Health & Safety (HAS) : Topics - Hydration; PPE; Spotters
Objective : Continue AS well install

0700 CS/GPI T1/GPI onsite; HAS meeting; Daily Prep
0730 Set up on AS0071; held Clients'
0745 0750 Attempt Drilling Location
0805 Pull Core
0820 Core pulled; Spacer w/ CH; Setting well 43-45 (46' TD); 4.5' recovery
0840 Well Set Hyd/Dev
0905 Hyd/Dev Complete; grout Bucket
0920 Installation Complete
0930 Drilling AS0079
0955 1000 Core pulled; Setting well 46.5' TD
1015 Well Set; Hyd/Dev
1040 Hyd/Dev Complete; grout Bucket
1105 Installation complete
1120 GPI offsite for lunch
1200 GPI onsite Drilling AS0080
1255 Core Pulled; spacer w/ CH; Setting well 46.5' TD
1320 Well set; Hyd/Dev
1345 Hyd/Dev Complete; grout Bucket
1350 Heavy rain; Drilling paused
1410 Drilling resumed
1430 Installation Complete
1445 Offsite

Scale: 1 square = _____

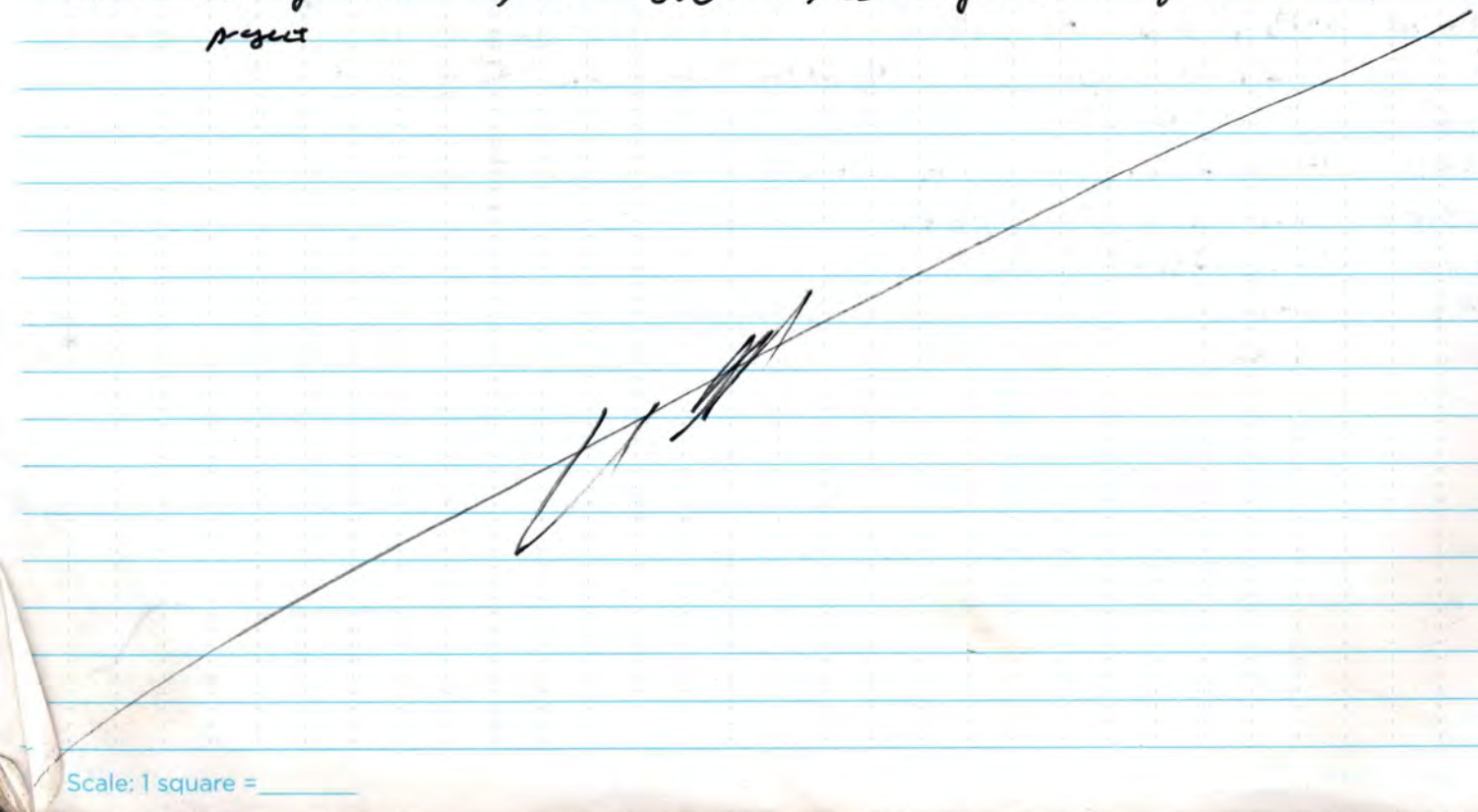
Rite in the Rain

01/15/2020 HMPN 112G08482

Personnel : Chuck Sardo (CS) Geologist TI
Dave Legard (DL) Driller GPI
Jared Link (JL) Driller GPI
Gena Rivera (GR) Tech GPI
Thomas Lawson (TW) Tech GPI

Weather : Sunny 68°F
PPE : Level D
Health & Safety (HAS) : Topics - Wildlife; PPE; Lifting
Objectives : Cores AS well install

0700 CS/GPI on site; HAS meeting; Drill prep; DL making final preps to take SL rig to Orlando
0730 DL offsite
0800 Drilling AS0127
0830 Poly Core
0850 Core Pulled; Setting well 44' TD Screen 41'-43'
0905 Well Set; Hyd/Dev
0930 Hyd/Dev Complete; Gravity Backfill
0945 Installation Complete
1000 Drilling AS0194
1015 Pulling Core 40-50
1030 Core pulled; Setting well 43-45; 46' TD
1045 Well Set; Hyd/Dev
1110 Hyd/Dev Complete; Gravity Backfill; SR on site
1125 Installation Complete
1130 Drilling AS0148; SR logging Core; CS working on other aspects of project



Scale: 1 square = _____

01/13/2020 HMPN 112G0852

Personnel : Chuck Sanders (CS) Geologist TT
Sue Rogers (SR) P.G. TT
Dave Legro (DL) Driller GPI
Jared Lunn (JL) Driller GPI

Weather : Sunny 73°F
PPE : Level D
Hazards/Safety (HAS) : Topics – PPE; Heat Stress; Lifting
Objectives : Continue AS well install

0800 TT onsite
0910 GPI on site; HAS meeting; unloading supplies
0940 Set up on AS0022; hand clear 5' need 1' soil
0950 Drilling commenced
1020 Core pulled; Setting Screen 33-35 (1' in SILTY Sandy Clayey Zone
1040 Well Scr; Hyd/Dwn
1105 Hyd/Dwn Complete
1120 Install.
1130 GPI offsite for lunch
1210 GPI on site; MS has Form. Emergency cell needs to be picked up @ Bodgy; ~~SR~~ JL offsite
1240 JL onsite; Set up on AS0021; Setting well cap; 34.5'
1255 Drilling Commenced
1325 Setting well
1335 Well Scr; Hyd/Dwn
1405 Hyd/Dwn Complete; going Backfill
1410 mobilization to HMPN-AS0028. (written by SR)
1435 rig starting up after making call to GPI office about oil leak (drilling commenced 10-minutes prior) 30'-32' target
1500 ← soil samples collected.
Consulted w/ CS - he said we could push it if
1510 needed to 34'-35'. So SR called C. Hook. CH
said keep it at the design of 30'-32' So
total depth 32'. (No sump w/ 1 Linch AS well)
PID Readings: 0.0 ppm at all depths (1'-intervals)
1515 setting well
1530 Developing well.
1555 well ~~installation complete~~ Development Complete; going Backfill
1610 Installation Complete
1635 Set up on AS0023; Point is 7.3' AMSL from Terminus

Scale: 1 square = _____

01/13/2020 HMPN 112G08982

1645 · Drilly Commenced

1700 Setty well

1720 Well Set; GPS/ Trobble

Scale: 1 square = _____

Rite in the Rain

01/14/2020 HMPN 112 G084482

Personnel : Chuck Sorden (CS) Geologist TF
Sue Rogers (SR) P.G. TY
Dave Longmire (DL) Driller GPI
Jared Link (JL) Driller GPI
Gama Rivera (GR) Tech GPI
Thomas Watson (TW) Tech GPI

Weather : Sunny 64°F
PPE : Level D
HeaHth & Safety (HAS) : Topics – Heat Stress; PPE; SDW
Objective : Continue AS well installs

0700 CS/GPI onsite; Develop AS0023 Pair pump
0730 SR on site; HAS meeting; Daily prep; Gearing AS0023
0745 Installation Complete
0800 Drilling AS002G
0820 Core pulled; 2~3" silty clay @ 33.5; 2" silty clay @ 34-34.25; Setting well 32.5'-34.5' after-Spacing w/ CH
0835 Well Set; Hyd/Dev; CH caustic decide Natural/Chem Addition onsite
0900 Hyd/Dev Complete; grouting Bentonite
0920 Installation Complete
0930 Drilling AS0025
0950 Spacers/CH; Setting well 32-34
1005 Well Set; Hyd/Dev
1030 Hyd/Dev Complete; Grouting Bentonite
1050 Installation Complete
1105 Drilling MW0027; Setting Screen 40-45'
1135 Setting well
1135 Well Set; grouting Bentonite
1150 Installation Complete
1155 Drilling MW0026; Setting well 45-50
1210 Setting well 45-50
1225 Well Set; GPI offsite
1300 GPI onsite
1310 Grouting Bentonite
1330 Installation Complete
1400 Drilling AS0129
1425 Pulling Core
1440 Core pulled; Spacers w/ CH; Setting well 42-44 (45' TD
1500 Well Set; Hyd/Dev
1525 Hyd/Dev Complete

Scale: 1 square =

01/20/2020 HMPN 112 G-08582

Personnel : Chuck Sorden (CS) Geologist T4
Sue Rogers (SR) P.G. T4
Dave Longino (DL) Driller GPI
Josh Link (JL) Driller GPI
Thomas Watson (TW) Tech GPI
Gama Rivera (GR) Tech GPI
Micky Ritter (MR) Tech GPI

Weather : Sunny 49°F
PPE : Level D
Health & Safety (H&S) : Topics - SS HASP; PPE; JSA
Objectives : Create AS well install

0800 CS/SR on site
0815 GPS on site; unload Equipt/Supplies; H&S meeting
0955 Drilling (JL) AS0087
1010 Issue w/ Rig
1045 Issue Resolved
1115 Core pulled; Setting well 45' TD; only 46-45' recovered
1135 Well Set; Hyd/Dev
1200 Hyd/Dev Complete; grouting Backside
1220 Final Complete; offsite @ 1230
1330 On site; Setting up on AS0075
1350 Drilling Commenced
1423 Core pulled; Setting well 46.5' TD
1445 Well Set; Hyd/DEV
1515 Hyd/Dev Complete; grouting Backside
1530 Installation Complete
1540 Drilling AS0106
1620 Core Pulled; Setting well 43.5'; 44.5' TD
1630 Well Set; Hyd/Dev
1655 Hyd/Dev Complete; grouting Backside
1710 Installation Complete
1723 Offsite

Scale: 1 square = _____

Rite in the Rain

01/21/2020 HMF N 112608982

Personnel : Chuck Scrdin (CS) Geologist TT
Sue Rogers (SR) P.G. TT
Dave Longio (DL) Driller GPI
Josh Linn (JL) Driller GPI
Gama Rivera (GR) Tech GPI
Thomas Lowen (TL) Tech GPI
Micky Ritter (MR) Tech GPI

Weather : Sunny 46°F
PPE : Level D
Health & Safety (H&S) : Topics - Utilities; Wildlife; PPE
Objectives : Convert AS well install

0700 TT/GPI onsite; H&S meeting; Daily prep
0745 Set up on AS0210; Moved 2'W to avoid overhead power line w/ Tape ~ 3'
0815 Drilling Commenced; Setting well 70°; 47'
0840 Setting well
0855 Well Set; Hyd/Dev
0920 Hyd/Dev Complete; grouting Borehole
0935 Installation Complete
0945 Set up on AS0187; Moved 2'W to avoid Large water line; Hand clearing to ID utility
1000 Drilling Commenced; Setting well 72° ÷ 46.5' TD (Including Sump)
1025 Setting well
1040 Well Set; Hyd/Dev
1105 Hyd/Dev Complete; grouting Borehole
1120 Installation Complete; Set up on AS0183
1155 GPI offsite for lunch
1235 GPI onsite
1240 Drilling Commenced; Setting well 61° 50' Moved 1.5' W
1310 Setting well
1325 Well Set; Hyd/Dev
1355 1400 Hyd/Dev Complete; Grouting Borehole
1410 Installation Complete; Setting up on AS0188
1420 Drilling Commenced; Set to AS0188 83° 44.5' TD; Moved ~2' W
1450 Setting well
1505 Well Set; Hyd/Dev
1530 Hyd/Dev Complete; grouting Borehole
1545 Installation Complete
1600 Drilling AS0184; Moved ~2' W; Setting 72°-46.5'
1630 Setting well · 1645; Well Set; Hyd/Dev; 1710; Hyd/Dev Complete grouting Borehole
1725 Installation Complete, Offsite

Scale: 1 square = _____

01/22/2020 HMPN 112G0898

Personnel : Chuck Sorden (CS) Geologist T+
Sue Rogers (SR) P.G. T+
Dave Longino (DL) Driller GPI
Josh Lunt (JL) Driller GPS
Thomas Warren (TW) Tech GPS
Micky Ritter (MR) Tech GPS
George Riley (GR) Tech GPS

Weather : Sunny; high 34°F
PPE : Level D
Health & Safety (HAS) : Critical Decon; utilities; PPE
Objectives : Continue AS well installation

0700 T+/GPI on site; HAS meeting; Daily prep; CS spoke w/ Duty office; received a call back informing CS that today is in fact a critical Day due to addition of Atlas WDR; Moving to East side of Site
0740 Set up on AS0030, setting well
0800 Drilling Commenced
0835 Setting well
0850 Well Set; Hyd/Dem
0915 Hyd/Dem Complete; grouting Borehole
0930 Installation Complete
0950 Drilling AS0032
1025 Core pulled; Setting well 27-29 (Clg ID'd @ ~ 29-30
1045 Well Set; Hyd/Dem
1110 Hyd/Dem Complete; grouting Borehole
1125 Installation Complete; GPS offsite
1215 GPI onsite; Setting up on AS0031
1245 Drilling Commenced
1305 Setting well
1320 Well Set; Hyd/Dem
1345 Hyd/Dem Complete; grouting Borehole
1400 Installation Complete
1410 Setup on AS0043; originally vertical; but is edge of pond; Setting well 72.5°, 33.5'
1420 Drilling Commenced
1440 Setting well
1458 Well Set; Hyd/Dem
1525 Hyd/Dem Complete; grouting Borehole
1545 Installation Complete

Scale: 1 square = _____

Rite in the Rain

01/23/2020 HMPN 1126085582

Personnel : Chuck Sorden (CS) Geologist TT
Sue Rogers (SR) P.C. TT
Dave Longino (DL) Driller GPI
Jared Link (JL) Driller GPI
Gavin Rivera (GR) Tech GPI
Mickey Ritter (MR) Tech GPI
Thomas Whitson (TW) Tech GPI

Weather : Rain/Fog 53°F
PPE : Level D
Health & Safety (HAS) : Topics – Utilities; Weather; PPE
Objectives : Continue AS well install

0700 TT/GPI onsite; HAS meeting; Daily prep; Heavy Rain
0800 Driving AS0180; Setup well @ 61°–50' (includes 1' sump
0835 Setup well
0850 Well Set; Hyd/Dev
0915 Hyd/Dev Complete; grouting Backside
0930 installation complete; Claude Harmel CCH on site
1100 Repair Complete; Setup on AS0185; marg 1.5' W
1120 Drilling Commence
1230 Well Set; instrument heavy ~~maintenance~~ passed install multiple times
GPI offsite; Developing
1315 GPS onsite -
1330 Grouting Backside
1345 Installation Complete
1400 Drilling AS0181; moved 1.5' W; Setup 72° 46.5 TD
1430 Setup well
1445 WellSet Hyd/Dev
1510 Hyd/Dev Complete; grouting Backside
1525 Installation Complete; Setup on AS0177; Shifted 5' S crew of 181
SS.6° 53.1 (includes sump) @ 6' Auger issue 177 and 181 cross 181
Should Be 8.6' Deeper than 177; recalculate angles for 213/143
1550 Driving Complete
1620 Setup well
1635 Well Set
1705 Hyd/Dev Complete; grouting Backside

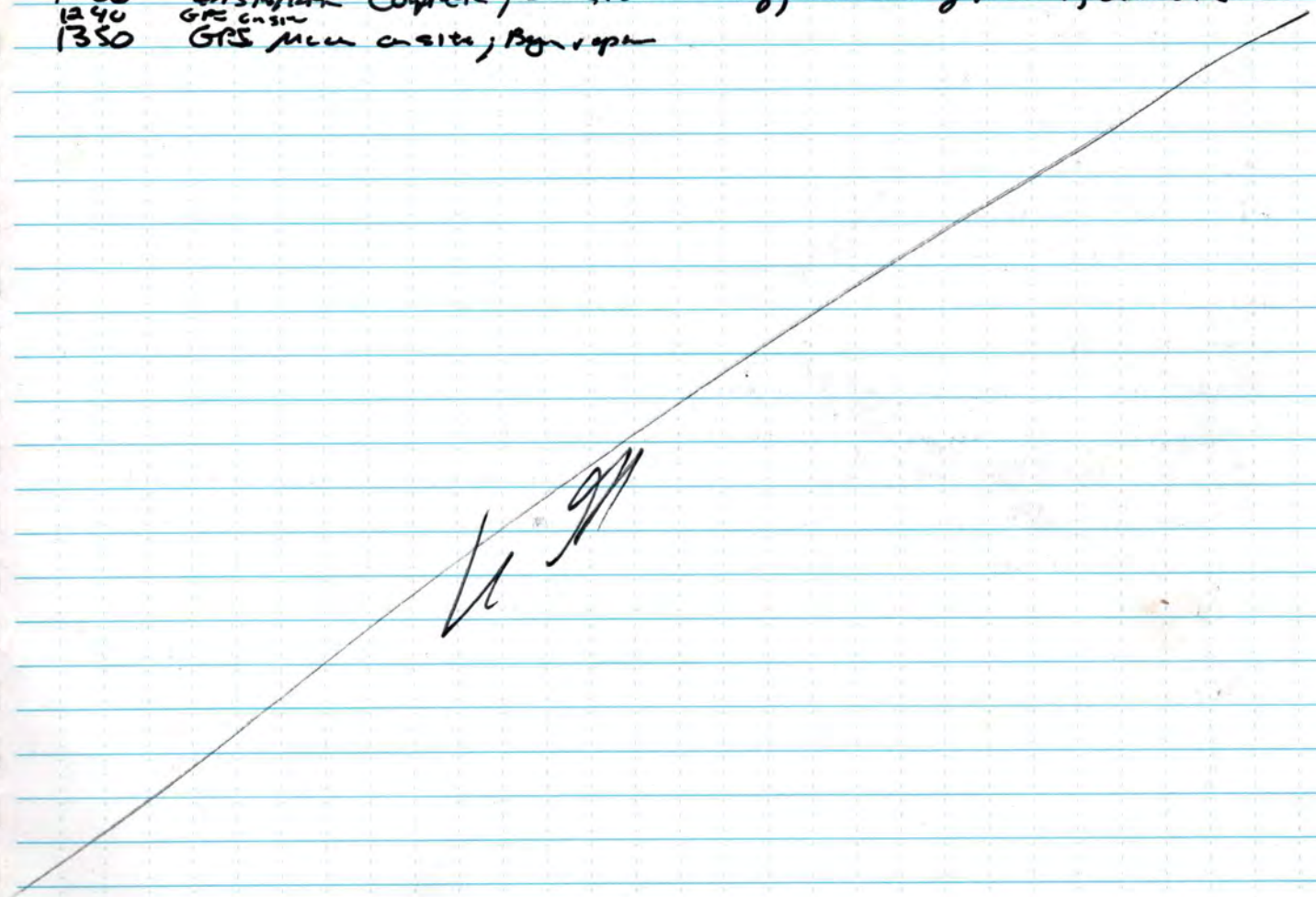
Scale: 1 square = _____

01/27/2026 HMPN 1B2G08982

Personnel : Chuck Serda (CS) Geologist T4
Eric Rogers (SR) P.G. T4
Dane Longino (DL) Driller GPI
Jacob Lowe (JL) Driller GPI
José Valencia (JV) Tech GPI

Weather : Clear 56°F
PPE : Level D
Health & Safety (HAS) : Topics - SSHASP; PPE; L. Fog
Objectives : Complete AS well in cellar @ ~~BGL~~ HMPN

0800 CS on Base; SR @ 0830
0900 GPI on site; HAS Briefing among Lowe Scrub Status TO head to HMPN
0920 SCRUB; Depart POL for HMF
0940 on site; HAS Meeting; Offload equipment / Supplies
1000 Setup per AS0193 Setup well 730 - 46' TD; Awaiting All clear TO Rig
1015 All clear received; Derby Commenced
1055 Setup Well
1110 Well Set; Hel/ DW
1135 Hydro/Dev Complete; grading Backhoe
1200 Installation Complete; Secure Lower in rig; GPI Calling Mech., Offload Fr Iron
1240 GPI on site
1350 GPI Mech on site; Begin repair



Scale: 1 square = _____

Rite in the Rain

01/29/2020 HMPN 112G08482

Personnel : Chuck Sorden (CS) Geologist Tr
Jack Linke (JL) Driller GPI
Malcom Stone (MS) Tech GPI

Weather : Sunny 65°F

PPE : Level D

Objectives : Complete AS well install @ HMFN

1030 CS/GPI onsite check Mechanic expand rig; Set up

1100 when Rig Failed; 15' of pipe was left Down hole after greasing; top 10' Became untreaded from pipe as pipe was pulled up w/ Grease in it; replacing well pipe and getting out well

1130 well appears sound (AS0190); installation Complete

1140 Set up @ AS0213; Hand clear 5'; Setup well 770/45' utility located 4' avg @ 4.5' TO top; @ 4'; pipe will be 17' BLS

1200 Drilling Commenced

1220 Setting well

1235 Well Set; Hyd/Dev; GPI offsite

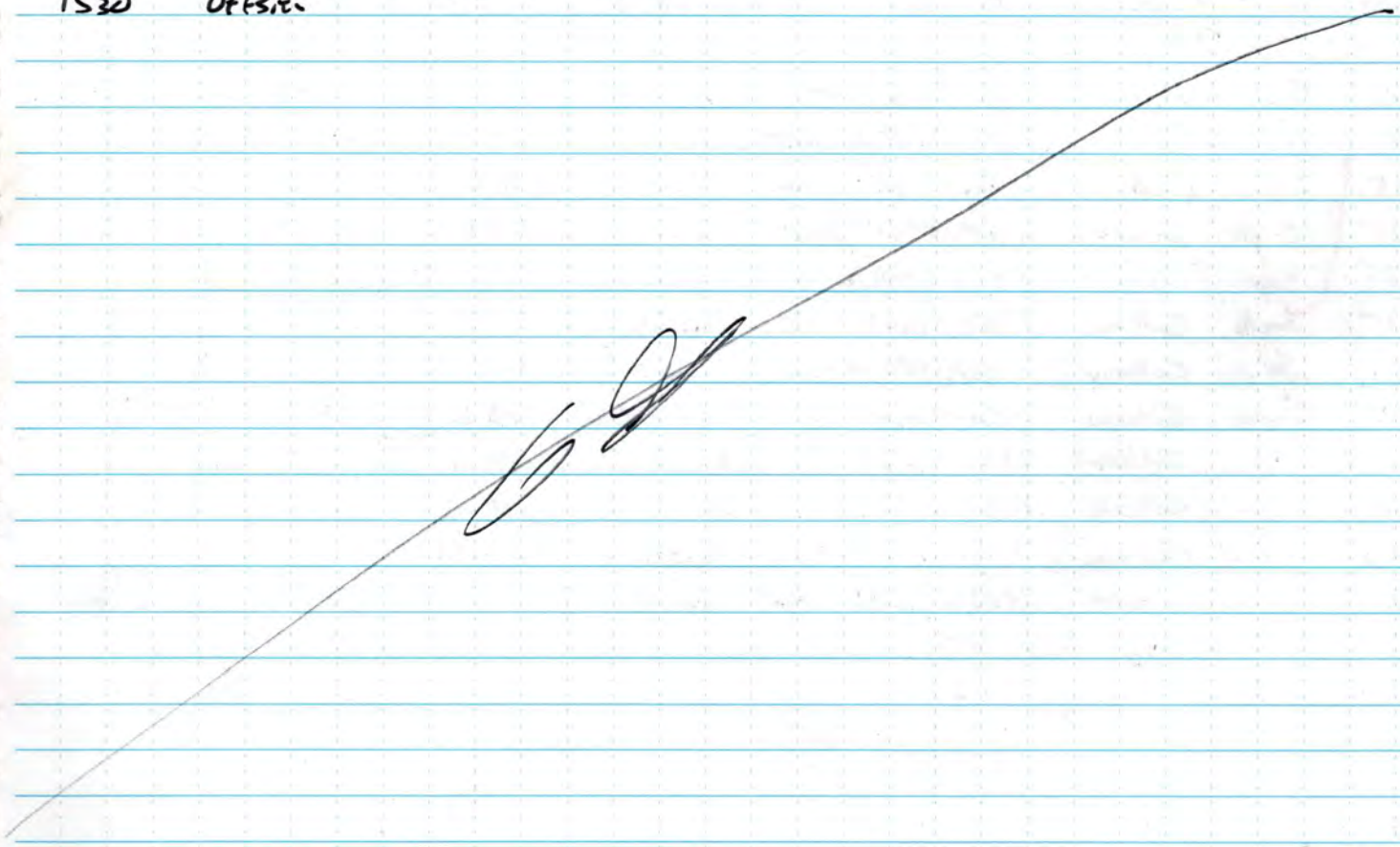
1800 Hyd/Dev Complete

1315 GPI onsite

1330 Grouting Backside

1345 Install cap Complete; Begin Decode

1530 Offsite



Scale: 1 square = _____

Rite in the Rain

CONTENTS

PAGE	REFERENCE	DATE

December 2, 2019 HMFNorth Charge # 112G08982

Sonic Drilling
Air Sparge well installation
PM Chris Hook: 412-921-8790 (w)
mobil: 724-766-1043
Weather: 64° Sunny

Arrived @ site 0725

Personnel:
- Sue Rogers (SR)
- Chuck Sordon (CS)
- Ben Yarene (BY)
- Jared Link (JL)
- Dave Langine (DL)
- ~~Antwan Smith (AS)~~
- Thomas Watson (TW)

Contaminants of Concern: (COC) Jared
cDCE, tDCE, TCE, VC, Freon 113.

0850 GPI onsite
0900 HAS meeting - topics COC's, obstacles such as ditches, smoking, PPE - Level D utilities - especially the High Pressure liquid N_2 signing the SS HASP (Site. Specific Health & Safety Plan) CS conducted. and
~0915 "Dig Police" arrived onsite - Jeff McDowell (BOSS) checking out the utilities near the road
0935 Antwan has to leave site due to badging - past criminal record issue, have to go to badging station
1005 Antwan turned in his badge - SR escorted
1025 back @ HMFN
1050 DL mobilizing @ Location 0003.
1055 CS sent me contact info. for Chris Hook (PM)

Drill team: Dave & Ben

Rig # 8140LS Geoprobe brand
Boring will be taken from 20' - 30' for the 25'-27' screened interval goal.

AS-
Location 0003 Target: 25-27', 1" diameter

1050 (as already noted) mobilized @ 003.
1105 post-hole dug to 5' bls.
1125 moving sand bags, etc. preparing for AS (air sparge) well installation -
1130 starting to drill, stopped due to dialog on casing diameter
1200 - break for lunch - offsite
1245 back from lunch, TT staged onsite
1300 drilling @ AS-0003

Scale: 1 square = _____

Rite in the Rain

AS0003 (cont.) HMPN - old nomenclature - used for sample ID for consistency.

HMPN-AS0003
1320 10' "holy rod" used for core
1325 20'-30' core samples laid-out.
1335 called Chris Hook - v.f. to f.g. sand - he said set AS well at prescribed depth (25'-27')
1340 proceeding to install AS well (1")
1415 bentonite slurry, well setting

Soil stratigraphy @ AS0003:

20-25' gray to greenish gray f.g. to v.f.g. sand w/ trace med-coarse ~~pebble~~ sized shell fragments and trace silt possible
25-30' same as above.

Location HMPN-AS0002 1" diameter, 25'-27' target

1440 hand dug (w/ post hole digger) to 5' bls
1450 drilling initiated
1510 sample bags out.
1515 called Chris Hook - He said 25'-27' okay
Soil Stratigraphy:

20-25' gray to greenish gray f.g. to v.f.g. sand w/ trace med-coarse shell fragments

1520 well installation initiated. (1")
1620 well installation complete
1645 well grout setting, cleaning up site for Tuesday, setting up at location HMPN-AS0004
1700 left site

So, 60' today, total.

e: 1 square =_____

December 3, 2019 HMFN #112608982

AS Well Installation
"HMPN" - old nomenclature used for location ID.
GPS onsite 0700
T+ onsite 0700

Crew:
Sue Rogers (SR)
Dave Longine (DL)
Ben Yarene (BY)
see 12-2-19 for Chuck Sordan's crew

Weather: 45°F, sunny

Health and Safety topics: PPE for cold weather, lifting & twisting CS conducted

HMPN-AS0004 (1", 25-27')

0740 @ site HMPN-AS0004, proceeding with drilling after preparing for daily unloading sand bags, etc.
0800 pulled core - 20'-30'
0810 called Chris Hook to report the soil core findings- he said keep the screened interval @ 25'-27'

Soils: 20'-25' limited sample- wash-out. gray f.g. to v.s.g. sand, trace m.g. shell fragments
25'-30' same

0830 Bentonite pellets in place, developing well, water collected in a poly tank.
0855 casing extension attached, well grouted.

HMPN-AS0006 (1", 25-27')

0905 mobilizing to HMPN-AS0006
0910 hand auger to 5' bls
0935 soil core samples bagged - same material
0940 called Chris Hook - he said set as planned (25'-27')
0945 proceeding w/ well installation
1005 bentonite pellets in place, well development underway.

Scale: 1 square =_____

Rite in the Rain

HMPN - AS0006 Soil Description:

20-25' gray (greenish?) f.g. to v.f.g. sand w/ tr. m.g. shell
25'-30' Same as above, more f.g. than v.f.g. compared to 20-25' but only slightly.

HMPN-AS0006 (1", 25'-27') cont.

~~0445~~ AS well grouted, 1" casing extended to ~5'
0540 above landsurface

HMPN-AS0005 (1" 25-27')

1045 hand auger to 5 ft b/s
1050 drilling underway
1115 soil samples laid out
1120 called Chris Hook, he said to set well @ 25'-27'
1125 setting well

Soils: AS0005

20-25' greenish gray v.f.s. to f.s. sand w/ tr. m.g. to coarse-g. shell fragments
25'-30' same as above.

1150 grouting well, ~~a~~ casing attached to approx. 5' above ground

HMPN-AS0008 (1", 25'-27')

1155 mobilizing @ HMPN-AS0008
1200 lunch GPS - 1245 T+ 1205-1235
~~1205 1210~~ starting up drill rig
1400 Chris Hook said okay to set well @ 25'-27'
1345 looking @ soil cores (20-25', 25'-30')
1405 proceeding to set well.

HMPN-AS0008 - cont.

14 bentonite pellets to seal Sand pack
1430 grouting well, extension attached to 5' above land surface

HMPN-AS0010 (1", 25'-27')

1445 hand auger to 5ft. b/s.
1450 proceeding to drill
1515 looked @ soil cores - Same as previous
1520 called Chris Hook - he said to proceed with 25'-27' screened interval.
1525 pictures of core 20-25, 25-30' ✓
1525 proceeding to complete well at 25-27' screened interval, bentonite over sand pack, developed.
1550 grouting annudlar space over bentonite seal, adding PVC extension to ~5' above land surface
* see next page for soil descriptions

HMPN-AS0012 (1", 25'-27')

1555 mobilizing to AS0012
1600 drilling to 30'
1625 looking @ soil samples (20-25, 25-30) same material as other locations, but at 20-25 more brownish gray (see next pag for soil descriptions) trace to little silt from 2
1700 grouting well.
1705 adding PVC extension to ~5' above grade.

Note: all AS wells painted orange if developed.

Rite in the Rain

HMPN-AS0010 Soils

20-25' ~20'-22.5' lt brownish gray f.s. to v.f.s. sand w/ trace mg to cg shell fragments, 22.5-25' same but grayish green.
25-30' same as above to approx. 27.0 where lt/lt ~~to~~ silt was present, grading back into f.s. to v.f.g. greenish gray sand w/ traces of m.g. to c.g. shell fragments until 30' bls

HMPN-AS0010 Soils

20-25' f.g. to v.f.g. greenish gray sand with traces of m.g. to c.g. shell fragments
25-30' same as above.

Total 180' today.

December 4, 2019 HMFN Page 1 of 1

HAS meeting - CS conducted
smoking - do not smoke near rig, general concerns

Personnel: Chuck Sorden (C.S.) - Sonic Rig #8140LS
Sue Rogers (SR)
Dave Longino (DL)
Ben Yarene (BY)

Weather: clear, 52°F

GPI onsite 0700
Tt onsite 0700

0700 filling up water tanks @ hydrant
0715 Health and Safety meeting - C.S.
0735 drilling @ AS0007

HMPN-AS0007 (1" diameter 25'-27' screen)
0730 hand auger to 5ft bls
0735 drilling began
0800 checked the soil samples (20'-30') same material - keep screened interval @ 25-27'
0810 developing well
Soils: 20-25' core
greenish gray f.g to v.f.g sand w/ trace m.g. to c.g. shell fragments
25-30' core
same as above, but at ~28' sand is more f.g. than v.f.g., ~~and~~ (sand is less fluid w/ depth) more packable like beach sand (sand castle)
0830 attaching extension to AS well to 5' above l.s. (land surface)

0835 moving to HMPN-AS0009.

Note: CS relayed message about today being a critical launch day, so no drilling near utilities or liquid N_2 line (no angled drilling)

HMPN-AS0009 1" diameter, 25'-27' target screened interval

0840 hand augured to 5' bls (below land surface)
0845 drilling initiated.
0900 looking @ soil boring samples - 25'-27' okay
0915 developing well

Soil Boring ~~(core)~~ samples - AS0009
20-25' f.g. to v.f.g. greenish gray sand w/ tr. m.g. to c.g. shell fragments
25-27' same
~27-30' gray (not greenish) f.g. sand w/ tr. shell fragments.

0930 PVC extension added to ~5ft above grade and grouting well.

HMPN-AS0011 1" diameter, 25'-27' target Screened interval

0945 mobilizing @ HMPN-AS0011
0950 hand auger boring to 5ft bls
0955 drilling
1015 Soil cores collected, 20-25' & 25'-30' OK for 25'-27'
1020 PID Reading:
20-21 0.0 ppm | 21-22 0.0 ppm | 22-23 0.0 ppm
24-25 | 25-26 | 26-27
27-28 | 28-29 | 29-30
1025 pictures taken

Soil Description: AS0011
20-25' f.g. to v.f.g. greenish gray sand w/ trace of m.g. to c.g. shell fragments
25'-~~30~~'27' same as above
27'-30' ~~mor~~ f.g. to v.f.g. w/ increasing amounts of shell.
1025 developing well
1050 well grouted, 5' 1" PVC extension added.

HMPN-AS0014 1" diameter, 25'-27' screened interval (planned)

1055 mobilizing to HMPN-AS0014
1100 hand augered to 5ft bls
1105 drilling initiated
1130 20-25' & 25-30' soil cores taken - Ok for 25'-27'
1145 well developed.
1205 well completed.

Soil Description: AS0014
20-25' greenish gray f.g. to v.f.g. sand w/ tr. shell
25-30' same as above washed-out Samples.

P.I.D. Reading = 0.0 ppm @ all depths.
12:10 - 1240 GPI lunch.
SR lunch (T+) 1220-1250 (CS@sight w/ crews)
After lunch & filling water tanks!

HMPN-AS0017 1" diameter, 25'-27'

1320 mobilizing @ HMPN-AS0017
1325 hand-augered to 5' bls
1330 drilling initiated.
1400 soil cores collected- okay for 25'-27' screened interval
PID Reading: 0.0 ppm @ all depths

Soils: AS0017
20'-23' brown (reddish) f.g. to v.f.g. sand (no shell fragments)
23-28' greenish gray f.g. to v.f.g. sand w/ trace of shell fragments
28'-30' same as above, but more f.g. than v.f.g. sand.
1445 grouting well, attaching 5' above l.s. casing (1"-diameter)

Rite in the Rain

*HMPN - AS0016 1" diameter 25'-27' screened interval

1450 hand auger to 5 ft. b/s.
1455 proceeding to drill
1520 Soil core samples laid-out, 25'-27' interval okay, took pictures after PID readings @ 1' intervals - all depths 0.0 ppm PID reading.
Soils: 20-25' f.g. to v.f.g. greenish gray sand w/tr. shell fragments, 25'-30' same, becoming more f.g. sand at ~ 27' b/s.

HMPN - AS0013 1" diameter 25-27' screened interval

1615 mobilizing to HMPN - AS0013
1620 hand auger to 5ft b/s
1625 proceeding to drill
Soil core samples taken from 20'-25' and 25' to 30' b/s.
Soils: AS0013
20-25' f.g. to v.f.g. greenish gray to gray sand with traces shell fragments, ok for 25'-27' screened interval. 25'-30' same
~~1700 grouting well~~
PID Readings - 0.0 ppm @ all depths
1640 Bentonite pellets, well development (after sand pack)
1700 grouting well, attaching 5 ft. extension of PVC (above land surface)

Note: no 1' sump for the 1" AS wells.

So, 210' today.

* HMPN = Old nomenclature used for AS Well ID.

December 5, 2019 HMFN

TT. onsite - CS 0700 Weather 52° Sunny
JR 0710
GPI 0700 My crew: Dave Longino
PM in charge: Chris Pike Ben Yarema
(Chris Hook out of office)
Mobilizing @ HMPN - AS0147 2" 43'-48'
core 40'-50'
Actual screen: 41.5-43.5

0815 mobilizing @ AS0147
0820 post-hole digging to 5 ft b/s
0825 proceeding to drill
0900 core samples taken @ 40'-50'
Chris Pike (call of him) he said set @ 41.5-43.5 (sump 1' below, so total depth 44.5).
0925 proceeding to install AS well.
0940 20/30 sand
1020 grouting well

Soil Description: AS0147

40'-41' f.g. to v.f.g. gray sand w/ tr. shell fragments (m.g. to c.g.)
41'-43.5' larger shell fragments and f.g. to ~~m~~fg sand (gray) some shell ~~fragments~~ intact, fragments m.g. to pebble-size
43.5-46.5 gray clay w/ shell fragments trace to little tr. silt, some shells whole (2" clam shell intact)
46.5-50.0 Gray clayey silt w/ shell fragments, m.g. to c.g., some whole

PID Reading: 0.0 ppm at all depths
mobilizing to next →

Rite in the Rain

Boring 40'-50'
screen target 43'-45'

HMPN-AS0135 2" ASwell

1020 mobilizing to AS0135
1025 post hole digging to 5ft b/s
1100 3 soil samples pulled. Actual: 41'-43'
called Chris Pike - decision to screen at 31'-33' due to very poor recovery - no clay/deep samples recovered. Presuming the geology is similar to AS0147. Consulted w/ Chuck S.
Soils: presumed shifted into deeper zones, no clayey layers recovered.
PID Readings: 0.0ppm at all depths
Soils: ~40'-42' f.g. to v.f.g. sand w/ tr shell fragments m.s. to c.g.
42'-? gray shell fragments, - full intact shells, conch shell half, "shell hash" w/ f.g. to v.f.g. sand
1135 developing well
1155 grouting well.

(lunch GPI 1215-1300) SR - stayed @ site, ate & paperwork

HMPN-AS0124 2" AS well, 40'-50' soil 43'-45' target for screened interval

1200 mobilizing @ AS0124 Actual: 41'-43'
1315 hand augr to 5ft b/s
1330 samples - deeper samples washed out again, so 41'-43' for screen - to 44' total including sump (1')
PID Readings: 0.0 ppm @ all depths

AS0124 Soils: same as AS0135 above, not representative of depth, clayey layers not captured due to wash-out. Took pictures of cores as they were retrieved, but the samples presumably shifted deeper. made call to screen @ 41-43' interval for conservatism.
1415 developing AS0124
1500 grouting well.

Note: when called this morning, Chris Pike said if the conditions continue to be the same, apply past recommendations. So, we did not call him again for this wash-out sample, applying same logic as previously agreed upon (41'-43' screen plus the 1' sump, so total AS well depth = 44').
1500 Road crew setting up cones along eastern edge of property, CS spoke with them.

HMPN-AS0113 2" diameter ASwell
43'-45' target zone
40'-50' soil sampling
Actual screened interval: 41'-43'

1515 hand-augered to 5 ft b/s
1520 drilling initiated.
1600 checking soil samples, clayey layer @ ~43' so setting screened interval at 41'-43', with the sump down to 44'. Good recovery this time. They (DL & BY) used a 2" sampling core hoping to reduce the wash-out.
1605 Soil PID Readings: 0.0 ppm @ all depths

Soil Description: AS0113

40'-45' 40'-43' "shell hash" gray shell fragments. m.s. to gravel w/ little to some f.g. sand and possible silt, 43-46.5' silty clay w/ gray 46.5-47.5 gray same mine shell, shell fragment
45'-50' 47.5-50' clayey silt w/ sand (v.f.g to f.g.)

1610 Well Installation starting.

Left site @ 1640.

C.S. waited both drill rigs until 1730.

Rite in the Rain

HMFN Dec 6, 2019

T1 onsite Project # 112G08982
C.S. 0700 Weather: Sunny, 55°F
SR 0708
GPI 0700
HAS: CS
Contact: Chris Pike* AS0102 @AS102: Screen Target: 43'-45'
HMPN - ~~AS102~~ Sample interval 40'-50'

0745 hand-auger (post hole) to 5ft b/s
0750 drilling initiated.
0820 soil samples pulled
0830 called Chris Pike - he said ~~41-45~~ to set the screened interval @ 42-44' as we suggested okay (consulted with DL and CS over depths & actual point of change to clayey soils - we agreed on 44')
0835 continuing with drilling and AS well installation, 42'-44' screen, sump to 45'.
0845 20/30 Sand poured.
0850 0.0 ppm PID reading @ all depths

Soils: AS0102

40-45: 40-44' gray shell fragments - c.g. to gravel w/ f.s. to v.f.g. sand, and possible (trace to little silt)

45-50: ~~45'-48'~~ ~~46'-48'~~ gray clay with tr. to little sand and silt
48'-50' m.s. to gravel-sized shell fragments
↳ gray m.f.s. to v.f.g. sand with clay and silt, traces to little shell fragments - some full-size oyster shells, clam shells m.s. to gravel shell

0900 grouting well

* Chris took out of office

HMPN - AS0101 2" diameter
43'-45' target
Screened interval

0920 mobilizing to AS0101 (new line of AS wells my call based on last one: 42-44' screen
0925 hand-auger to 5ft b/s
~~1005~~ @ 930 drilling initiated.
1005 - soil samples collected
1010 42-44' screen decided to 45' for sump.
PID Readings: 0.0 ppm at all depths
Soil Description: AS0101
~~1040 Developing well~~
40-45' 40'-42.5' gray ~~m~~.f.g. to v.f.g. Sand w/ trace to little m.g. to c.g. shell fragments 42.5-44.0 - ~~45'-50'~~ larger shell fragments and above sand "shell hash"
45-50' 44-48' gray clay w/ f.g. to v.f.g. sand and tr. to little shell, some silt possible
1040 Developing well.
48-50' f.g. gray f.g. to v.f.g. Sand with ~~tr~~ clay (clayey Sand) and trace ~~to little~~ m.g. to c.g. shell fragments (very small, greatly decreased in quantity.)

1055 grouting well.

HMPN - AS0112 2" diameter
Targed screen: 43'-45'
Actual screen: 42'-44'

1100 hand auger to 5ft b/s
1115 drilling initiated
1155 Soil Samples collected decision to set screen @ 42-44' w/ sump to 45'
1200 AS well installation initiated (setting well), 20/30 sand poured using a cone as a funnel, measuring depth to top of sand pack.

Rite in the Rain

HMPN-AS012

1215 done w/ sand pack removing steel casing

PID Readings: 0.0 ppm at all depths
Soil Description: AS012

40-45' 40'-41.5' gray f.g. to v.f.g sand w/ little to some shell fragments, trace to little silt, 41.5'-44.0' Gray shell fragments m.g' to pebble-sized and f.g. to v.f.g. sand, some silt
45-50' 44'-45' loamy material (sand, silt, clay) w/ some shell fragments, 45-50' gray sand f.g. to v.f.g.

PI
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from

HMPN-AS0123

2" diameter
target: 43'-45'
Actual: 41.5-43.5

1310 hand auger to 5ft b/s.
1320 start drilling
1400 samples taken
~~1440~~
1405 decision to screen @ 41.5 to 43.5 ft
1410 well installation initiated
1440 well development

Soil Description: AS0123

40-45' 40-41.5 gray f.g. to v.f.g. sand and trace of shell fragments (m.g. to c.g., some whole, but tiny)
41.5-43.5 gray shell fragments & f.g. to v.f.g. sand 43.5-46 gray
45-50' clay w/ tr v.f.g. sand and silt, tr. m.g. shell fragments 46-50 v.f.s. to f.g. gray sand w/ clay & silt to f.s. tr. shell

n
pm) PID Readings: 40' 0.2 41' 0.0 42' 0.0
43' 11.9 44' 0.8 45' 0.0 46' 0.0 47' 0.0 48' 0.0
49' 0.0 50' 0.4

Left site @ ~4pm after covering soils w/ vis screen & cleaning up a bit.

ale: 1 square =

Weather: sunny 61°F
AWest contractor onsite to install electrical @ site 0725 (Tt - SR) (not for this job)
Week 2 of AS well installation
GPI onsite @ 0840

@ site: Tt Sue Rogers (SR)
GPI Dave Longino (DL)
GPI Ben Yarema (BY)
2nd crew -
Tt Chuck Sorden (CS)
GPI Thomas Watson (TW)
GPI Jared Link (JL)
GPI Malcolm (M)

along road: Electrical installation, met Michael of A-West Enterprise They will be doing dewatering (water from stream to ditch.)
0740 spoke w/ Michael of A-West

PM out of Pittsburgh:
Chris Hook

HMPN AS0134

Target screen: 43'-45'
Actual 41.5-43.5 (screened interval)

~0900 Geoff of NASA safety stop
0910 mobilizing to AS0134.
0915 hand auger to 5 ft b/s
0925 drilling initiated.
1000 Sample collected - 40'-50'
1005 called Chris Hook - he said ok w/ 41.5-43.5
1010 well installation initiated for total depth, including sump = 44.5 ft b/s

Reading of PID (in ppm): Soils
41' 0.0 42' 0.1 43' 6.8 44' 4.4
45' 0.0 46' 0.0 47' 0.0
48' 0.0 49' 0.0 50' 0.0

1020 ~~20/30 sand~~ bentonite sump- bentonite, 20/30
~~1035~~ ~~20/30 sand~~ sand to 0.5 above screen, bentonite
1040 developing well - water clear.

Soil description: AS0134

40'-41' gray f.g. to v.f.g. sand and trace shell m.g to fragments -, 41-43.5 gray, shell fragments and c.g. f.g to v.f.g. sand, m.g. to c.g. to small whole shells 43.5-47 gray clay w/ tr. v.f.g. sand and tr. silt, tr. m.g shell fragments 47'-50' v.f.s. to f.g. sand (gray)

Scale: 1 squ ~~=~~ Rite in the Rain

47'- w/ clay and silt, tr. m.g. to c.g. shell
50' fragments
ont.)
1105 finished pulling up casing
1110 grouting

1120 break for lunch. - 1220 (GPI) ✠ stayed onsite after stop @ facility next door.

to-50' soil samples

HMPN-AS0145

Target: 43'-45' screen
Actual: 43'-45'

1225 mobilization to HMPN-AS0145
1230 hand auger to 5' bls
1235 drilling initiated.
1305 soil samples taken 40-45', 45'-50'
1315 proceeding to set well @ 43'-45'
sump to 46'
1325 casing (2") in hole

(in ppm) PID Readings: 41' 0.0 42' 0.0 43' 0.0
44' 0.0 45' 0.0 46' 0.0 47' 0.0
48' 0.0 49' 0.0 50' 0.0

1330 2/80 sand All zeros - thought I detected a chemical odor but no PID readings

1335 developing well.

Soils: AS0145

40'-41.5', gray f.g. to v.f.g sand w/ silt and trace to some m.g. to c.g. shell fragments, 41.5 ~~45.0~~ 46.25' m.g. to pebble - grained shell fragments, some 1/2-inch whole shells and v.f.s. sand to silt, ~~45-46.25~~ 46.25 same with clay ~~50.25~~-
46.25-50.0 gray clay with v.f.g. sand and silt, ~~some~~ little to some m.g. to c.g. shell fragments

le: 1 square = _____

HMF North
December 9, 2019

HMPN-AS0111

Screen Target: 43'-45'
2" AS Well
Actual: 40.5-42.5

1425 mobilizing to AS0111
1430 hand auger to 5 ft bls.
1435 drilling initiated.
1505 samples collected.
1510 Ryan O'Meara stopped by - NASA PM
1525 called Chris Hook - thought 42-44', but revisited boring with DL and determined that with shifting it is more like 40.5'-42.5', so I called Chris Hook back & he said 40.5 is okay as far as the engineering design goes.
1530 well installation initiated.
1550 developing well

PID Readings @ AS0111 (in ppm)
41' 0.1 42' 0.6 43' 4.8 44' 3.3
45' 1.8 46' 0.9 47' 0.6 48' 0.0
49' 0.0 50' 0.0

Note: Chuck's angled AS Well # AS047
Next: AS052

AS0-111 Soils

40'-41' gray f.g. to v.f.s. sand w/ silt and tr. to some m.g. to f.g. sh. frag.
41'-42.5' m.g. to pebble-gr. shell (some whole) fragments and some v.f.s. sand to silt.
42.5'-47' gray clay with little to tr. v.f.g. sand and trace to little m.g. to c.g. shell fragments
47'-50' ~~f~~ f.g. to v.f.g. sand with tr. to some clay and silt, tr to some m.g. to c.g. shell fragments

Scale: 1 square = _____

Rite in the Rain

December 10, 2019
HMFN
Job # 112G08982

T+ 0700
GPI 0700

Weather: cloudy, fog 65°F

Pittsburgh PM: Chris Hook

Personnel:
Sue Rogers (SR)
Chuck Sonder (CS)
Dave Longino (DL)
Ben Yarema (BY)
Thomas Watson (TW)
Jared Link (JL)
Malcolm Smith (MS)

HMPN - AS0100

Screen Target:
43'-48'
Actual: 42'-44'
2" well (AS)
Soil sampling 40'-50'

0730 hand auger to 5' bls
0730 mechanical issues
0750 drilling initiated
0825 soil samples pulled, called Chris Hook w/ suggestion to mimic #101 (42-44') since we had poor recovery (no clay, no 45-50' sample) He said okay.
0830 drilling well
0845 developing well.
0905 well completed.
: soil description, next page

PID Readings 0.0.
readings for 40'-45'
45'-50' no recovery.

HMPN - AS0083

2" AS well
Screen Target: ~~45~~ 43'-45'
Actual: 40'-42'

0915 mobilizing to AS0083
0920 post hole to 5ft. bls
0925 drilling initiated.
0955 soil samples collected, called Chris Hook, he said okay for 40'-42' screened interval, 43' to bottom of sump.
1000 drilling - well installation initiated
PID Readings: 0.0 ppm @ all depths
1015 developing well
1030 installation complete, pending grout.

le: 1 square = _____

Soils - Descriptions

AS0100 - Soils

~ 40'-41' f.s. to v.f.s. Gray Sand w/ trace to little shell and some silt
41'-45' Gray m.g. to pebble-gr. shell fragments some whole with little to some gray f.s. to v.f.s. sand, possible silt
45'-50' NO RECOVERY

AS0083 - Soils

40'-42' Gray m.g. to pebble-gr. shell fragments, some whole, with little to some gray f.s. to v.f.s. sand
42'-46' Gray clay with little to some sand, possibly silt and trace to little shell fragments (m.g. to c.g.)
46'-50' gray clayey* sand (f.s. to v.f.s.) possible silt, trace to some m.g. to c.g. shell fragments Gray * probably equal amounts of sand and clay.

HMPN - AS0075

2", Target 43'-45'
Actual Screen: 41.5-43.5

1100 mobilizing to AS0075
1105 post-hole to 5' bls
1110 drilling initiated
1140 samples collected, clayey layer starting @ 43.5, so set screen @ 41.5-43.5, sump to 44.5. (called C. Hook, he said okay)
1145 well installation initiated.
1200 developing well. (until clear)

PID Readings 0.0. at all depths (40-50') (1' intervals tested)

1225 - mobilizing to location AS0146
lunch ~1230 - 1310 (GPI)

Scale: 1 square = _____

Rite in the Rain

AS0075 – Soils – Descriptions

40'-41.5' Gray f.g. to v.f.g. sand and trace to some m.g. to c.g. shell fragments, possible tr. silt
41.5'-43.0' m.g. to pebble-gr. shell fragments (Gray) and f.g. to v.f.g. sand ~~at~~ @43.0'-43.5' same with trace to some clay and silt ~~from~~ ~~43.0-43.5'~~ the sample may have shifted slightly.
43.5'-47.5' Gray clay with v.f.g. sand and traces m.g. to c.g. shell fragments, some whole small clam and snail shells (~¼")
47.5'-50.0' Gray f.g. to v.f.g. sand with clay and tr. none to m.g. to c.g. shell fragments, ~~some whole like above layer~~ significant decrease in shell.

After lunch: Location HMPN-AS0146 2" AS Well Target Screen: 43'-45'

1315 post hole to 5' b/s
1320 drilling initiated. Actual: 42'-44' (45 total)
1410 soil samples taken, confining layer starting at about 44' b/s so we called Chris Hooke to recommend a 42-44' screened interval he said that's okay.
1415 well installation initiated

Soils – Description:

40-45' Gray ~~m~~ f.g. to v.f.g. sand w/ (a few) some large conch shell pieces possible ~~silt~~ silt
40'-41' tr. f.g. to m.g. shell fragments
41'-44' Gray m.g. to pebble-sized shell fragments w/little to some gray f.g. to v.f.g. sand, possible silt
45'-50' 45.0-46.5 Gray clay w/ v.f.g. sand and trace to ~~little~~ none m.g. to c.g. shell fragments
4'
6.5
46.5-50' ~~the~~ Gray clayey f.g. to v.f.g. sand w/tr. to some m.g. to c.g. shell frag.

PID Readings: 0.0 ppm at all 1' intervals (samples)
1430 well development
1455 removing outer casing
1500 grouting well.

HMPN-AS0158 Target screened interval: 43'-45'

1505 mobilizing to AS0158 Actual: 42'-44'
1515 hand augen to 5 ft b/s 2" AS Well
1520 drilling initiated.
1600 soil samples taken, called Chris Hook, 42-44' on @ 41.5'-43.5' suggested since confining layer is at about 43.75' Chris said go ahead with the 42'-44' screened interval.
1610 drilling – well installation initiated.
PID Readings: 0.0 ppm @ all 1' intervals (soils)
1630 developing well, hydrating bentonite pellets
1645 grouting well

Soils – Description – AS0158

40'-41.5' Gray f.g. to v.f.g. sand w tr. to some m.g. to c.g. shell fragments, possible tr. silt
41.5'-43.75' Gray m.g. to pebble-sized shell fragments, some whole shells (small clam, snail) and f.g. to v.f.g. sand, trace silt
43.75'-47.0' Gray clay with some f.g. to v.f.g. sand and trace to little m.g. to c.g. shell fragments, some whole.
47.0'-50.0' Gray f.g. to v.f.g. sand with clay and trace of m.g. to c.g. shell fragments,

1700 Picking up soil samples for roll. off.
1715 Left site.

Total: 5 AS Wells

Rite in the Rain

12-11-19
HMFNorth

Personnel: Malcolm Smith (MS)
T+ Sue Rogers (SR)
GPI Dave Longino (DL)
GPI Ben Yarema (BY)
T+ Chuck Sorden (CS)'s crew:
Thomas Watson (TW), Jared Linky
Malcolm Smith w/our crew (JZ)

weather: dense fog, 72°F

0700 - C.S. onsite
0705 - SR onsite

HMPN - AS0163
next to G Avenue SE 2", Target Screen: 43-45'
Actual Screened Interval: 39.5-41.5'

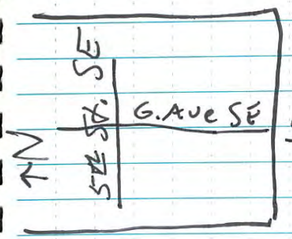
0730 hand augen to 5 ft bls.
0735 drilling initiated.
0815 soil samples collected
0820 Chris Hook called back - SR I suggested that the screened interval be shallower due to the clayey soils encountered at 40-40.75' and persisting to 50'. He said to set the screen a bit into the clayey layer at 39.5-41.5'
0825 well installation initiated
0845 developing well, hydrating bentonite
PID Readings: 0.0ppm at all 1' intervals.

Soils - Description - AS0163

40.0-40.75' Gray m.s. to pebble-sized shell fragments and f.g. to v.f.g. sand, some silt possible
40.75'-46.0' Gray clay with f.g. to v.f.g. sand and trace to little m.g. to c.g. shell fragments, some small whole shells
46'-50' Gray ~~f.g. to~~ OK f.g. to v.f.g. sand with clay and trace m.g. to c.g. shell fragments

0900 grouting well.

le: 1 square = _____



2" AS well
Screen target: 43'-45'
Actual Screen: 40'-42'

0915 mobilizing
0920 post hole digging to 5ft bls.
0925 drilling initiated.
0955 soil sample collected. 41.5'
0955 called Chris Hook - clayey layer @ ~~41.5~~
so he said to set it a bit into the confining layer @ 40'-42' for the screened interval (sump to 43')
1000 well installation initiated.
1015 developing well, hydrating bentonite
1035 grouting well.
PID Readings: 0.0 ppm @ all 1' soil intervals (40'-50')

Soils - Description: AS0162

40'-41.5' Gray m.g to c.g., some pebble-sz. shell fragments and f.g. to v.f.g. sand, some silt possible
41.5'-46.0' Gray clay with f.g. to v.f.g. sand and trace to little m.g. to c.g. shell fragments, some whole, but tiny (small)
46.0-50' Gray f.g. to v.f.g. sand with clay and trace to some to none m.g. to c.g. shell fragments, some small, whole, clay lenses.

Scale: 1 square = _____

Rite in the Rain

HMPN-AS0157 Target: 43'-45' Actual: 40.5-42.5

~1100 mobilizing to AS0157
~1105 hand augen to 5ft b/s (post-hole)
1110 drilling initiated.
1135 Sample collected. soils 40'-50', called Chris Hook, w/ confining layer @ 42.25' he decided to set screen @ 40.5'-42.5'.
PID Readings: 0.0ppm at each 10' soil interval (40'-50')

Soils - Description - AS0157

40'-42.25' b/s Gray m.g. to c.g. shell fragments, some pebble-sized (gr.) and f.g. to v.f.g. sand, some silt possible
42.25' - ~~50.0~~ 45.8' Gray clay with f.g. to v.f.g. sand and trace to little m.g. to c.g. small whole shells, shell fragments
45.8 ~~50.0~~ 45.8 - ~~52.0~~ 47.0 Gray f.g. to v.f.g. sand with clay and trace to some m.g. to c.g. (some small whole) shell fragments
47.0 42.0 - 50.0 same as above, but marked decrease in shell fragments, some clay lenses Throughout.

1140 well installation to 43.5' (sump depth) initiated
1200 developing well, hydrating bentonite pellets.
1225 grouting well.
1235 GPI lunch → 1315

HmPN-AS0133

2" AS Well Screen
Target: 43'-45'
Actual: 40.5-42.5'

1330 mobilizing @ AS0133
1335 post-hole to 5' b/s
1345 drilling initiated.
1415 core sample taken, C.L. (confining layer) @ 42.5 (although 42.5-43 was a transition from the shell & sand to clay) So Chris Hook Said set it @ 40.5-42.5, sump to 43.5.

1420 well installation initiated.
1425 20/30 sand poured into annular space using inverted road cone.
PID Readings: (in ppm)

41' 0.0 42' 0.9 43' 3.8 44' 2.4 45' 0.4
46' 0.0 47' 0.0 48' 0.0 49' 0.0 50' 0.0

1435 developing well & hydrating bentonite pellets
1515 grouting well, installation complete.

Soils - Description (AS0133)

40'-42.5' Gray m.g. to pebble-gr. shell fragments and f.g. to v.f.g. sand w/ some silt possible
42.5-47.0 Gray clay with f.g. to v.f.g. sand and trace to little m.g. to c.g. some to little shell fragments.
47.0-49.0 Gray f.g. to v.f.g. Sand with clay and possible silt, trace to none m.g. to c.g. shell fragments, ~~some large~~ some clay lenses
49'-50' Gray clay w/ f.g. to v.f.g. sand and possible silt with trace to some m.g. to c.g. shell fragments, some (very few) > 2" diameter.

HmPN-AS0122

2" AS Well
Target for screen: 43'-45'
Actual Screened Interval: 41'-43'

1520 mobilizing to AS0122.
1525 post-hole to 5' b/s
1530 Drilling initiated.
1600 Soil samples taken
1605 called Chris Hook - told him that the confining layer starts at about 43' b/s so he said set the screen at 41'-43', sump to 44'
1610 well installation initiated
PID Readings: 41' 0.0 42' 0.0 43' 0.0
44' 0.0 45' 0.0 46' 0.0 47' 0.0
46' 0.0 49' 0.0 50' 0.0

Rite in the Rain

Soils - Description (AS0122)

40.0 - 41.3' Gray sand (f.g. to v. f.g.) with trace to some m.g. to c.g. shell fragments, possible tr. silt
logs: - 41.5

41.3 - 43.5 Gray m.g. to c.g to pebble-sized shell fragments and f.g. to v.f.g. sand, some silt possible
logs - 43.5

43.5 - 46.3 Gray clay with f.g. to v.f.g. sand and trace to little m.g. to c.g. shell fragments (some small whole) ~~shell~~ (sandy clay)
logs

46.3 - 49.0 Gray f.g. to v.f.g. sand with clay (clayey sand) and trace to little or none m.g. to c.g. (some whole, small) shell fragments.
logs

49.0 - 50.0 Gray clay with f.g. to v.f.g. sand and trace to little or none shell fragments (m.g. to c.g.)

S.R Left @ 4:20

C.S. took PID Readings;

onsite 0700 Weather: Rain, wind 77°F Crew: Same

① HMFN - AS0110 2" Target: 43'-45'
Actual Screen: 40.5'-42.5'

0740 mobilizing to AS0110 - heavier rain
0745 hand auger to 5ft bls
0750 drilling initiated.
0825 samples collected, confining layer starting @ ~42.4', So Chris Hook skid to set screen @ 40.5' - 42.5', sump to 43.5'.
0830 well installation initiated

PID Readings:
41' 0.0 42' 0.1 ppm 43' 1.5 ppm 44' 0.0
45' 0.0 46' 0.0 47' 0.0 48' 0.0
49' 0.0 50' 0.0 ppm

0845 well development & bentonite pellet hydration
0900 grouting well.

Soils- Description: AS0110

40.0 - 40.8' Gray sand (f.g. to v.f.g.) with trace ~~to~~ m.g. to c.g. shell fragments
40.8' - 42.4' Gray m.g. to pebble-sized shell fragments and f.g. to v.f.g. sand (no silt detected)
42.4' - 43.1' transitional zone from above layer to clay, so above with clay (gray)
43.1 - 45.8 Gray clay with f.g. to v.f.g. sand and trace to some m.g. to c.g. shell fragments, a few whole small shells
48.8 - 49.2' Gray sand (f.g. to v.f.g.) ~~and~~ with clay and trace to no m.g. to c.g. shell fragments.
49.2 - 50.0' Gray clay w/ ~~f.g. to~~ v.f.g. sand and trace to no m.g. shell fragments.

Rite in the Rain

2" AS Well
Target: 43-45'
Actual: 41.5'-43.5'

② HMPN-AS0099

0910 mobilizing to AS0099
0915 post-hole to 5ft b/s
0920 drilling initiated.
1000 soil samples taken, called Chris Hook after consulting w/ C.S. and D.L. It is an incomplete sample, no clayey layer recovered AS0100 nearby - looked @ w/screened interval of 41'-44' and AS0110 nearby @ 40.5-42.5, so the sandy-clayey layer recovered at AS0099 is a good 3-4' recovered, Chris H. chose to split the difference and screen this one at 41.5'-43.5' b/s, sump to 44.5'.
1010 well installation initiated, 20/30 sand poured

PID Readings: 41' 0.0 42' 0.0 43' 0.0
44' 0.0 45' 0.0 (ppm)

1020 Developing well

Soils - Description - AS0099

40'-42.5' Gray f.g. to v.f.g. sand w/ tr. m.g. to c.g. shell fragments and trace to some silt
42.5'-44' Gray m.g. to c.g. to pebble-sz. shell fragments & sand/silt as above
~44'-45' wash-out
45'-50' no sample recovered, presumed clayey layers (Sandy clay → clayey sand)

1045 well installation complete.

Note: C.S. and Kayle Hoard (& H) were sealing w/ foam and lining w/ visqueen? - black sheeting and reinforcing w/ a PVC frame the holey drop box for the soil core sample storage/disposal. took pictures.

Scale: 1 square = _____

2" AS well
Target: 43'-45' for screen
Actual: 42.5'-44.5'

③ HMPN-AS0091

1050 mobilizing @ AS0091
1055 post-hole to 5ft b/s
1000 drilling initiated.
1135 soil samples taken, clayey layer observed within the shell at 43'-43.5' like what CS encountered called Chris Hook, he recommended setting the screen at 42.5'-44.5', with the sump to 45.5'.
1145 well installation initiated.
1155 ~~1200~~ developing well, hydrating bentonite pellets
1210 grouting well.
PID Readings: 0.0. ppm @ each 10' interval.

Soils - Description: AS0091

40'-41.3 Gray v.f.g. to f.g. sand and trace to little m.g. to c.g. (some small whole shells) shell fragments
41.3'-43.0' Gray m.g. to pebble-sized shell fragments and f.g. to v.f.g. sand
43.0'-43.5' same as above with clay
43.5-44.6 same as ~~43-43~~ 41.3'-43'
~~44.6~~ ~~43.5'-44.6'~~ Gray clay w/ f.g. to v.f.g. sand, trace to little m.g. to c.g. shell fragments
44.6'-48.0'

48'-49.3 Gray f.g. to v.f.g. sand and with clay, trace to little m.g. to c.g. shell fragments
49.3-50' Gray Clay with f.g. to v.f.g sand and trace to none m.g. to c.g. shell fragments.

lunch 1220-1305
SRI stopped @ building next door, came back, had lunch in van, so ~30min.
CS & KH finished covering the dumpster with a tarp, bungsey (sp?) chords during lunch.

Scale: 1 square = _____

Rite in the Rain

HMPN-AS0074 2" AS Well
Target Screen: 43'-45'
Actual Screen: 42'-44'

1310 mobilizing to AS0074
1315 post hole digging to 5 ft. b/s
1330 Drizzling rain
1335 Drilling initiated.
1415 Soil sample pulled, called Chris Hook to say we found sand, Then shell & sand to 44' So he decided on 42'-44' for the screened interval and 45' total depth.
1420 drilling initiated in the rain to install well.
1435 Developing well, hydrating bentonite pellets
NO PID readings due to rain - okay w/ Chris Hook as per CS

Soils- Description: AS0074

40'- will take pictures and describe the soils tomorrow, Dec 13, 2019. Rained-out.
1500 Left job site.

Scale: 1 square = _____

Weather: Cloudy, 72°F

TT onsite 0705
GPI onsite 0700

Sonic Drill Rig.
Geoprobe 8140LS

Crew: Sue Rogers (SR) TT
(GPI) Dave Longino (DL)
Ben Yarema

Chuck Sordon's (CS) Crew:
(GPI) Thomas Watson (TW)
Jared Link (JL)
Malcolm Smith (MS)

0715 Drill crew completing AS0074.
0730 Finishing HMPN-AS0074 - logging soils, took pictures.

Soils- Description:
HMPN-AS0074
40'-42' Gray f.s. to v.f.g. sand w/ little to some m.s. to c.g. shell fragments, some small whole
42'-44' Gray Shell (m.s. to c.g, some small whole to pebble-sized and f.g. to v.f.s. sand
44'-50' Gray clay with some f.s. to v.f.s. sand, little to trace m.g. to c.g. shell fragments, less @ depth

2" AS Well
Target Screen: 43'-45'
Actual Screen: 40.5-42.5

① HMPN-AS0082 sump to 43.5'

0730 mobilizing
0735 post-hole to 5 ft b/s
0740 Drilling initiated.
0815 sample collected, called Chris Hook & texted, called back again @ 0830, he said set at 40.5'-42.5'. (Confining layer @ 42.4' b/s.
0830 Initiated well installation.
0845 Developing well, hydrating bentonite pellets.

Soils- Description: AS0082

40'-40.3' Gray f.g. to V.f.g. sand with tr. to some m.g. to c.g. shell fragments, some whole, tr. larger pieces.
40.3, 42.4 Gray shell fragments (m.g. to c.g. tr. large) and (above) sand.
~~47'-50'~~ 42.4'-47' Gray clay w/ ~~tr. to some~~ little to some v.f.g. sand and tr. to little shell
47'-50' Gray f.s. to V.f.g. sand with some clay tr. to little sheel fragments (m.s. to c.s.) & clay lenses

Scale: 1 square = ~~tr~~

AS0082 - cont.
PID Readings: 0.0 ppm at all 1' soil intervals (40'-50')
0900 grouting well.

② HMPN - AS00~~98~~90 2" well
Screen Target: 43'-45'
0910 mobilizing to AS00~~98~~90 Actual Screen: 41.5-43.5
Sump Depth: 44.5
0915 post hole to 5' b/s.
0925 Drilling initiated
0955 soil sample collected, called Chris/Hook we agreed on 41.5-43.5 for the screened interval, 44.5 to sump bottom.
1000 drilling well initiated (well installation)
1005 pouring 20/30 sand
PID Readings 41' 10.8 42' 2.8 43' 0.5
44' 0.7 45' 0.3 46' 0.0 47' 0.0 48' 0.0 49' 0.0
50' 0.0 (in ppm)
1015 developing well
1030 grouting well
1035 well complete.

Soils - Description: AS0090

40'-40.8' Gray f.g. to v.f.s. sand w/ trace to none shell fragments (m.g. to c.s.)
40.8'-43.4' Gray m.g. to c.g. shell fragments and f.g. to v.f.g. sand, some larger shell pieces.
43.4'-43.8' same w/ some clay
43.8'-48.0' Gray clay with some f.g. to v.f.g. sand and tr. to some m.g. to c.g. shell fragments.
48'-50' Gray f.s. to v.f.g. sand with some clay and clay lenses, and trace to none m.g. to c.g. shell fragments

1040 mobilizing to AS0098

③ HMPN - AS0098 2" well
Target Screen: 43'-45'
Actual: 41.5'-43.5'
1045 post-hole to 5' b/s
1050 Drilling initiated
1115 soil samples pulled, called Chris Hook - told him about confining layer starting at 43.5', so he said set the screen at 41.5-43.5', sump to 44.5' b/s.
1120 well installation initiated.
1135 well development initiated
PID Readings: 0.0 ppm at all depths (40'-50' 10' intervals)

1200 steel casing removed (pulled up)

Soils - Description: AS0098

40'-41' Gray f.g. to v.f.g. sand with trace to none m.g. to c.g. shell fragments
41'-43.5' Gray m.g. to c.g. some small whole shell and f.g. to v.f.g. sand
43.5'-47.3' Gray clay with some v.f.g. sand, trace to some m.g. to c.g. shell fragments
47.3'-50' Gray f.g. to v.f.g. sand with some clay, greatly reduced shell content (trace and ~~under~~ less), some clay lenses.

1205 lunch GPI to 1245

④ HMPN - AS0109 2" well
Target: 43'-45'
Actual: 42.5'-44.5'
1255 post hole to 5ft b/s
1300 drilling
1310 SR to nearby building - to change - fire ants!
1335 soil sample collected, called Chris Hook - he said w/ C.L. @ 44.5'; set screen

Rite in the Rain

at 42.5 - 44.5, sump to 45.5.

PID Readings: 0.0 ppm @ all depths.
Took pictures of soils in rain
Left @ 1515

Soils - Description: AS0109

40' - 41.3' Gray f.g. to vf.g. sand w/ tr. to little m.g. to c.g. shell fragments
41.3 - 42.5 Gray shell fragments and f.g. to v.f.g. sand
42.5 - ~47 ft. bls Gray ~~clay~~ clay w/ some f.g. to v.f.g. sand and trace to little m.g. to c.g. shell fragments
~47 - 50' F.g. to V.f.g. sand and clay w/ trace to none m.g. to c.g. shell fragments.

Note: described later due to rain.

Personnel: Sue Rogers' crew (SR) T+
GPT Dave Longino (DL)
Ben Yarema (BY)

T+ Chuck Sordon's (CS) Crew:
GPT Thomas Watson (TW)
Jared Link (JL)
Malcolm Smith (MS)

Weather: clear, warm 72°F.

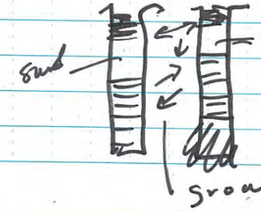
T+ onsite: 0815
GPT onsite: 0845

Today we are installing monitoring wells due to BY's knee injury - it is easier physically to install wells.

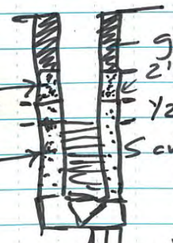
So, Well Cluster MW29 - MW33 will be installed with the following screened interval's:

* MW29 (10' - 20')
MW30 (20' - 30')
* MW31 (30' - 40')
MW32 (40' - 45')
* MW33 (45' - 50')

* will be installed first to allow the grout to dry 24 hrs* - the screened intervals need to be spaced apart so grout does not interfere with the other wells while drying.



* overnight okay to install in-between wells, well development wait 24 hrs.



grout to surface - no bentonite

30/65 sand - 2' above 20/30 sand

20/30 sand from bottom of screen to 0.5' above

Allowing for 2'-3' pad - make room - the AS well location is more critical than the monitoring well location.

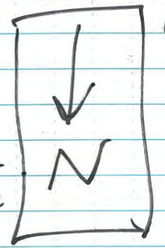
So, we moved the MW location over instead of moving the AS well location.

DL said he will leave a space for the 4 remaining wells that will be installed tomorrow. CS said alignment does not matter. (N-S vs. E-W, etc.)

MW-029 12-16 20'-30' ↑ MW-031 12-16 40'-45' ↑ 12-16

-E ③ ○ MW-030 ② MW-032 ○ ① #MW033

Shallow 10'-20' 30'-40' Deep 45'-50'



ese will run E-W, but within confines of site

① installing first MW-033 (screen 45'-50')

0 ① started drilling deep well ~ (MW-033) sand, then grout.

30 called Chris Hook to let him know that we are drilling wells today since BY has a sore knee - Chris said keep an eye on BY to make sure he is okay to work. BY said he is fine to help w/ the well and will not do anything to further injure his knee.

45 Discussion on well pads - singles or clusters TBD design too close for this type of drilling (for 72" * 24" pad shown on IM Workplan).

00 spray painting utilities marks that are added (SR)

30-1220 lunch - GPI

1230 drilling resumed.

300 grouting well. #② (after 20/30 & 30/65 sand) Screen 30'-40' MW-031

MW-029 (10'-20' screen)

1315 moving to well #③ the shallow, 10'-20' screen

1345 drilling initiated, BY doing well - no limp due to knee, just taking a precaution to minimize exertion & let it rest -

1350 PVC lowered into boring.

1355 20/30 sand poured into well annulus using the cones, then followed by 30/65 sand.

1400 grouting well.

1425 mobilizing to H-I monitoring wells (~~#34~~ & #35)

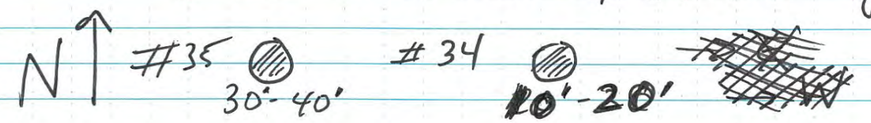
H - 10'-20' (#34) MW-034

I - 30'-40' (#35) MW-035

1515 20/30 sand in well annular space (40')

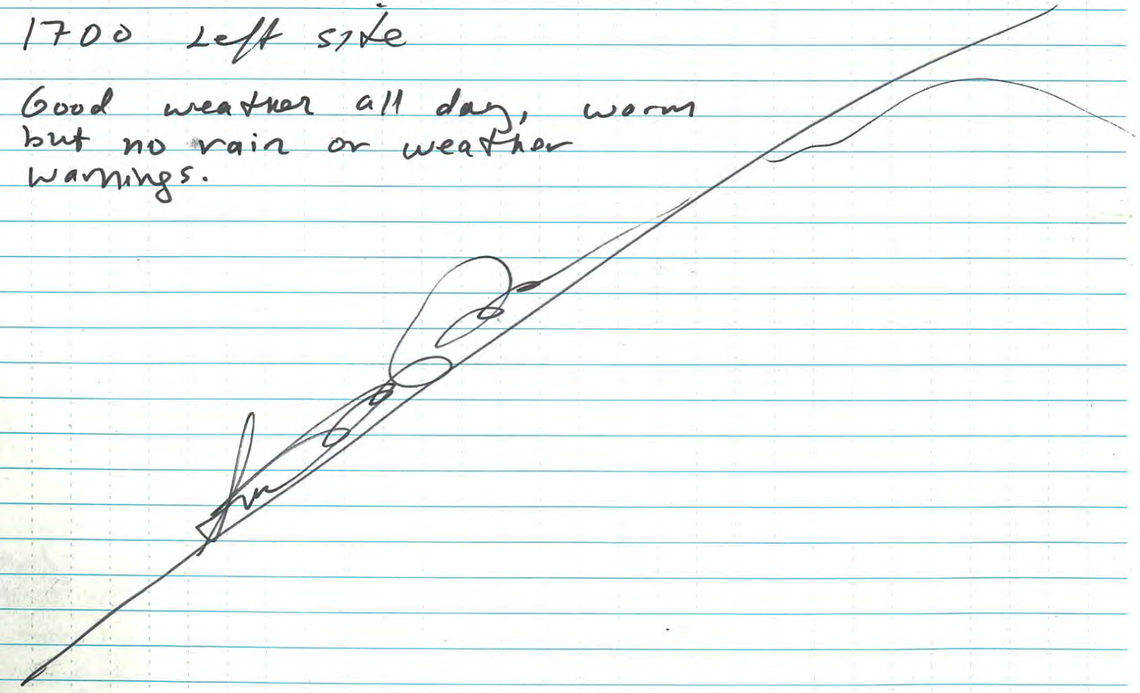
1530 30' well installation initiated!

1545 20/30 sand in well annular space (30') to 0.5' above screen, followed by 30/65 sand



1700 Left site

Good weather all day, warm but no rain or weather warnings.



Rite in the Rain

T+ onsite 0700 CS 0715 SR GPI onsite 0700
Weather: 73° F, clear

Personnel: Sue Rogers T+ (SR) Chuck Sorden (CS) T+
GPI: Dave Longino (DL) Thomas Watson (TW)
GPI: Ben Yaremia (BY) Malcolm Smith (MS)
Jared Link (JL)

BY - knee much improved.
Starting @ in-between wells from 5-well group #30 & #32
↑ mw-033 mw-032 mw-031 mw-030 mw-029
NN Continuing on cluster of 5 wells (mw):

MW-032 (40'-45' screen)

0750 hand-auger boring to 5 ft. b/s @ mw-32 (40'-45' screen)
0800 Drilling initiated.
0820 20/30 sand around well followed by 30/65 sand
0830 pulling up drilling casing
0845 grouting annular space - pouring from blue barrel after mobilizing to next location.

MW-030 (20'-30') screen

0840 mobilizing to mw-030 (east of mw-032, so only slight adjustment of drill rig position)
0845 post hole to 5' b/s
~~0950~~ 0850-0900 SR quick break
0900-0945 my crew helping with other rig, gathering supplies
0955 - drilling commencing @ mw-030
0955 - CS sent out text w/ afternoon weather warnings.
Well clusters: still on path to build individual well pads due to Sonic well installation - too far apart to cluster the well pads into 3's & 2's, but according to CS a superior method for installing wells due to allowing more annular space around wells.
1000 attaching 1" PVC well casing

MW-030 - cont.
1005 20/30 sand followed by 30/65 sand (2') measuring depth w/ tape measure.
1010 mixing grout
1015 adding PVC pipe (1") extending above-ground to pour water into sand pack, hydrating, then pouring grout into annular space.

Back to Air Sparge well installation:

HMPN-AS0121 Screen Target: 43'-45'

1035 mobilizing to HMPN-AS0121 Actual Screen: 40.5-42.5
1100 after hand-augering to 5 ft b/s, drilling is commencing.
1130 soil samples pulled, confining layer at ~42.7', so SR called Chris Hoch w/ information. He said to set the screen at 40.5'-42.5' with the sump to 43.5'.
1135 well installation implemented, 20/30 sand poured
1140 measuring top of sand pack.
1150 developing well
1200 well installed ~~w/ grout~~.
1205 - 1235 lunch. GPI SR 1220 - 1250

Soils - Description (AS0121)

40'-41' f.g. (Gray) to v.f.g. sand w/ tr. to little m.g. to c.g. shell fragments
41-42.7 m.g. to ~granular pebble-g. shell fragments w/ (and) f.g. to v.f.g. sand (gray) with possible silt
42.7-47.5 clay (Gray) and f.g. to v.f.g. sand with trace to little m.g. to c.g. shell fragments and occasional large piece (3")
47.5-50' F.g. to v.f.g. sand and/ clay, (Gray!), trace to no m.g. to c.g. shell fragments, some clay lenses, shell fragments markedly decreasing w/ depth.
PID Readings: 0.0 ppm at all depths (10' intervals, 40'-50')

Rite in the Rain

cont.

1310 Grouting AS0121.

HMPN - AS0132 Target: 43'-45'
Actual Screened Interval: 41'-43'

1315 mobilizing @ AS0132
1320 drilling initiated
1405 soil samples taken
1410 sent text to Chris Hook saying The confining layer is at 43' (starting) (Chris Hook asked for text messages since he is in a meeting).
1420 Chris Hook responded saying to please proceed as suggested.
1420 drillers proceeding with AS well installation
1500 well development completed.
PID Readings: 0.0 ppm at all depths (40'-50')

Soils - Description: AS0132

40.0'-41.6' Gray f.g. to v.f.g. sand w/ little to some m.g. to c.g. shell fragments
41.6'-43.0' Gray m.g. to pebble (gran.) - gr. shell fragments & ~~with~~ f.g. to v.f.g. sand
43.0'-46.5' Gray clay with v.f.g. sand and trace to some m.g. to c.g. shell fragments and
46.5'-48.8' Gray f.g. to v.f.g. sand ~~with~~ clay and trace to little m.g. to c.g. shell fragments
48.8'-50.0' Gray clay with some v.f.g. sand, NO shell.

1505 Grouting AS0132.

HMPN - AS0144 Target: 43'-45' 2" AS well
Actual Screened Interval: 40.5-42.5

1520 mobilizing to AS0144
~~1600 soils sampled.~~
1525 Hand auger to 5 ft. b/s.
1600 Soil samples taken.

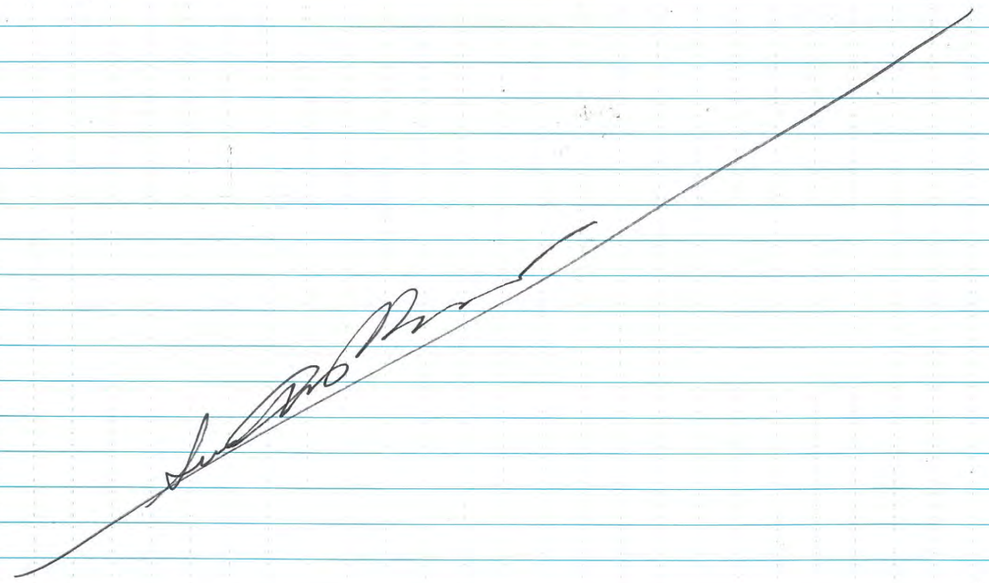
Scale: 1 square = _____

1605 Texted Chris Hook to let him know that the confining layer starts at 42.6 ft b/s. I suggested a screened interval from 40.5'-42.5'. He texted back that that interval sounds good.
1610 Drilling implemented for well installation.
PID Readings: 0.0 ppm at all depths tested (40'-50', 10-ft. intervals)
1630 well development completed.
1640 Phase II Lightning warning - Haulover area

Soils - Description (AS0144)

40-41.5' Gray f.s. to v.f.s. sand with little to some m.s. to c.g. shell fragments.
41.5'-42.6' Gray m.s. to pebble (gran.) - gr. shell fragments and f.s. to v.f.s. sand
42.6-47 Gray clay and sand, trace to some cg to mg shell
47'-49' Gray sand and clay, trace to little cg to mg shell
49'-50' Gray clay, tr. v.f.s. sand, no shell.

1645 - covering soils, etc. in anticipation of storms.
1700 Left site.



Scale: 1 square = _____

Rite in the Rain.

18-19 HMPN

TT 0700
GPI 0700

Weather: 63 ~~73~~°F Cloudy, misty & getting colder. 59 @ 0940

Personnel: Sue Rogers (SR, TT) Dave Longino (DL-GPI) Ben Yanema (BY, GPI)
Buck Sorden's (CS) Crew: Thomas Watson (TW) Jared Link (JL) Malcolm Smith (MS)

0710 BY Developing the monitoring wells

0730 Finishing AS0144 from yesterday - (Lightning Phase II warning ~1630 last night)

Developing wells
MW034 - 0710-0735
MW035 - 0740-0800 BY changed piping as requested by CS

Crystal's ref # (1) @ Location HMPN - AS0156 Target Screen: 43'-45'

~0800 mobilizing — 2" AS Well
0805 hand auger to 5' b/s — Actual Screen: 40.5'-42.5'
0830 soil samples taken.
0835 called Chris Hook - C.L. @ 42.5 so we

PID Readings @ 40' 0.2 41' 0.6 42' 0.1
43' 0.1 44' 0.0 45-50' all 0.0 ppm.

(cont.) agreed to set the screen @ 40.5'-42.5'. He asked if there is a transition zone - I said yes - clayey sand ~3" from 42.25-42.50'!

0845 developing well.
0905 well development completed.
0920 mixing grout.
0945 well complete.

Scale: 1 square = _____

* Soils - Description for AS0156:
40'-42.5' m.g. to ~~pebbly~~ gran. shelled sand and f.s. to v.f.s. transition of clayey sand from 42.25-42.50 b/s. 42.5'-44.5' (gray) clay w/ sand (not much) and trace to some shell fragments - m.f. to c.s. closer to 44'. 44.5-47.5 ~~clayey sand~~ Gray clayey sand (f.s. to v.f.s.) 47.5-50' Gray clay tr. to no shell fragments tr. v.f.g. sand

(2) HMPN - AS0161 (trace to little shell - e.g. tomp)

0955 ~~0930~~ mobilizing to AS0161, hand auger to 5ft b/s
~~0945~~ drilling initiated — Target: 43'-45' Actual: 41'-43'
1000
1035 soil sample collected. 2" AS ~~well~~ *

41' 0.8 42' 0.1 43' 0.4 44' 0.1
45' 0.0 46' 0.0 47' 0.0 48' 0.0
49' 0.0 50' 0.0 *Sump Actual to 44'
@ 42.5 0.6

1039 called Chris Hook to recommend 40.5-42.5' screened interval (confining layer starting at 42.5) He requested that I check using the PID since we are on the edge of the source zone. So I checked and there were very low readings at 44' and shallower, so slightly deeper than the 42.5 confining layer. I suggested it was setting into the clay chemically - he said leaching when I called back. So called back @ 1050. Chris Hook asked that we sink the screened interval into the clay (6") at 41'-43'.
1040 Asked DL & BY to install the screen at 41'-43', sump to 44'. They proceeded to drill.
1100 developing well
1140 grouting well.

* Note on soil description - This location is closer to 6 Avenue (to the east) so as occured previously, the initial gray sand w/ shell fragments layer is absent.

Scale: 1 square = _____

Rite in the Rain

HMPN-AS0161 (cont.)

Soils - Description for AS0161:

40'-42.5' Gray granular Pebble-gr. to m.g. shell fragments and f.g. to v.f.g. sand.
42.5-47' Gray clay with trace to little ~~f.g.~~ v.f.g. sand, tr. to little shell fragments (m.s. to c.g.)
47'-48.5' Gray f.g to v.f.g. sand with clay, trace to no shell fragments, less w/ depth.
48.5-50.0' Gray clay w/ no shell fragments, tr v.f.g. sand possible.

③ HMPN-AS0167

Target Screen: 43'-45'
Actual Screen: 40.5-42.5' (sump to 43.5')

1500 mobilizing to AS0167
1555 post-hole to 5ft. b/s.
2000 drilling initiated.
2025 soil samples pulled
2028 Called Chris Hoole - told him about the shell & sand layer ending at 42.5 & the clayey confining layer starting there. We both agreed to set the well screen from 40.5-42.5, with the sump to 43.5 b/s.
2030 drilling activities initiated for well installation.
2045 developing well.
2050-1320 GPI lunch, T+ n/c
1330 - completing well, grouting @ 1355.
PID Results: 0.0 ppm @ all 1-ft intervals. (40'-50')

Soils - Description for AS0167

40'-42.5' Gray Pebble-gr. to m.g. shell fragments, some large whole and f.g. to v.f.g. (gray) sand
42.5-47.0' Gray clay with some sand, trace to little m.g. to c.g. shell fragments
47.0'-49.3' Gray f.g. to v.f.g. sand with clay and trace to little shell fragments 49.3'-50.0' Gray clay with some v.f.g. sand, trace to no m.g. shell fragments

Scale: 1 square =

Today's AS well #

④ HMPN-AS0166

Target screen: 43'-45'
Actual Screen: 40'-42'
Sump to 43'

1400 mobilizing at AS0166
Note: Chris Hoole in meeting - text w/ info.
1405 post hole digging to 5 ft. b/s
1415 drilling initiated.
1450 soil sample pulled.
1452 sent text to Chris Hoole saying that the confining layer starts @ 42' b/s. I suggested setting the screen at 40'-42' b/s. He said sounds good.
1455 commencing to set well.
~~1500~~ 1500 checked on angle well - set & developing (CS has app!.)

PID Readings:
@ 40' 0.0 ppm 41' 0.0 ppm 42' 0.1 ppm 43'-50' 0.0 ppm
0.0 ppm for remaining depths (44'-50') b/s.

Soils - Description: AS0166

40'-40.5' Gray f.g. to v.f.g. sand with little to some shell fragments - m.g. to c.g.
40.5'-42' Gray m.g. to pebble-gr. shell fragments and f.g. to v.f.g. sand
42'-~~47~~ 47' Gray clay w/ some v.f.g. sand and trace to little m.s. to c.g. shell fragments, random complete small and medium shell (~ ½" across)
47-49 Gray f.g. to v.f.g. sand with (and) clay, trace to little shell fragments (m.s. to c.g.)
49'-50' Gray clay - no shell fragments., some v.f.g. sand & silt possible

HMPN-AS0165

Target screen: 43'-45'
2" AS well
Actual Screen: 39.5-41.5
Sump: 42.5

1555 mobilizing @ AS0165.
1605 1600 drilling initiated.
1630 soil sample pulled.
1634 sent a text to Chris Hoole saying the clayey layer is at 41.5' (starting depth) so I recommended a screen at 39.5'-41.5' b/s. He said that works. (answered in a text).

Scale: 1 square =

Rite in the Rain

HMPN-AS0165=cnt.

~1635 initiating well installation.
1650 well development
PID Readings: @ 41' bls, 0.2 ppm. all other depths read 0.0 ppm.
~~1700~~ 1710 grouting well

Soils - Description: AS0165

0'-41.5 Gray m.s. to pebble-gr. shell fragments and f.s. to v.f.s. sand
1.5'-~~42.0~~ 47.0 Gray clay with some f.s to v.f.s. sand trace to little m.s. to c.s. some large pieces (2") shell and clay
47.0-49.5 Gray f.s. to v.f.s. Sand and clay w/ trace to little m.s. to c.s. shell fragments - some large oyster pieces.
49.5-50' Gray Clay w/ some v.f.s. sand - no shell

1720 GPI Left side
1730 T+ left side.

e: 1 square =_____

HMPN - AS - starting on.

Weather: Clear, cool 55°F

Personnel: Sue Rogers (SR) T+ Chuck Sordan (CS) T+
GPI: Dave Longino (DL) GPI: Jarod Link (JL)
Ben Yarema (BY) Malcolm Smith (MS)
Thomas Watson (TW)

onsite T+ 0705
GPI 0700

2nd well AS HMPN-AS0160 Target Screen: 43'-45'
Actual Screen: 38.5'-40.5'
sump to 47.5'

0800 mobilizing @ AS0160, post hole to 5ft bls.
~0838 soil sample pulled, called Chris Hook - recommended bottom of screen @ 40.5' since the confining layer is shallow here - a transition zone from 40.5-41.0a, but still sticky/clayey. So Chris H. said okay, set screen @ 38.5'-40.5'.
0840 drilling initiated for well installation
0850 measuring sand pack depth (20/30),
0855 pouring bentonite pellets
PID Readings:
0.0 ppm @ all depths (40'-50')

0915 developing well.
0950 well installation completed
Soils - Description: AS0160

40'-40.5 m.g. to pebble-gr. shell fragments and gray f.s. to v.f.s. Sand
40.5-41.0 same with some clay
41.0-44.0 Gray clay w/ f.s. to v.f.s. sand and trace to little m.g. to c.g. shell fragments some whole clam shells (1" across)
44'-49' Gray f.s. to v.f.s sand with clay and trace to no shell fragments 49'-50' Gray clay with f.s. to v.f.s. sand, no shell

Scale: 1 square =_____

Rite in the Rain

Numbers to call for site information (Historical)

HMPN Tommy Mack - calling 867-2260 12-19-19
cell 321-760-6798

Wally Schroeder - 321-867-1457
Mobile - 321-362-8392

2" well Taget: 43'-45'

HMPN-AS0155 Actual Screen: 39.5'-41.5'

1010 mobilizing to AS0155, post hole to 5ft. b/s.
1015 drilling initiated.
1040 soil sample pulled, call Chris Hook @ ~10:43, left message, sent text @ 1045 suggesting a screened interval of 39.5'-41.5'8, Chuck sent follow-up text. Called again @1105 - CH picked up, said okay.
1105 proceeding to set well screen at 39.5' to 41.5'., sump to 42.5 ft b/s.

PID Readings: 0.0 ppm @ all depths (40'-50')
sand pack; hydration
1130 well development completed.
1135 outer casing removed
1140 grouting, well installation complete.

Soils - Description: AS0155
40'-41.5' Gray shell fragments m.s. to pebble-gr. wl and sand (f.s. to v.f.s.)
41.5'-44' Gray clay with f.s. to v.f.s. sand and trace to little shell fragments (m.s. to c.s.)
44'-48' Gray f.s. to v.f.s. sand with clay and trace to no shell fragments (m.s. to c.s.) and random large pieces (irridescent sample shell)
48'-50' Gray clay with sand, no shell
vfg

Scale: 1 square = _____

HMPN-AS0143 2" AS Well
Target: 43'-45'
Actual Screen: 40'-42'
Sump to 43'

1145 mobilizing to AS0143.
1150 Drilling commencing
1220 soil sample pulled, confirming layer @ 42', (activation 1218) so called Chris Hook - @ 1220 - he said okay, set the screen @ 40'-42' as recommended.
1220 drilling commenced to install well.
1235 developing well.
PID Readings: 0.0 ppm @ all depths (40'-50')
1245 - Lunch - 1330 sr 1250 - 1335 1330
Soils - Description for AS0143:
40'-42' Gray m.s. to pebble-gr. shell and f.s. to v.f.s. sand
42'-45' Gray clay with f.s. to v.f.s. sand and trace to some m.s. to c.s. shell ~~fragments~~ ~~(occasional) large shells - whole or fragments~~
45'-49' Gray f.s. to v.f.s. sand with clay and (with) trace m.s. to c.s. shell fragments, some large but random
49'-50' Gray clay with trace to no shell fr. vfg. sand possible.
1340 grouting well, completing installation
1400 installation complete.

HMPN-AS0131 Actual Screen: 40'-42'
Sump to 43'

1410 mobilizing to AS0131, hand auger to 5ft b/s
1415 drilling commencing
~1438 samples pulled
1440 called Chris Hook - recommended 40'-42' screen, he said okay. Like #AS0143, the confining layer after the shell starts @ 42' b/s.
1442 drilling activities for well installation
1455 well development
PID Readings: 0.0 ppm @ all depths (40'-50')

1515 grouting well

Scale: 1 square = _____

Rite in the Rain

HMPN
~~HMPF~~ - AS0131 - cont.

Soils - Description - AS0131:

40'-42' Gray m.g. to pebble gn. shell fragments and f.g. to v.f.g. sand
42'-46' Gray clay w/ f.g. to v.f.g. sand and trace to little m.g. to c.g. shell fragments, decreasing with depth.
46'-49' Gray f.g. to v.f.g. sand with clay (can mold, but not roll well) with trace to some m.g. to c.g. shell fragments until 48' where shell fragments diminish to trace to none.
49'-50' Gray clay w/ some possible v.f.g. sand ~~no shell or~~ trace to none. shell fragments - m.g. to c.g.

1520 well installation complete.

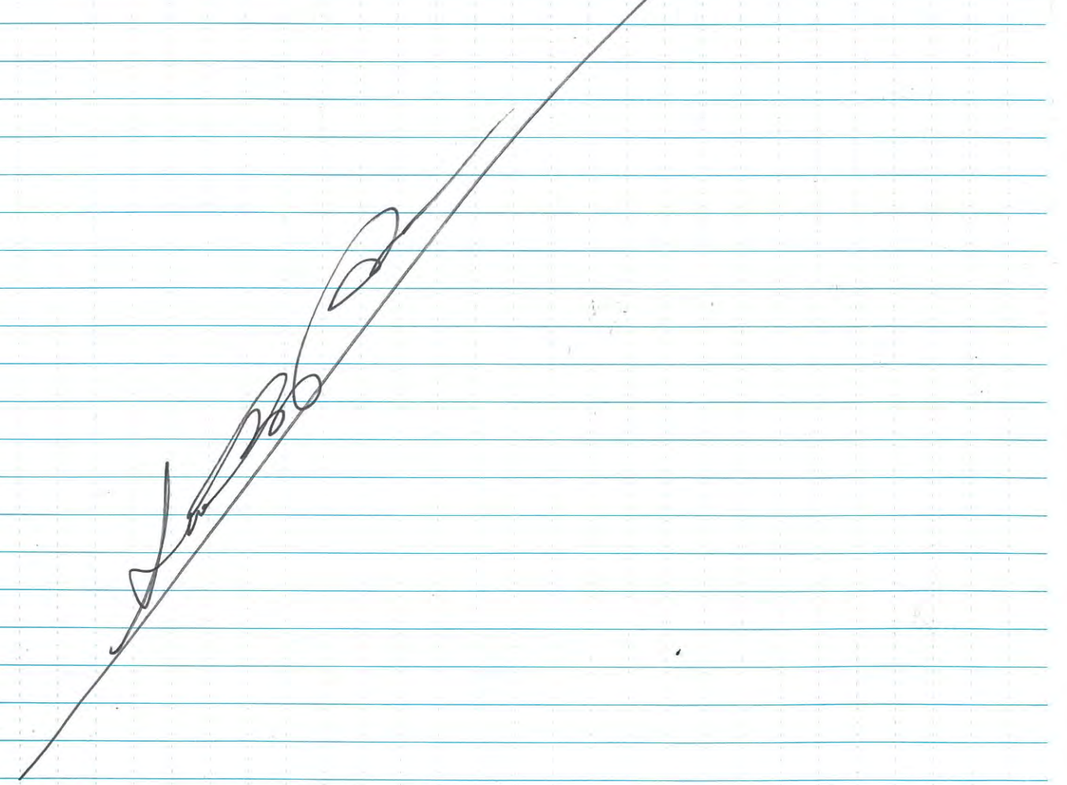
2" HMPN-AS0120 Actual Screen: 40.5-42.5', Sump to 43.5'

1525 mobilizing to AS0120.
~~1600~~ soil samples pulled
~1605 called Chris Hook - suggested a screened interval from 42.5 - 40.5, sump to 43.5 he said okay.
1610 well installation.
PID Readings: 40' 0.0 (ppm) 41' 0.0ppm 42' 2.3ppm all in ppm: 43' 4.2ppm 44' 0.7ppm
44'-50': 0.0 ppm
1625 well development

Soils - Description: AS0120 (granular)
40'-40.5' greenish gray f.g. to v.f.g. sand w/ m.g. to pebble gn shell fragments some small, whole clam shells
40.5'-42.5' same as above, but shell w/ sand (more shell)
42.5'-47.0' Gray clay (bluish gray we have been seeing)

Soils, cont'd 42.5-47' - Gray clay w/ some (f.g. f.g.) v.f.g. sand and trace to some m.g. to c.g. Shell fragments. 47'-49' f.g. to v.f.g. sand with clay and ~~trace~~ m.g. to c.g. shell fragments 49-50': Gray clay (and) with v.f.g. sand and trace to no m.g. to c.g. shell fragments

~~1700~~ 1650 removing outer pipe after completing well development, grouting well.
1710 well completed.
1730 Left site after CS's rig finished..
1735 Diverted to Banana River Road by KSC Police due to a hazardous operation.
1750 got ice for Friday.



Rite in the Rain

Friday.

0700 GPI onsite

Crews:

SR Sue Rogers T+ — Chuck Sorden T+
DL Dave Longino GPI — (MS) Malcolm Smith GPI
BY Ben Yarema GPI — Jared Link (JL) GPI
Thomas Watson (TW) GPI

Weather: Clear, 59°F

MW-0036

~~HMP NW ASO~~ Today we are drilling monitoring wells. This is while we still have room to maneuver around the AS wells.

0750 hand auger boring to 5ft b/s. @ MW0036 (10'-20' screen)
0800 drilling mw0036.
0820 well installation complete.

MW-042 / MW-42 (40'-45') a 2-well nest

MW-041 MW-042

N

0835 mobilization to mw-42
0840 post-hole to 5' b/s
0850 drilling initiated.
0910 20/30 sand around well annulus to (0.5') ½-ft. above pre-made sand pack/screen
0915 adding 30/65 sand to 2' above 20/30 sand
0920 adding grout
30 ~~0930~~ well installation complete
~~OF~~

MW-041 (30'-40' screen)

0935 mobilization to new location, 4.5' from MW-042 w/ CS & DL
0940 Discussion on distance between wells- need to space to 4.5-5.0' ft. due to grout cannot revisit due to schedule, had to move away from proposed AS trench.
1025 well grouted, completed.

Note: orientation not lined up w/ road (N-S, E-W) due to location of proposed trenches.

Scale: 1 square = _____

1035 mobilization to MW-43 (30'-40') and MW-44 (40'-45') locations.

N
W E
S

MW-0044 MW-0043

MW-044 (40'-45')

1040 post hole to 5 ft b/s, drilling initiated.
1100 1" PVC inserted within steel casing (PVC affixed with 5-ft pre-made screen & pack)
1105 20/30 sand poured into well annulus, followed by 2' of 30/65 sand. 20/30 sand to 0.5' above screen.
1120 well completed, grouted.

MW-043 (30'-40')

1120 post-hole to 5 ft. b/s, drilling initiated @ 1125
1140 1" PVC inserted within steel casing 10' pre-made screen w/ sand pack (20/30) checked screen - looks good.
1145 20/30 sand poured around screen and well annulus to ½' above screened interval followed by 2' of very fine sand, measuring sand pack (driller's DL) w/ tape, very fine sand 30/65, spraying with water.
1150 removing steel casing
1155 mixing grout, grouting well
1200 drill rig boom returned to resting position, stabilizers raised, well installation complete.
1200-1245 securing site, collected soil samples, placing the soil in the portable roll-off (dumpster) and covering with a PVC frame & tarp to prevent rainfall from entering.
1300 GPI left site
1400 T+ left site after re-painting utility marks with orange spray paint.

Scale: 1 square = _____

Rite in the Rain

Weather: cold ~ 48°F. clear

Crews:
T+: Sue Rogers (SR)
Onsite: T+ 0815 GPI: Dave Longino (DL)
; Crew 1 GPI 0900 ~~Ben Yarema (BY)~~
2 Crew 2 GPI 0930 w/ flatbed supplied

Crews:
T+: Chuck Sordon (CS)
GPI: Jared Link (JL)
Gamalier Malcolm Smith (MS)
Rivera (GR)
Gamma Thomas Watson (TW)

Air Sparge well installation
Monitoring well installation
Sonic Rig / Geo Probe

Today: Critical day day, so stay away from utilities & N_2 lines.

Chuck - on verticals until he arrives
9:45am estimated time Chuck will arrive.

HMPN-AS0067 & AS0099

0900 Filling tanks w/ water (crew 1)
0925 Dan Forester stopped by.
0930 Crew 2 arrived. (delayed due to ~~finger-~~ printing.)
~~0930~~ hand-auger to 5ft b/s @ 067
0950 mobilizing to 099. 19' from N_2 line
1005 hand-auger to 5ft b/s @ 099.
1020 soil core pulled from 0067
1025 called C. Hook - he said 42-44' screen total 45' (C.L. @ 43.8) I recommended either 43.5 or 44'. (0067) HMPN-AS0067
1030 proceeding to install AS0067.
1040 developing well 0067
1045 sample pulled @ AS0099 - C.L. @ 44.5, so Chris H. said set @ 42.5 - 44.5 as recommended. (total depth 45.5')
1050 proceeded to install AS0099.
1100 developing AS0099
1130 grouting AS0067
1135 GPI lunch. → ~ 1205

AS0099 Actual Screen: 42.5 - 44.5' 2" AS well

AS0067 Actual Screen: 42'-44' in AS well

HMPN-AS00

no positive PID Readings for AS0067 or AS0099.

Soil Boring descriptions for AS0067 & AS0099 → (next page)

Scale: 1 square = _____

AS00~~99~~ Soil Boring - Description

40 - 42.5 Greenish (Gran) gray f.s to v.f.g sand w/ tr. v.c.g to med. gr. shell fragments
42.5 - 44.5 greenish gray f.s. to v.f.g. sand and coarse to med. gr. shell fragments - some small intact, tr. silt possible
44.5 - 45.5 Gray* f.s to v.f.s SAND and clay (Gran) with little to some v.c.g. to m.g. shell fragments, some small intact - 2" oyster shell included
45.5 - 48.0' Gray* CLAY, little to some f-s. to v.f.g sand trace to little c.g. to m.g shell fragments, rolled into shapes
48.0 - 50.0'6" SAND, ~~tan~~* f.s to v.f.g, and clay not able to roll w/o crumbling, little to some (Gran) v.c.g. to m.g. shell fragments
* could be a bluish gray

AS0067 Soil Boring - Description.

40.0' - 43.8' SHELL V.C.g. to med. gr. (Greenish gray) some up to 1" across, and f.g. to v.f.g. sand, tr. silt possible
43.8 - ~ 46.5 same (wash-out, so assumed clayey) with some clay
46.5 - 50' SAND greenish gray f.g. to v.f.g. trace to some v.f.g.c. to m.g. (Gran) shell fragments.

Washout = 3/5 recovery

1-6-20 Continued on next page →

Scale: 1 square = _____

Rite in the Rain

~~HMPN~~ AS0108 2" Actual Screen: 43'-45' 2" AS well

1210 mobilizing to AS0108, hand auger to 5ft b/s
1305 sample - soils
~~1255~~ ~1307 called C. Hook, C.L. @ ~45.2' after measuring from deep end of clayey layer) so screen @ 43'-45', total depth 46'.
1310 commencing to install air sparge well AS0108.
(ppm) PID Readings: 40' 2.8ppm 41' 0.4 42' 4.8 43' 1.0 44' 3.3 45' 1.0 46' 0.0 47' 0.0 48' 0.0 49' 0.0 50' 0.0 (ppm)
The soils from 40'-45' have a sweet chemical/anti-freeze type odor.
1330 developing well.

HMPN-AS0108 Soil Description

40'-43' Greenish Gray f.g. to v.f.g. sand with trace to little c.g. to m.g. shell fragments (like beach sand)
43-45.2' SHELL (fragments) ~~with~~ v.c.g to m.g., many intact, ½" across. and greenish gray f.g. to v.f.g. sand
45.2-50' Blue-gray CLAY, little to some vfg sand, trace to little vcg to m.g. shell fragments. when sliced w/ scraper, ridges remained in clay, could be rolled.
1405 well complete, drill rig boom lowered for mobilization.

Next location to east →

Scale: 1 square = _____

HMPN-AS0~~20~~089 (to west) 2" Actual Screen: 43'-45'

1415 mobilization & hand-auger to 5ft b/s.
1430 lowered boom to hand auger
1435
1505 sample collected
1509 Chris Hook said to set screen at 43'-45' total depth 46' based on the confining layer starting at 45' (approximately). Measured backward from 47'-50' sample since it was so well-formed (clay)
1510 DL and GR proceeded to install AS well
1530 developing well.

PID Readings (in ppm) 40' 7.2 41' 3.8 42' 8.4 43' 13.4 44' 4.0 45' 6.4 46' 1.0 47' 2.1 48-50' 0.0ppm

HMPN-AS0089 Soil Boring Description:

~~40.0~~ 40.0'-42.5 Greenish gray f.s. to v.f.s. sand w/ trace ~~gran.~~ v.c.s. to m.g. (mg) shell fragments (very coarse to med. shell fragments)
42.5-45.0 SHELL fragments, v.c.g. to m.g., some intact, trace 2" across Greenish gray
45.0-46.0 transition zone, same w/ some Gra clay, Large 2" oyster shells included. (trace) Gray
rolled into shapes ← 46.0-49.0 CLAY with little to some sand, little to some v.c.g. to m.g. shell fragments
49.0-50.0 SAND and clay (f.s. to v.f.s. Sand) Gray trace to little vcg to mg shell fragments.
1615 well completed.

moving to east for 4th AS well today →

Scale: 1 square = _____

Rite in the Ra

1630 mobilizing to AS0088 2" AS well

1650 GPI/T+ left site after CS's well was developed. Will proceed with AS0088 on Tuesday.

T+ onsite 0700
GPI onsite 0700/0710
Air Sparge well installation

Crew
SR {Dave Longino (DL)
Gamalier Rivera (GR)
CS {Jared Link (JL)
Thomas Watson (TW)
Malcolm Smith (MS)

Weather: cold, 45°F, clear. frost on ground

HMPN-AS0088 - 2" AS well Actual Screen Interval: 44.5-46.5
depth to sump: 47.5

hand auger to 5ft b/s.
Sample taken, called Chris Hock w/ 46.5 depth to C.L. He said set the screen at 44.5-46.5 (sump to 47.5 - total depth)
0835 commencing to install well
PID Results: 40' 0.0 41' 1.4 42' 2.1
43' 5.6 44' ~~142~~ 21.2 45' 33.1 46' 0.4
47' 2.3 48' 0.3 49' 0.0 50' 0.0
0845 developing well.

Soil Boring Description: AS0088

40.' - 44.0' SAND - greenish gray f.g. to v.f.g. with coarse to m.g. shell fragments (
44.0 - 46.5' SHELL - and sand greenish gray f.g. to v.f.g. shell fragments - very coarse to medium, some small intact. Silt possible
46.5 - 50.0 ~~Greenish~~ Gray CLAY, some f.g. to vfg sand, trace to little c.g to m.g. shell fragments

Scale: 1 square = _____
Rite in the Rain

HMPN - AS0088 - cont.

0900 taking pictures of soil cores
0910 Ryan O'Meara stopped by - talked to SR
Then CS on site updates, left @ 0945.

HMPN - AS0096 Actual screen 44'-46'
total depth: 47'

0930 mobilizing to AS0096, hand auger to 5ft bls
0955 soil samples taken
0958 called C. Hook - C.C. @ 46', so he said to set the screen @ 44-46'
PID (in ppm) 40' 5.4 41' 1.0 42' 0.3 43' 1.4
44' 17.3 45' 2.0 46' 4.2 47' 0.0
48' 0.0 49' 0.0 50' 0.0

Soil Boring Descriptions: - AS0096

40.0' - 44.0' Gray f.g to v.f.g. sand, trace to little m.g. shell fragments
44.0' - 46.0' SHELL - gray - v.c.g. to m.g. (greenish gray to gray?) and f.g. to v.f.g. sand, silt possible
46.0' - 49.0' Gray CLAY, little to some v.f.g. sand, trace to little c.g. to m.g. shell fragments (more of a bluish gray)
49.0 - 50.0' SAND - v.f.g.; and clay trace to little v.c.g. to m.g. shell fragments Gray

~1015 developing well.
1045 AS well installation completed.
1050 mobilizing to AS0107, but drill rig down - part of boom rubbing, awaiting arrival of mechanic from Orlando ~ 1230. So down time 1100 - 1500.
1400 Claude arrived to fix the rig. He encountered issues @ badging (was not on the list) so there was a delay. He has been coming out here

(cont.) every time there is a drill rig fix and no problems with badging, so we are uncertain why he was no longer on the list. CS took care of making sure Claude is back on the list again.

1420 - writing #'s on wells & confirming on map.

1500 Drilling resumed.

HMPN - AS0107 Actual 44' - 46' Screened interval total depth 47'

1545 Soil sample collected
1549 called C. Hook - C.C. @ 46' so he said 44' - 46' sounds okay.
1550 AS0 well installation initiated.
1555 20/30 sand poured within well annulus
PID readings: 40' 0.9 41' 1.0 42' 0.6
43' 0.0 44' 0.0 45' 0.0 46' 0.0
47' 0.0 48' 0.0 49' 0.0 50' 0.0
1610 developing well

Soil Description - Borings: AS0107

40.0' - 43.0' Gray f.g. to v.f.g. sand with trace c.g. to m.g. shell fragments - some tiny intact clam shells (random) and one small, isolated clay lense @ 41' (~1" some larger intact 3"-2" across)
43.0 - 46.0' SHELL - gran. VCg to m.g. and some sand, some silt, possible trace clay
46.0 - 48.5' CLAY (Gray) with little to some f.s. to v.f.g. sand trace to little v.c.g. to m.g. shell fragments. random 3" shell piece
48.5 - 50' Sand and clay tr. to little v.f.g. to m.g. shell fragments (f.g. to v.f.g. sand) Gray
1640 well installation complete.
1645 mobilization to AS0119 (HMPN), hand auger boring to 5' bls already done.
1650 AS0119 drilling underway.

Rite in the Rain

HmPN-AS0119 2"

Actual Screen: 43'-45' (sump to 46')

(cont.) drilling underway @ 1650.
1710 sample collected @ AS0119
1716 called C. Hook - said c.c. is at 45' so, he recommended to set the screen @ 43'-45', (total depth to sump, 46')
1720 proceeding to install AS well.

PID Readings (in ppm) 40' 0.0 41' 0.0
42' 0.6 43' 48.1 44' 12.5 ppm 45' 1.6
46' 0.0 47' 0.0 48' 0.0 49' 0.0
50' 0.0

took pictures
1735 - GPI left job site, Tt stayed on to finish w/ soil pictures. very buggy, getting dark

Soil Boring Descriptions: AS0119

40'-42' SAND - fine to very fine-grained, trace coarse to medium shell fragments, some tiny intact clams
42'-45' SHELL - granular to medium-grained; some fine to very fine sand
45'-48' CLAY, little to some fine to very fine sand, trace to little gran. vcg. to medium shell fragments
48'-50' SAND - very fine-grained, little clay, trace to little granular to medium shell fragments

1745 SR left job site.

HMF North
(HmPN old nomenclature) Wednesday, Jan 8, 2020

GPI, Tt 0700 SR @ 0715 - had to grab PID out of charger.

Weather: cold, 50°F Clear

Note: Ask drillers about bentonite from 50' to 46' when we have a deeper well. (AS)

HmPN-AS0119 - cont.
0715 developing well
0745 well installation complete.

HmPN-AS0130 Actual Screen: 40'-42' total to sump: 43'.

0832 soil sample collected
0835 called C. Hook - told him that the clayey layer starts at about 42' b/s. So we agreed to set the screen at 40'-42'. Also noting that there is no sand layer here, indicating a shallower C.L. With the deeper C.L. locations there was typically a substantial sandy layer (sand w/ shell) ~3 ft. then the shelly layer (shell hash). We are moving closer to G Avenue (east).
0840 20/30 sand poured into well annulus.

PID Readings: 40' 0.8 41' 2.7' 42' 0.3
43' 0.0 44' 0.0 45' 0.0
46' 0.0 47' 0.0 48' 0.0 49' 0.0
50' 0.0.
0855 developing well.

Soil description next page →

Rite in the Rain

HMFN - AS0130 Soil Boring Description

40'-42' SHELL - Gray c.g. to m.g. fragments, trace to some whole snail shells, (~1" across) some f.g. to v.f.g. sand, little silt

42'-43' Same with some clay and clay lenses and larger shell fragments present - 2" across clam shell pieces

43'-45.5 Gray Clay, trace to little vfg sand, silt possible trace c.g. to m.g. shell fragments

45.5-~~47.0~~ 48.0 Gray CLAY and f.g to vfg sand, trace to little c.g. to m.g. shell fragments; some tiny intact snail shells,

47.0-50.0 Gray fg to vfg Sand and clay, trace throughout to none m.g. shell fragments, clay lenses, silt possible. ~~some~~ random tiny intact clam & snail shells very sparse w/ shell fragments

0915 removing outer casing.
0920 well installation complete.

HMFN - AS0142 - 2" AS Well

Actual Screened Interval: 39'-41'
Total Depth 42'

0925 mobilizing to AS0142 hand augers to 5' bls, etc.
1000 soil sample taken
1014 called C. Hook. - said C.L. @ 41' -
1004 shallower, closer to G-Avenue - we agreed on a screened interval from 39'-41', total depth to slump 42'.
1015 well installation commencing.

PID Readings: 0.0 ppm at all depths.

HMFN-AS0142 Soil Boring Description

40'-41' SHELL - GRAY - VGG gran. to m.g. and f.g. to v.f.g. sand, trace to some silt possible, some small shells intact, random fragments up to 2-inch across. (oyster, conch pieces)

41-41.5 Same w/ clay lenses

41.5-45.0 CLAY - Gray and fg to vfg sand trace to some c.g. to m.g. shell fragments, ~~some~~ random large pieces up to 1" across,

45.0-48.5 Gray SAND fg to vfg and clay, trace to none c.g to m.g. shell fragments - more like none., clay lenses.

48.5-50.0 Gray CLAY, some vfg. Sand trace to none ~~c.g.~~ c.g. to mg shell fragments - more like none.

1030 developing well. (AS0142)

HMFN-AS0154

Actual Screened interval - 42.5-44.5' sump to 45.5.

mobilizing to AS0154. soil samples collected called C. Hook - said this is a weird one - same elevation, but ~2' sand above the shell consulted w/ CS and called C. Hook back. C.S. said 44.5 screen depth, 45.0 to push it

PID Readings: 0.0 ppm at all depths (40'-50') 1-ft. intervals, but detected an odor - like Play doh / WD-40' - sweet chemical smell.

Soil Borings Description → next page.

cont. discussion w/ C. Hook (after asking C.S.'s opinion - he said 44.5, so 42.5-44.5 for screen. Note: I initially thought 42'-44' for conservatism,

but there is a transition zone from 44'-45'; SHELL and/some clay

Soil Borings - Description - AS0154

40'-42.25' Greenish Gray f.g. to v.f.g. SAND; trace c.s. to m.g. shell fragments, some tiny clam shells intact.
42.25-44.0 SHELL - (Gray) ~~more Bluish~~ (gran.) VCg to m.g. some fg to vfg sand, some to little silt. Greenish Gray
44'-45' ~~Same w/ some clay~~ SAND f.g. to vfg, some (gran.) VCG to med gr. shell fragments, small intact & larger (1" pieces) some clay, silt possible
45-48' CLAY (more bluish gray), some vfg sand, trace c.g. to m.s. shell fragments, increasing w/ depth some small whole snail shells (& clam)
48'-49.5 Gray SAND - f.s. to vfg, (gran.) and ~~some~~ clay, some vcg to m.g. shell fragments, decreasing w/ depth (trace to none)
49.5-50 Gray clay, little vfg sand, silt possible, trace to no med. gr. shell fragments.

HMPN - AS0159 2" AS well

mobilizing, hand-augr to 5' b/s
soil sample collected
called C. Hook - Actual Screened Interval: C.L. @ 43', so we agreed 41'-43' on 41-43' for screen. Total depth: 44'.
PID Readings: 0.0 ppm at all depths
1445 checking the depth to 20/30 sand (ML)

HMPN-AS0159 - cont.

Soil Borings - Description

40'-42' Greenish Gray SAND - fs to v-fg w/ trace to little vcg to mg shell fragments
42'-43' SHELL - greenish gray (gran.) VCg to intact ½" shells, to mg fragments and fg to vfg sand, silt possible
43-44 CLAY and sand (more clay) fg to vfg sand little to some vcg to mg shell fragments
44'-47' CLAY, some fs to vfg sand trace to some (gran.) VCg to mg shell fragments.
47-49.5 SAND fg to vfg, some clay (will not roll), trace cg to mg shell fragments random large piece (½") (Bluish gray) silt possible
49.5-50.0 Bluish gray CLAY, some fs to vfg sand trace to none cg to mg shell fragments

HMPN-AS0164

Actual Screened Interval: 41'-43'
Sump depth: 44'

mobilizing to AS0164
1620 soil samples collected
called C. Hook - we agreed on 41-43' screen
1635 measuring the 20/30 sand pack.
PID Readings: 0.0 ppm at all 1.0' intervals.
1640 developing the well.

Rite in the Rain

HMPN-AS0164 Soil Boring Description

40'-43' ~~Sft~~. Greenish Gray SHELL - vcg (gran.)
to mg
43'-43.5 ~~Greenish~~ (gran.) vcg to mg ~~SAND~~ Gray SHELL, some fg to vfg Sand (&) some clay, possible silt
sluish?
43.5-48.5' CLAY (gray) some f.g. to v.f.g. sand, trace to little c.g. to m.g. shell fragments
48.5'-48.5' SAND fg to vfg and clay sand -
f.g. to v.f.g. trace to little c.g. to ~~f~~m.g. shell fragments.
48.5-50' CLAY (gray), little f.g. to v.f.g. sand, trace to none c.g. to m.g. shell fragments
1705 adding casing extension to well.

Chuck info. for tomorrow morning:

#207 ~~62.5~~ 63.5° angle 49' depth

#209 48.8° or 49° 58.2' depth w/ sump included.

Scale: 1 square = _____

Weather: cool, ~~51~~ 61°F, windy
0700/0700

Crew:
(CS) Chuck Sorden Sue Rogers (SR)
(MS) Malcolm Smith Dave Long (no (JL))
(JL) Jared Link Gemma Rivera (GR)
(TW) Thomas Watson

Here w/ both crews (SR) 7:11 ~1000. (1030)

HMPN-AS0173 DL & GR
~~HMPN-AS0207~~ JL, TW, MS

0730 mobilizing to AS0173.
0740 mobilizing to angle well AS0207
0750 called C. Sorden to verify line-up (may be 2"-4" to south) He said that's okay. JL is proceeding with 63.5° angle, *49' depth length, total depth 43'. * 49' including sump.
0810 AS0173 drilling commencing
0820 Both rigs advancing steel casing to depths specified.
0844 Soil borings (samples) pulled for AS0173.
0846 called C. Hook w/ C.L.C @ 40.5' 6/s So, he said to set screen @ 38.5-40.5, 41.5' to sump. We are about 50' to the west of G. Avenue. JL helping while AS0207 hydrates. (AS0173)
0850 proceeding to drill 41.5' well @ AS0173.
0855 20/30 sand in well annulus @ AS0173
0900 bentonite pellets to 3' above 20/30 sand.
0905 AS0207 still hydrating
PID Readings for AS0173: 0.0ppm @ all 1' intervals
0915 developing AS0173.
0930 AS0207 hydrating, completed 0935 mobilizing to AS0207.

Soil descriptions for AS0173
40'-~~41~~ 40.5' (gran.) Greenish gray SHELL vcg to mg, some fg to vfg sand and some silt
40.5-~~41~~ 45.5' Bluish gray CLAY, some fg to vfg sand and some silt possible, trace to little shell frag
45.5-48.0 SAND and clay (Bl. gray) trace shell to 47', then no shell fragments, no silt, 48-49.5 ~~SAND~~, CLAY little ~~some~~ sand, trace to none mg shell

0850 drilling proceeding @ 209 angle - had to stop, re-position
0900 #209. - angle well - aimed at utility flag
instead of 209B stake - have to re-do
after 20' casing advanced.
0900 - re-positioning rig. Angle: 48.8° (49°)
and 57.2 length - ~ 58 + 9 = 39'
0910 commencing drilling w/ corrected position
toward 209B stake.
0915 drilling underway @ AS0169. (vertical 2"
well) (0930 grouted AS0173) Actual Screen (0169)
1035 sample collected at AS0169 = 38.5 - 40.5
1041 called C. Hook - AS0169 - C.L. @ 40.5
so we are setting the screen @ 38.5 - 40.5
PID Readings: 0.0 @ all 1.0' intervals
1100 developing well.
1130 well installation complete.

AS0169 Soil Borings Description

40.0 - 40.5 ~~gre~~ gray (gran.) Shell - vcg to mg; some
fg & vfg sand ~~and~~ clay (little clay)
40.5 - 49.0 CLAY; bluish gray - gray
with some sand: fg to vfg, trace to
no shell, especially diminishing w/ depth
49 - 49.5 Gray clay - no shell
49.5 - 50.0 SAND - gray fg to vfg and
clay, no shell
12:00 - 12:30 TT lunch (SR) 12:00 - 1300 GPE

AS0168 (HMPN) Actual Screen 39.5 - 41.5

1315 mobilization, hand auger boring complete
1320 drilling commencing.
1355 samples collected 40' - 50'
1358 called Chris Hook - C.L. @ 41.5, but
not as defined from 40 - 41.5 (some clay
mixed in, but unconsolidated w/ sand &
shell) So we agreed on a screen from
39.5 - 41.5', total depth 42.5' (to sump)
1400 well installation initiated
1420 well development
PID Readings 0.0 ppm at all 1-ft intervals
of soil samples

AS0168 - Soil Borings - Description

40.0 - 41.5' Greenish gray (to gray?) SAND -
f.g. to v.f.g. and Shell fragments - v.c.g. to m.g.
2 - 2" oyster shells found, little silt possible.
little clay
41.5 - 44.5 CLAY; little to some sand,
trace to some v.c.g. to m.g. shell
44.5 - 48.5 SAND and clay w/ clay lenses
(Gray), trace to no m.g. to c.g. shell
fragments, ~~little~~ (v.f.g. sand), little silt possible
48.5 - 50.0 Gray CLAY, no shell, little
v.f.g. sand, little silt

1500 well installation complete - AS0168.

HMPN - AS0201

Actual Screen interval: 40.5 - 42.5 sump to 43.5

1555 soil samples collected
1558 called C. Hook - C.L. @ 42.5, but a
transition zone from 42.5 - 43.5.
PID Readings: 0.0 at all 1-ft intervals
for the 40' - 50' samples. (in ppm)
1640 well development complete, finishing
well installation w/ grout.

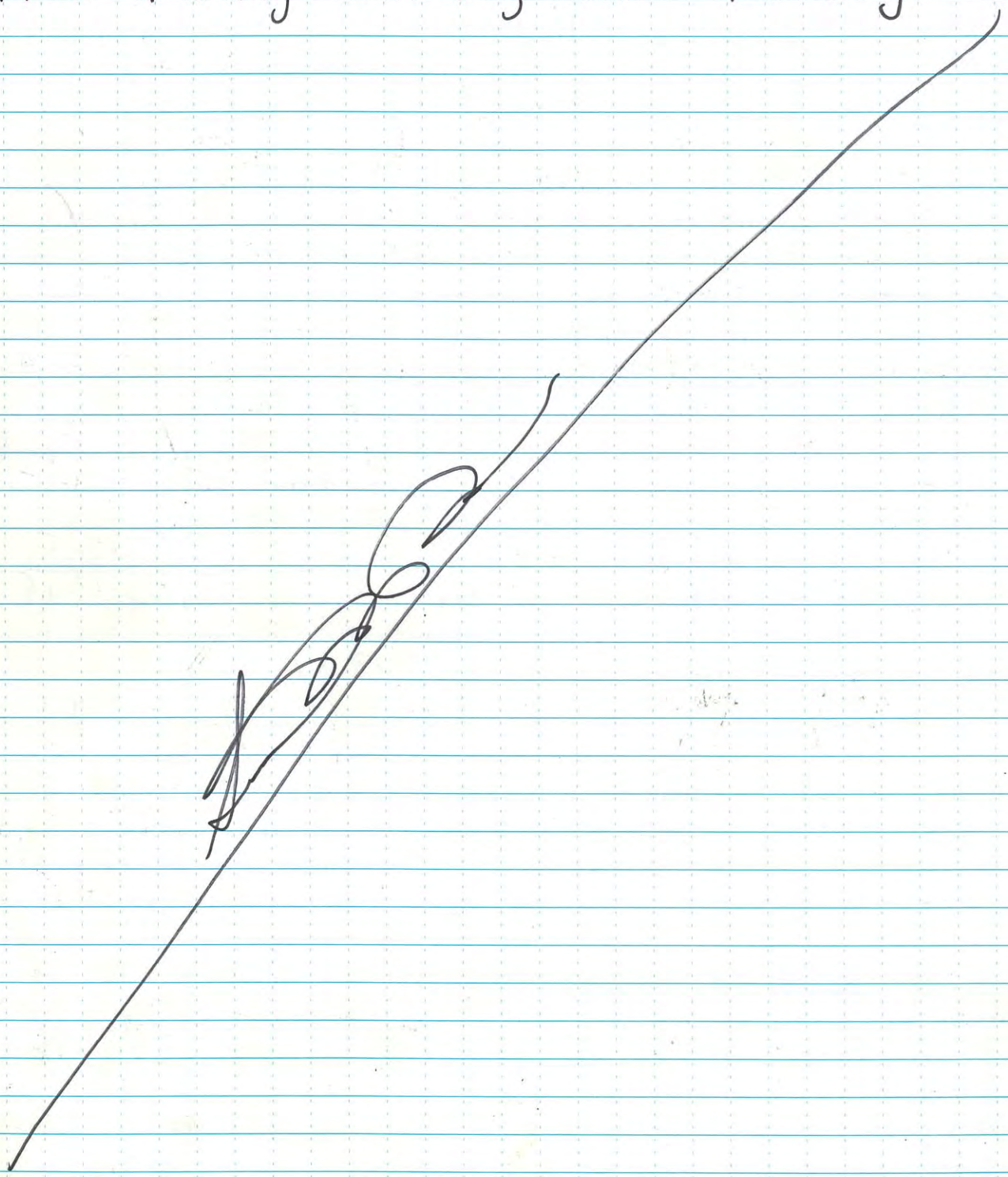
Soil Borings - Description: HMPN - AS0201

40.0 - 42.5 Greenish gray (gray) SHELL -
(gran.) vcg to mg, some whole intact, 2" across
snail and clam shells; some fg to
vfg sand, some silt
42.5 - 43.5 transition zone - same w/ little
clay, large oyster shell
43.5 - 46 Gray CLAY; little to some vfg sand,
trace mg shell; silt possible → (cont.)
easily rolled.

Rite in the Rain

46 - 49.5 Gray vfg SAND - and clay, little to some m.s. shell, silt possible.
49.5 - 50.0 CLAY; (Gray) little vfg sand, trace to none m.g. shell fragments.

1700 raising drill rig mast for day.



Scale: 1 square = _____

HMFNorth

Jan 10, 2020
Friday

Weather: warm, 66°F
Clear.

Tt 0700 GPI 0700

Personnel:
Chuck Sorden (CS)
Jared Link (JL)
Malcolm Smith (MS)
Thomas Watson (TW)
Sue Rogers (SR)
Dave Longiri (DL)
Gamma Rivers (GR)

Location AS0200 (HMPN) 2" AS Well

0740 mobilizing to AS0200, hand auger to 5 ft b/s
0814 pulled soil samples
0817 called C. Hook - C.L. @ 44' (after consulting w/ DL on partial recovery of 40'-45' sample - DL said it some of the shelly soil was lost due to water coming out - so sample remaining is representative of more sandy/shelly layers)
So, we are setting the screen @ 42'-44', total depth 45' (to sump)
0820 proceeding to install AS well.
PID Readings: 0.0ppm at all 1-ft. intervals (40'-50')
0840 Developing well.

Actual Screen Interval: 42'-44'
depth to sump: 45'

Soil Borings - Description - HMPN-AS0200
40.0-41.5' SAND - f.g. to v.f.g. greenish gray with trace to some c.g. to m.g. shell fragments
41.5'-44.0' SHELL - vcg to mg, some ½" across, & intact (small), silt possible
44.0'-46.5' Gray CLAY; and f.g. to v.f.g. sand, with some to little shell fragments - vcg to mg, some 1" - across (fragments), decreasing with depth (shell content)
46.5-49.5' SAND - gray - o fg to vfg and clay, trace c.g. to m.g. shell
49.5-50.0 CLAY and sand - Gray sand fg to vfg, trace cg to mg shell.

0940 well development complete, well installed & grouted.

Scale: 1 square = _____

Rite in the Rain

HMPN-AS0197 2" AS Well. Actual Screen Interval: 40.5-42.5 sump to 43.5

0930 mobilizing to HMPN-AS0197.
0940 drilling initiated.
1012 soil samples collected
1014 called Chris Hook - C.L. @ 42.5, so screen @ 40.5 - 42.5. (We agreed) and total depth to 43.5' bls.
1015 drilling initiated for well installation.
1030 developing well.
PID Readings: 0.0 ppm at all 1-ft intervals for 40'-50' samples - soils (vadose ~)

Soil Borings - Description - AS0197

40-42.5 Greenish-gray SHELL - vcg to mg, some intact and sand vfg to fg, silt possible
42.5-48' Gray CLAY - and sand (fg to vfg) silt possible 2 intact conch shells @ ~~42-43'~~ 47' ~~48-49.5'~~ 48' one 4" across, the other 2½" across 48' w/trace to little cg to mg shell fragments
48'-49.5' Gray CLAY; little vfg sand sticky, firm, difficult to cut w/ scraper. 0.0 no shell

48.0 - 49.5 Gray SAND - f.g. to vfg and clay, trace to none shell fragments. vc.g to m.g.

lunch - GPI 11:14 ≅ 1145
lunch T+ 11:30-12:05 (take-out) @HQ/restroom

1200 mobilizing @ HMPN-AS0153 - see next page.

HMPN-AS0153 Actual Screen: 40.5-42.5' sump to 43.5

1205 proceeding to drill
1230 soil samples taken - 2 bags since first one tore
1233 C. Hook was called, C.L. @ ~42.5' so (40'-45') he said okay to set at 40.5 - 42.5 (Screen) so sump to 43.5' bls.
1235 proceeding to install AS well
PID Readings: 0.0. at all 1-ft. intervals for 40'-50' soil samples. (Note: CS detected 490ppm farther west @ 40'-45' core.

Soil Boring - Description - AS0153

40'-41' Greenish gray f.g. to vfg. sand with trace (Gray) v.c.g. to m.g. shell fragments
41'-42.5' Greenish gray (Gray) SHELL and fg to vfg sand, silt possible, random larger shells like an intact 1"-across clam shell.
42.5-48' Gray CLAY and sand, silt possible with trace to little c.g. to m.g. shell fragments
~~Rain~~
48'-49.5' Gray SAND - f.g. to v.f.g. and clay, trace to none shell fragments, vc.g. to m.g.
49.5'-50' Gray CLAY; little very fine sand.
Rain interruption - 30 min. or so ~1:15-1:45 so 45 min. No work stoppage - well developing, working on soil boring log in car.
AS0153 well completed, site cleanup for weekend, CS conducting well inventory.

1445 leaving site. T+/GPI

HMF North (HMPN)

ther: Warm, 73°F Partly Cloudy Crew - Sue Rogers (SR)
Dave Longino (DL)
rrived onsite 0820 GPI ~ 0900 Gamma Rivera (GR)
ck Sorden (CS) Crew: Jared Link (JL) Malcolm Smith (MS)
& Thomas Watson (TW)

Police "onsite to re-check N_2 lines:

HMPN-AS0141 Actual Screen: 41'-43' sump to 44'

200 mobilizing to location, hand auger to 5ft 6/s
202 proceeding to drill
028 Soil samples taken @ 40'-45' and 45'-50'
031 called C. Hook - I told him that the confining layers is at about 43', but could be pushed to 43.5 (43-43.5 clay sand, silt) He said to keep it at 41'-43' for the screen. (sump to 44')
PID Readings: 0.0 ppm at all 1-ft intervals (40'-50')
045 Developing well
110 Removing 6" steel casing, spraying w/potable water.

Soil Borings Description: AS0141

40'-43' Gray (more bluish) SHELL - vcg to mg, some intact & up to 1" across & smaller clam shells, some fg to ufg sand, silt possible
43'-43.5': Transition - same w/ little to some clay
43.5-47.5 - Gray CLAY - little vfg sand, trace to none c.g. to mg shell fragments, increasing shell from 45.5-46.5, then decreasing to 47.5
47.5'-49.5' SAND - fg to vfg and CLAY (Gray) trace vcg to mg shell fragments, silt possible
49.5-50' Gray CLAY; little vfg sand, no shell.

1130-1230 GPI lunch. ~~ft~~ lunch 1135-1205

~~HMPN-AS0129~~ Actual ~~Screen~~:

1230 ~~mobilizing~~, hand augering ~~sump~~ to: CS Rig will drill.
1245 drilling underway (10 min into initial drilling)
1250 stopping to stabilize rig - slanting due to unstable substrate & near ditch. this rig does not pivot like the other one as per CS & DL.
1300 Drilling resumed, stopped again. Mast put in horizontal, resting position, moved rig a bit more clockwise, mast upright again, then put back into resting position.
1400 mobilizing to area south of ditch after

(cont.) re-stocking Bobcat w/ supplies.
1400 unable to pivot (the rig) and could not stabilize w/ wooden posts, so abandoning hole for other rig to drill since they can pivot. moving south of E-W ditch, near building.
So down-time 1235-1430.

other side of ditch ▷ HMPN-AS0114 Actual Screen: ~~31.5-33.5~~ 41.5 43.5'

1440 ~~1445~~ mobilization to HMPN-AS0114, hand-auger bony to 5'/s
1445 drilling commenced.
1520 samples collected.
1524 called C. Hook - C.L. @ ~~33.5~~ 43.5' so I (SR) suggested a screened interval @ ~~31.5'-33.5'~~ 41.5'-43.5'. He said sounds good.
1525 setting well.
1540 developing well
PID Readings: 0.0 ppm at all depths (1'-intervals)

Chuck's Boring: AS0028: Soil Description:

25'-33' Greenish gray f.s. to V.f.s. sand SAND - with trace to little c.g. to m.g. shell fragments
33-35' same with little clay, little silt

(Logging & taking pictures while CS and Chris Adkisson set up signs) PID Readings for AS0028: 0.0 ppm at all depths: (25'-35')
1630 grouting AS0028. Set well @ design 30'-32'

Back to AS0114:

taking pictures, logging soils

HMPN-AS0114 Soil Borings - Description

40'-42' Greenish gray fg to vfg SAND, trace to none c.g. to m.g. shell
42'-44' SHELL - greenish gray vcg (gran.) to mg, some f.g. to v.f.g. sand, little silt, trace clay at 42'
44'-48' Gray CLAY, some vfg (gran.) sand, trace to some shell fragments - vcg to mg

Rite in the Rain

48' - 49.5 Gray SAND - fg to v fg and clay, trace to little ~~fg~~ vc.g. to m.g. shell fragments

49.5 - 50' CLAY, little sand, no shell (gray) (HMPN-AS0114-cont.)

Scale: 1 square =

CONTENTS

PAGE	REFERENCE	DATE

HMF North
(HMPN - old nomenclature)
Jan. 14, 2020 (Tues.) Sue Rogers (SR) Crew: Dave Longino
Gamma Rivera
Weather: warm, overcast
~71°F

GPI 0700
T+ SR 0730 CS 0700

Chuck Sordon (CS) Crew:
Jared Link (JL), Thomas
Watson (TW)

HMPN - AS0125

Actual Screen: 43'-45'

0730 drilling underway.
~0808 sample collected for 40'-45', 45-50' sample lost (clayey continuous sample - can see clayey streak on outside of steel casing.
0811 called C. Hook w/ report of no confining layer encountered from 40'-45', so we agreed to set the screen @ 43'-45', sump (TD) to 46'.
0820 pouring 20/30 sand in well annulus
0825 measuring depth to sand
PID Readings: 0.0 ppm at 1-ft intervals of 40'-45' core.

Soil Boring Description - AS0125 Note: 45'-50' wash-out.

40'-43' Greenish gray SAND fg to vfg, trace shell fragments cg to mg, silt possible (tr.).
43'-45' Greenish gray SHELL ~~and~~ VCG to mg, trace intact 1"- across and intact very small clam shells silt possible (tr.)
~0830 Claude onsite for repairs - traded out Bobcat.
0900 well development ongoing.
0905 grouting the well

45'-50' WASH-OUT

HMPN - AS0137

2" AS
Actual Screen: 41'-43'
Total to sump: 44'

0920 mobilizing to AS0137.
0955 soil samples collected.
0957 called C. Hook, reporting the C.L. @ ~1" shy of 43', so he said to set the screen at 41'-43', Sump to 44'
0958 commenced to install 2" AS well AS0137.

Scale: 1 square = _____

Rite in the Rain

HMPN-AS0137 - cont.

Soil Borings - Description - AS0137

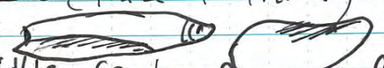
(might be greenish)
40'-41' Gray SAND - f.g. to v.f.g., trace vcg to mg shell fragments
41'-43' Gray SHELL - vcg to mg, trace 1" across intact clam shells, 1" shell fragments w/some sand and some silt
43'-45' Gray CLAY, little ~~sft~~ fg to v fg sand, trace to little cg to mg shell fragments.
45-47' same, w/ increasing shell content (some shell)
47-50' Gray SAND, fg to vfg and clay, trace to none cg to mg shell fragments, decreasing with depth.
PID Readings: 0.0 ppm at all 1'-intervals
1015 developing well
1040 grouting well, drill rig mast put in horizontal position.

HMPN-AS0149

2" well
Actual Screen: 40.5-42.5
sump to: 43.5

1050 mobilizing to AS0149
1055 Drilling commencing
1125 soil cores taken.
1129 called Chris Hook w/ C.L. @ 42.5', so he said, to set the screen at 40.5-42.5', total depth 43.5'
PID Readings: 0.0 ppm @ all 1-ft. intervals (40'-50')
1135 commencing to install AS well.

Soil Description of Borings Collected - AS0149

40-42.5 Greenish gray SHELL and fg to vfg sand, trace silt possible, ~~some~~ (trace to little) intact large (1" across) shells  small
42.5-45' Gray CLAY, little fg to vfg sand, trace to some cg to mg shell
45'-49' Gray SAND and clay, trace to little vcg to mg shell fragments 49'-50' Gray CLAY, little sand, trace to none vcg to mg shell fragments (decreasing w/ depth)
1200 Well development complete.

le: 1 square = _____

HMPN-AS0149 - cont.

1215 Well installation complete.
GPI Lunch 1230-1305
T+ lunch 1240-1300 - HQ restroom N/L

HMPN-AS0195

Actual Screen: 41'-43' 2" AS Well
sump to 44'

1320 mobilizing to AS0195
1348 soil samples pulled
1352 calling C. Hook w/ depth to C.L. @ 43' 5/s. He said to set screen @ 41'-43' w/ total depth to 44'
PID Readings: 0.0 ppm @ all 1'-intervals (40'-50')
1405 ~~developing well~~ 20/30 Sand in well annulus

Soil Borings - Description - AS0195

40'-41' Greenish gray fg to vfg SAND with little to some vcg to mg shell fragments
41'-43' Greenish gray SHELL (some 1"- across, intact clam, 1/3"-across intact conch shell, some fg to vfg sand and silt
43'-45.5. Gray clay, little fg to vfg sand, trace cg to mg shell fragments
45.5-49.5 SAND fg to vfg gray and clay, shell fragments little to some cg to mg shell fragments to 48' then decreasing to trace to none.
49.5-50.0 Gray CLAY, little sand (fg to vfg) no shell.

1420 developing well

HMPN-AS0150

Actual Screen: 42'-44'
sump to 45'

~1500 mobilizing to AS0150, drilling commenced.
~1540 soil samples taken - incomplete & slid into deeper bag (sand & shell) so SR compared it to surrounding AS well soil samples-cores (C.L. @ 45', 43' 42.5, 43) So we can push it

Scale: 1 square = _____

Rite in the Rain

to 45' since there is 2'+3' of sand/shell in the bags (but split up & slid into deeper sample & clay slid out prosumeably). So SR called C. Hook and said we can go to 45' & push it, or go somewhere in the middle. So we decided on 42'-44' for the screen, sump to 45'.

550 Well installation commenced.
PID Readings: 0.0 ppm at all 1-ft intervals (incomplete samples due to wash-out)

1610 well development.

1650 grouting well

Boring Log Description: HMPN-AS0150

WASH-OUT*
40'-43.5' Greenish gray SAND - fg to vfg; little silt, trace to little vcg to mg shell
43.5-45.0' Greenish gray SHELL and sand, some silt, trace larger intact shells (actual size)

45.0-47.5' Gray (more bluish) CLAY; trace to some vcg to cg shell fragments, little vfs sand
WASH-OUT*

* the shallow samples appeared to shift deeper. DL noted that part of the clayey soils could not be sampled. Pictures were taken of this missing core. 'fell out.

40'-45' → deeper

1700 Tetratech and GPI left the job site.

SR - T+ onsite @ 1115 (dr. appt.)
CS - T+ onsite @ 0700

T+ Sue Rogers (SR)
T+ Chuck Sardon (CS)

Crew: Jared Link (JL)
Gamma Rivera (GR)
Thomas Watson (TW)

Weather: Warm, clear

Location HMPN-AS 0148 Actual Screen: 41.5-43.5 sump to 44.5

mobilization (CS supervised)
1155 Soil samples collected 40-45, 45-50 cores
1158 called C. Hook w/ C.L. @ 43.5, 50 we agreed to set the well screen at 41.5-43.5, sump to 44.5.
PID Readings: 0.0 ppm @ 1'-intervals-soils
1215 developing well.

Soil Borings Description - AS0148

40'-41.5' Greenish gray SAND fg to vfg w/ trace cg to mg shell fragments
41.5-43.5' Greenish gray SHELL and fg to vfg sand, trace silt 2" across intact clam (one)
43.5-45 Gray CLAY and sand (fg to vfg) some VCG to mg shell fragments
45'-48' Gray CLAY, some fg to vfg sand trace to little mg shell fragments
48'-50' Gray SAND and clay, trace to none cg to mg shell fragments, reducing to none w/ depth.

Lunch - SR 1230-1300 GPI 1215-1315

Location HmpN - AS0136

Actual Screen:
AS0136 = 40.5 - 42.5

15 drilling initiated
110 Samples collected - soils
414 called C. Hook w/ c.c. @ 42.5 so we agreed to set the screen @ 40.5 - 42.5, sump to 43.5.
PID Readings 0.0 ppm @ all 1-ft. intervals
415 proceeding to set well.

Soil Core Descriptions - AS0136

40' - 41' Greenish gray SAND - fg to vfg; little silt, trace to little vcg to mg shell fragments
41 - 42.5 Greenish gray SHELL - vcg to mg, some random large 1" - across clam shells, some intact, trace of silt
42.5 - 47.5 CLAY (gray) some fg to vfg sand random 1" - across intact clam shells, little vcg to mg shell fragments
47.5 - 50' Gray SAND fg to vfg; and clay trace to none shell fragments - cg to mg; clay lenses throughout.

1435 developing well
1515 grouting well.

Location HmpN - AS0115

Actual Screen:
42.5 - 44.5
sump to 45.5.

505 mobilization to AS0115.
543 soil samples taken.
546 called C. Hook w/ C.C. @ 44.5, he said set screen @ 42.5'-44.5'
550 20/30 sand poured into well annulus
555 outer steel casing removed.
PID Readings: 0.0 ppm at all 1-ft. intervals
1600 developing well.
1640 well installation completed, grouting well.
Soil Description on page 3 of 3. →

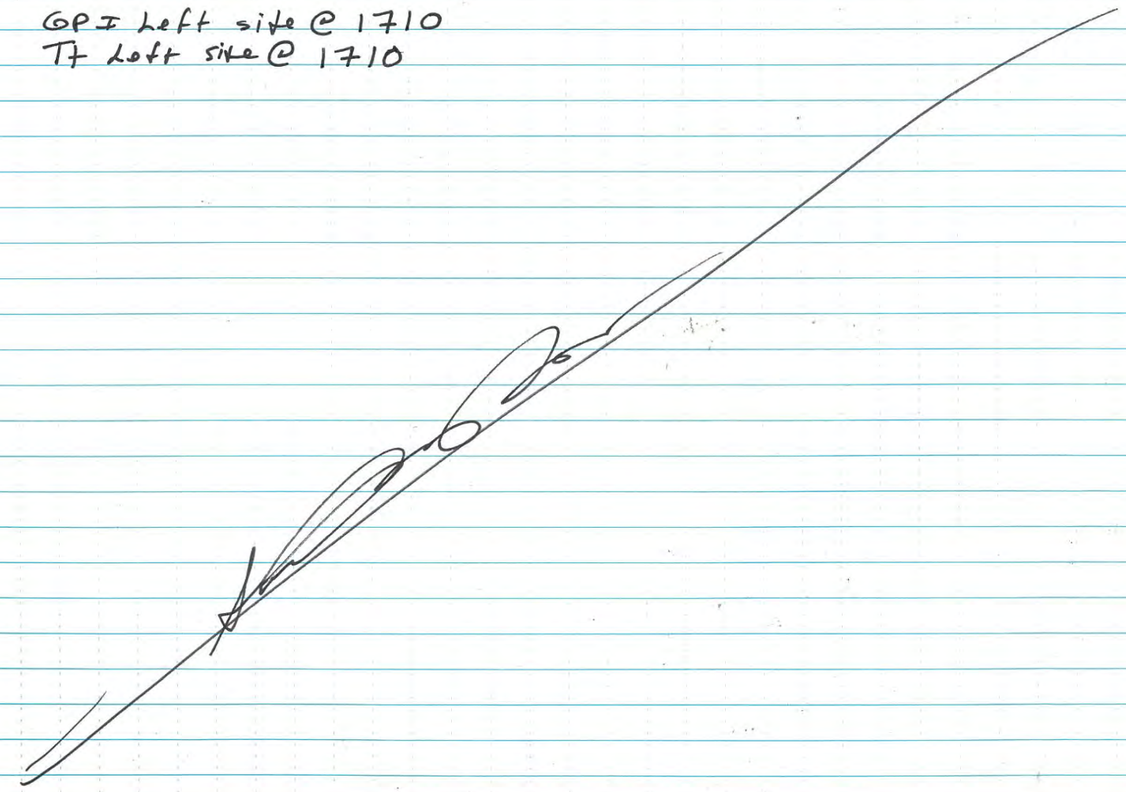
Scale: 1 square = _____

Soil Boring Description - AS0115

40 - 41.5 Greenish gray SAND - f.g. to ~~f~~ v.f.g. trace to none c.g. to m.g. shell, increasing w/ depth
41.5 - 44.5 Greenish gray SHELL - vcg to mg, some larger 1" - across intact clam shells, trace silt
44.5 - 48.5 Gray CLAY; some fg to vfg sand, trace to little ~~silt~~ shell fragments vcg to mg, random 1" long shell fragment.
48.5 - 50' Gray SAND - f.g. to v.f.g.; some clay, no shell.

moving equipment to northern side of ditch. and closer to G-Avenue.

GPI Left site @ 1710
TT Left site @ 1710



Scale: 1 square = _____

Rite in the Rain

Weather: Clear, warm 66°F

T+ onsite 0700 Crew T+ Chuck Sorden (CS)
GPI onsite 0700 T+ Sue Rogers (SR)
GPI: Dave Lossino (DL), Jared Link (JL) Gamma Rivera (GR), Thomas Watson (TW)

Chris Hook out-of-office, so we are deciding the screen depth.

Along 6 Avenue today, road closed for drilling as per signs by CS & Chris Adkison

HMPN-AS0212 Vertical, 2"

0745 Drilling commenced. samples 40'-50'
0820 samples pulled. ~20% recovery - first 25 feet - all sand, so consulted w/ C.S. We agreed on setting the screen at the design interval of 41'-43', total depth 44'
0825 drilling to set well. Actual Screen = 41'-43'
0835 20/30 sand followed by bentonite pellets.
PID Reading: 0.0 ppm for 40'-42.5 interval
Note: well moved 1' to west away from utilities.
Soil Boring Description: AS0212

40.0'-42.5' SAND - med to fg with some c.g. to m.g. shell fragments, trace of silt.
42.5'-50.0' WASH-OUT, no samples.

0850 Developing well
0920 Well installation complete.

HMPN-AS0211 2" vertical
Actual Screen: 41'-43'

0925 mobilization to AS0211 TD to 44'
0955 samples collected - 100% sample recovery
C.L. @ 43' clearly defined, set screen @ 41'-43', sump to 44';
~~09~~1000 well installation initiated.
1015 Developing well.

HMPN-AS0211 - well installation complete @ 1050.

HMPN-AS0211 - cont. Note: well moved 1-foot to west to avoid utilities.

PID Readings: 0.0 ppm at all 1-ft intervals

Soil Boring Description: AS0211

40-41.5 ~~Sturgh~~ granular gray SAND - mg to fg, little to some vcg to mg shell fragments, trace whole intact
41.5-43 Greenish gray SHELL (granular) vcg to mg, some larger intact clams and mg to f.s. sand trace silt
43-47.5 Gray CLAY, little mg to fg sand
(1) 3" intact conch shell, but trace to some shell fragments
47.5-50 Gray SAND mg to fg, and clay, trace to no more cg to mg shell fragments

HMPN-AS0191 - drill rig on wooden support beam.

1055 mobilizing to AS0191. Actual Screen: 43'-45'
1145 sample collected, no recovery for 45'-50' core, the sandy/shelly sediments shifted downward (deeper) ~~so to~~ most probably - we have a full 5' sample in the "deeper" sample bag of the sediments indicative of the shallower strata. So, consulting w/ CS, set screen @ 43'-45', sump to 46'.
1150 proceeded to install well casing
1205 developing well - ~~1220~~ 1215
PID Reading: 0.0 ppm @ all 1-ft intervals for 40-45' (presumed) sample.
GPI lunch 1215-1245

Soil Core Description - AS0191

40-44' gran. Greenish gray SAND - mg to f.s. little vcg to mg shell fragments
44-45' gran. Greenish gray SHELL - vcg to mg, and sand - mg to fg, some (trace) intact shells - 1" across clam shells →
45'-50' No Recovery

Rite in the Rain

Monitoring Well Development: (TW)

MW-33	start 1130	off @ 1200	@1135 water looks clear
MW-32	start ~~1140~~ 1200	off @ 1230	@ 1210 "
MW-31	start 1250	off @ 1320	@ 1300 "
MW-30	start 1320	off @ 1350	@ 1336 "
MW-29	start 1350	off @ 1420	CS checked - said clear

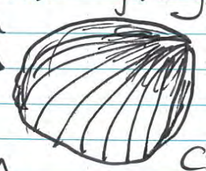
(00 before #)
pumping for 30 min/each well
Note: well moved 1' to west to avoid utilities

HMPN-AS0189 - 2" Actual Screen Interval 44'-46' sump to 47'

1325 hand auger to 5ft b/s.
~~1400~~ 1400 samples collected - deeper C.L. observed @ 46', so consulted w/ CS to see if there is a max. depth for the AS wells (design-wise). We agreed to set the screen at 44-46' total sump depth 47! Incidentally, we decided that 37' should be the deepest bottom screen depth to stay consistent with other locations.
1410 well installation to TD 47'
1430 well development
PID Readings: 0.0 ppm @ all depths.
(40-50', 1-foot intervals)
Note: well moved 1-foot to west to avoid utilities.

Soil Borings Description - AS0189

40'-44' Greenish gray SAND - mg to fg with trace to little shell fragments (mg to cg)
44'-46' Greenish gray SHELL - vcg to mg some larger



drawn to scale

46'-47' Gray (gran.) CLAY, some mg to fg sand, little to some vcg to mg shell fragments
47'-49' Gray CLAY, little mg to fg sand, trace to

none shell fragments
49'-50' SAND (gray) - mg to fg and clay, trace to none m.g. shell fragments.
1455 well installation complete.

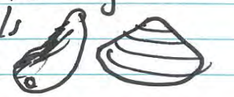
HMPN-AS0186 2" AS Well

Actual Screen: 43'-45'
depth to sump: 46'

1505 mobilizing to HMPN-AS0186 had to turn rig around to back up to the location from the north.
1525 hand-auger to 5' b/s
1545 soil samples pulled - CS determined screen at 43'-45'
1605 developing well
Note: well moved 1-foot to west to avoid utilities.
PID Readings: 0.0 ppm at all 1-ft. intervals, 40'-45' sample. (wash-out) 5/10 recovered, Shallow sediments slid into deeper sample bag no recovery for clayey soils.
1620 well development complete.

Soil Core Description - AS0186

40'-43.5 Greenish gray (gran.) SAND - m.s. to f.g. with trace vcg to mg shell fragments including intact tiny clam shells
43.5-45.0 Greenish gray (gran.) SHELL - vcg to mg some large intact 1½" across clam shells



45'-50' no recovery assumed to be clayey soils like nearby AS locations.
1650 Grouting AS0186.

Monitoring Well Development (TW)

MW-0035 ___ start time to ___ water looks clear @ 1520
MW-0034 ___ start time to ___
MW-0042 ~~1610~~ start time to 1645 (JL)
Note: concrete well pads were completed today by JL. He added labels with well #'s engraved.

also MW-0041 1645 start time to ___ cloudy @ 1650 & tan
(JL) Left site @ 1700

Rite in the Rain

MF North (HMPN - old nomenclature)
Friday, Jan 17, 2020

Weather: Cool, windy 70°F

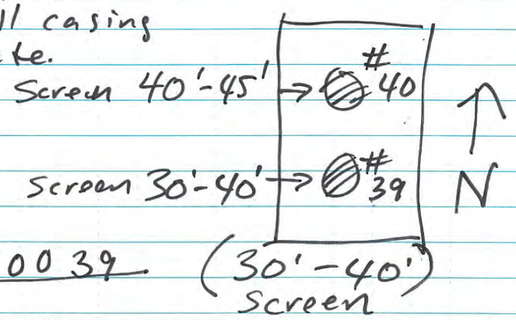
Monitoring Well Installation - G Avenue area

Personnel: GPI
Dave Longino (DL)
Gamma Rivera (GR)
Jared Link (JL)
Thomas Watson (TW)

T+
Sue Rogers (SR)
Chuck Sordon (CS)

Monitoring well MW 0040 (40'-45' screen)
1"- casing

1720 mobilizing to MW 0040 location
1740 drilling commenced after hand augering to 5' b/s.
1800 measuring to top of 20/30 sand, adding more sand, attaching PVC
1805 retrieving steel drill casing
1830 well installation complete.



Monitoring Well MW 0039 (30'-40' screen)

0845 hand auger to 5' b/s
0905 20/30 sand poured in annulus
0915 grouting hole
0925 well installation complete.

General Rules of Thumb - Tetra Tech
1' or greater make a note of move - for utilities or obstruction.
tolerance rule - utilities within 2' must dig to find utilities & hand dig of course at drilling site.

: 1 square = _____

HMP North Friday, Jan 17, 2020

0935 Mobilizing to location HMPN-AS0039.
0940 at location - very mucky, soft, but level ground.

HMPN-AS0039 - Near borrow pond - east of G-Avenue.

0955 setting up at AS0039. 1" diameter
1000 drilling initiated. Target screen: 30-32'
1025 sample collected - Actual Screen: 30'-32'
5/10 Recovery (no 1' sump w/ 1" AS wells)
25'-30' assumed collection, went to 32' total depth as per design; no C.L. found.
1030 proceeded to set AS well.
PID Readings: 0.0ppm for 25'-30' interval.
1050 Developing well.

Soil Descriptions - AS0039. (25'-30' 30'-35' not recovered.)
25'-29' greenish gray f.s. to vf.g. SAND; trace intact small clam shells ◇ ← size
29'-30' greenish gray to gray f.s. to v.f.g. SAND, trace silt, trace clay, trace intact small clam shells. ~~35'~~ (30'-35' No Recovery)

Well Development - CS taking notes today, will transfer to this notebook.
Well MW-0045
940
0945 started development as per CS to 1010
Well MW-0027 developed 1015-1045
Well MW-0028 developed 1050-1120
(CS)

MW-45 940-1010
MW-27 1015-1045
MW-28 1050-1120

Notes: monitoring wells
Wells in water 35, 37, 43-45 well
high water area underwater in borrow pond.

1115 AS 0039 grouted and completed.

Scale: 1 square = _____

Rite in the Rain

PI Lunch: 1120-1200 T+: none

HMPN-AS0038 next. 1" well
25'-35' samples
Target Screen: 30'-32'
Actual Screen 30'-32'

1200 mobilization
1205 drilling initiated.
1240 soil samples collected
1245 decision to go with design screened interval of 30'-32' (no sump) well installation initiated
? ~~7~~6/10 sample - looks like it slid deeper, so we approximated the sample depths at 25'-32'
PID Readings - 0.0 ppm at all 1-ft. intervals
1305 Developing well.
1335 Well development completed.

Soil Description - AS0038

~25'-27' Greenish Gray vfg SAND, trace intact tiny clam shells, trace silt
~27'-29.5' vfg sand, trace intact tiny clam shells - greenish gray sand- to little
~29.5-30' Gray vfg sand with trace silt, ~~####~~ trace to little clay, trace shell - intact tiny clam shells
~30'-32' Gray SAND - fg to vfg, with little vcg to mg shell fragments.
~32-35 Wash-out, sample slid deeper 6-7/10 total recovery
1340 completing well, grouting complete @ 1345.
~1430 CPI Left site.
1430 checking levels in frack tank, putting covers back on drum area - Frack tank level 18" which coincides w/ gallons.
0-/500 spraying utilities w/ orange paint - same lines, re-sprayed where faded. They were all faded! CS & SR
~1500 Left site, wrote field notes.

Jan 20, 2020 Page 1 of 4
HMF North

MLK Day - Govt. employees off.

Project # 112G08982

Weather: Cold 52°F
Sunny & windy

0830 T+ onsite
0900 GPI onsite

Crew: Chuck Sordon (CS) T+ — Sue Rogers (SR) T+
Jared Link (JL) GPI — Dave Longino (DL) GPI
Mickey Ritter (MR) ↓ — Gamma Rivera (GR) ↓
Thomas Watson (TW) ↓

HMPN-AS0036 1" diameter
Target: 30'-32' (no sump) Screen
Actual Screen: 30'-32'

0940 mobilizing to AS0036.
sample collected 25'-30' 30'-35'
1015 10/10 sample recovery - DL used casing w/ a welded lip to hold the soils better.
1035 developing well.
1050 well development completed
1050 called Chris Hook to let him no retroactively That we set this well @ 30'-32' (the design depth) He said fine & I said I would call for the next one. (Last week set w/o calling - CH out-of-office)
1055 completing well.
PID Readings: 0.0ppm @ all intervals

AS0036: Soil Sample Description: 25'-29' Gray vfg sand, ~~HMPN-AS00~~ trace to none shell fragments, (trace) vcg to mg.
29-30' same w/ trace silt 30'-32' back to vfg gray sand (tr. to none shell)
1105 mobilizing to AS0033 → (soils - cont.) 32-32.5 same (grad) with some silt, some clay 32.25-34 same and shell fragments vcg to mg, some intact 34-35 back to gray vfg sand, trace shell.

AS0033 (HMPN-) 1" diameter
Target: 30'-32'
Actual 29'-31'

1105 mobilizing to AS0033
1150 soil samples collected
1155 called Chris Hook - told him that the silty/clayey layer is at 30' 2" or So and that the elevation is about 2' lower than the previous location. He said to set the screen @ 29'-31'.
1200 proceeding to install well.

Rite in the Rain

HMF North

210
205 developing well. (AS0033)

Soil Log Description - AS0033

25'-27.5' Gray vfg sand, trace to little vfg to (gran.) mg shell

27.5-30.25 Gray fg to vfg SAND, little to some (gran.) shell - med. shell fragments, some intact and 1 large scallop shell noted. silt possible

30.25-30.75 Gray SAND - vfg with some silt and clay, little vcg (gran.) to mg shell fragments

30.75 - 31.5 Gray SHELL and vfg sand

31.5-33.5 Gray fg to vfg SAND, trace silt, trace clay, trace vcg (gran.) to mg shell fragments.

33.5-34 Gray fg SAND; some silt, some clay

34-35' Gray SAND fg (mg?) and shell fragments - vcg (gran.) to mg.

GPI lunch: 1230-1340* - & had to go to Titusville for drill rig supplies - coolant fluid? *So really a shorter lunch.
TT lunch = 1245-1315 SR to HQ, but N/C (to HQ)

1345 grouting well annulus, replacing stake.

HmPN-AS0035 1" AS Well Target: 30-32'
Actual Screen: 27.5-29.5'

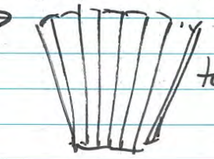
1400 mobilizing to AS0035, setting up matt for stabilization @ muddy soils; slight incline.
1415 drilling commences.
1435 soil samples taken
1440 called Chris Hook - told him about the silty sand starting @ 29', then the denser clayey layer at 29.5'. He said to set the depth at 29.5'. So this will go 6" into the slightly lower K layer.

HmPN-AS0035 - cont.

PID Readings: 0.0 ppm @ all 1-ft. intervals (25'-35')
1455 developing well.

Soil Sample Description: AS0035

25'-27' Gray SAND - vfg; trace vcg to mg shell fragments, some intact clam shells
27'-29.5' Gray SAND - vfg; some silt, trace clay, increased vcg to mg shell fragments with depth (goes from trace to some)
29.5-30' Gray CLAY, little vfg sand, little silt trace vcg to mg shell fragments
30'-32.25' Gray clay/silt/sand (loam) and vcg to mg shell fragments (~30%)
32.25-33 Gray CLAY and sand, vfg, some silt, trace to little vcg to mg shell fragments
33'-34' Gray SAND, vfg f.s. to v.f.g., trace clay, trace shell fragments - vcg to mg (gran.) and random large pieces →
34'-35' Gray SAND - m.g., trace to no shell fragments - vcg to mg.



to scale

1530 well installation complete.

HmPN-AS0037

Actual Screen: 28'-30'

1535 mobilization to AS0037
1600 soil samples collected
1606 C. Hook, was called - C.L. (clay) found @ 30.5' but soils are transitioning from 30'-30.5', sandy soils up to 30', so C. Hook said to set screen @ 28'-30'. He also mentioned that the DPT results showed contaminants at shallower depths, so that's good.
1610 well installation commenced.
1615 20/30 sand poured in annular space
1620 developing well
PID Readings: 0.0 ppm at all 1-ft. intervals (25'-35')

(no sump)
Design: 30'-32'

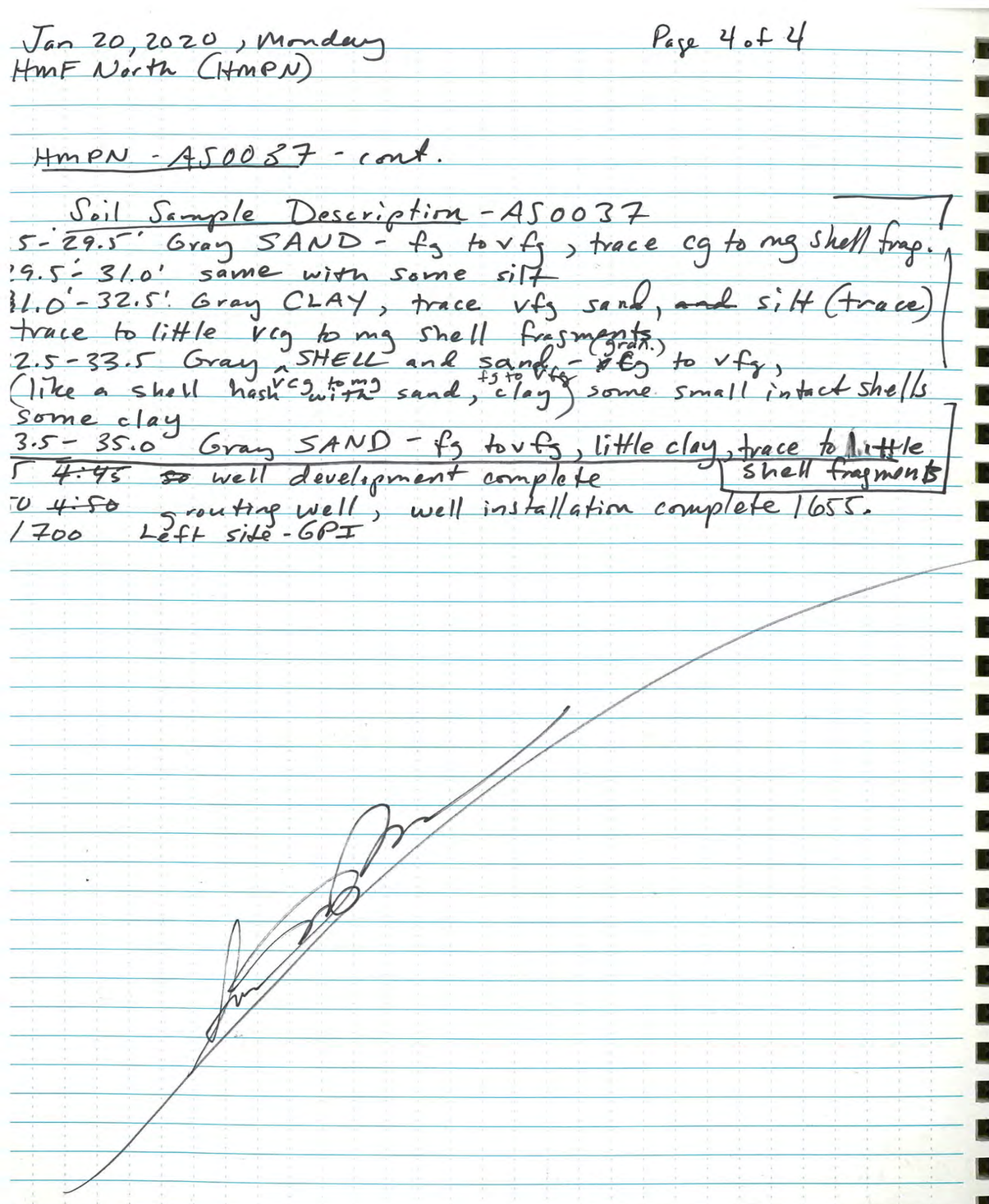
Rite in the Rain

HMPN - AS0037 - cont.

Soil Sample Description - AS0037

5'-29.5' Gray SAND - fg to vfg, trace cg to mg shell frag.
29.5'-31.0' same with some silt
31.0'-32.5' Gray CLAY, trace vfg sand, and silt (trace)
trace to little vcg to mg shell fragments (gran.)
32.5-33.5 Gray SHELL and sand - vcg to vfg,
(like a shell hash vcg to mg with sand, fg to vfg clay) some small intact shells
some clay
3.5-35.0 Gray SAND - fg to vfg, little clay, trace to little shell fragments

~~1545~~ ~~so~~ well development complete
~~1550~~ routing well, well installation complete 1655.
1700 Left site - GPI



Scale: 1 square = _____

Personnel: Sue Rogers (SR) - TT
Dave Longino (DL) - GPI
Gamma Rivera (GR) ↓
Chuck Sordan (CS)
Jared Link (JL)
Mickey Ritter (MR)
Thomas Watson (TW)

Weather: Cold, 48°F Clear.
Arrival time: GPI 0700
TT 0700
Project Manager: Chris Hoole (CH)

Back to the borrow pond area:

① HMPN-AS0041

0740 mobilizing to AS0041
samples collected
called C. Hoole (CH) and told him about the confining layer starting @ 29.5'. It is well-defined & persists into the 30-35' core. So he said set the screen @ 27.5'-29.5'.

Actual Screen: 27.5 - 29.5

0930 well installation complete.
See page 2 of for soil descriptions & PID Results.

② HMPN-AS0040

called Mark Jonnet for coodinates since the stake has been buried probably by the Bobcat running over the area. He said measure between #38 and #42 and AS0040 is the half-way mark along that same line. So SR ran the line and found the general location. DL then SR dug until the stake was found & corrected to its upright position.

0935 mobilization to AS0040.
1005 soil samples collected
1009 called CH, he texted back asking that I (SR) text the information. So SR texted the recommendation to screen from 27.5' - 29.5'. Delay in

Scale: 1 square = _____

Rite in the Rain

HMPN-AS0041 - PID Results: 0.0ppm @all 1-ft intervals
HMPN-AS0041 Soil Boring Description: (25'-35')

25'-29.5' Greenish gray SAND - vfg, trace cg
, 31.0 to mg shell fragments, some whole mini clam shells
29.5-~~32.0~~ Greenish gray CLAY; little vfg sand,
trace shell fragments - cg to mg, solid clay
lenses.
31.0'-32.0' G. gray SHELL and sand, vfg little clay,
trace silt possible fg to vfg
32.0-35.0 Greenish gray to gray SAND, little clay,
trace vgr cg to mg shell.

HMPN-AS0040 - cont.

response so CS made the field decision
to set the well as recommended by SR,
in the interest of time. When CH responded
to latest text w/ field decision, he
concurred (1050)
045 well installation implemented.
1100 developing well
1125 well installation complete.
PID Readings: 0.0ppm at all 1-ft. soil intervals
(25'-35')

HMPN-AS0040 Soil Boring Description

25'-29.5' Greenish gray SAND - vfg, trace cg
to mg shell fragments, some whole mini clam shells
29.5-~~32.0~~ 30.0' Greenish gray CLAY, little sand,
trace cg to mg shell fragments
30.0-31.0' sand again (like 25'-29.5')
31.0-31.5 Gr. gray SAND and shell (vcg to mg),
little clay (vfg sand)
31.5'-35.0' Greenish gray SAND, vfg, trace
clay, trace to some shell fragments (vcg to mg)
random larger shell fragments.

lunch - GPI from ~~1145~~ = got water for truck
first, so 1155 — 1245 (50 min.)
T+ no lunch, just to LH2 bldg.

Scale: 1 square = _____

③ HMPN-AS0042 Actual Screen: 27'-29' (no sump) 1" AS well

1130 mobilizing to HMPN-AS0042. (then lunch)
Note: location moved 2.0 ft. to the northeast
to accomadate room for the drill rig mast,
next to the palm tree, very close to borrow pond
(but >5')
1250 drilling initiated.
1315 soil samples collected
1320 called CH- he said that 27'-29' sounds good,
after SR stated that the confining layer starts
at 29' and persists until 32'-33' (approximately).
So, we are drilling the well to 29', with a 27'-29' screen.
1320 proceeded to drill/install well.
1325 20/30 sand, bentonite pellets; hydrating, pulling up steel casing
1330 developing well.
1405 well installation complete.
PID Results: 0.0 ppm at all 1-ft. intervals (25'-35')
Soil Borings-Description: AS0042

25'-29' lt. greenish gray SAND - vfg with
trace of shell fragments - cg to mg - tiny intact clams
29'-31' lt. gray CLAY, trace vfg sand, trace
cg to mg shell fragments
31'-32' Gray SHELL and vfg sand ~~(+fg?)~~,
little clay
32'-34' Gray SAND - fg to vfg, some clay,
trace vcg to mg shell fragments
34'-35' Gray SAND - mg to vfg, little to
some vcg to mg shell fragments (small intact
clams) trace clay, ~~or~~ trace silt

④ HMPN-AS0034

1615 mobilizing to the low-lying mushy area
next to the N-S. ditch (on the eastern side)
laying down the mud mat (of G. Avenue)

KSC wind warnings 25-35 knots.

Scale: 1 square = _____

Rite in the Rain

1" AS well

HPN-AS0034 - cont. Actual Screen: 26'-28' (no sump)

1430 drilling commencing @ AS0034.
~1453 samples collected - soils
1456 called CH - described the stratigraphy with a silty sand appearing @ 28' and a clay at 29'. He said to set the screen at 26'-28' after checking the PPT results.
1510 hydrating ~~bentonite~~ sand 20/30 followed by bentonite pellets
1545 removing steel casing, completing well
PID Results: 0.0 ppm at all 1-ft. intervals (25'-35')
1525 developing well.

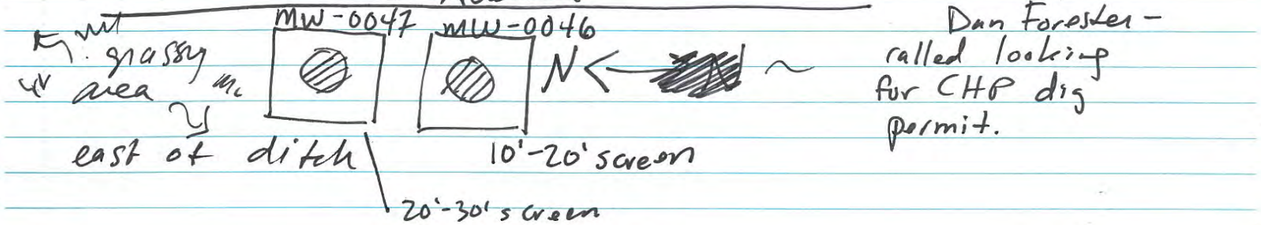
→ Soil Sample Description - AS0034

25'-28' Greenish gray SAND - vfg, trace vcg to mg shell fragments - some tiny intact clamshells
28'-29' same with some silt and ~~some~~ little (or trace) clay.
29'-30.5 Greenish gray CLAY, some vfg sand, trace to little shell fragments
30.5-31.5 Gray SHELL - vcg to mg, some larger pieces, some vfg sand, ~~some~~ little clay, ~~some~~ little to trace silt
31.5-34 Gray SAND - fg to vfg, some clay, trace silt, trace vcg to mg shell fragments
34'-35' mg to fg sand (gray) and c.g. to m.g. shell fragments, some intact tiny clam shells

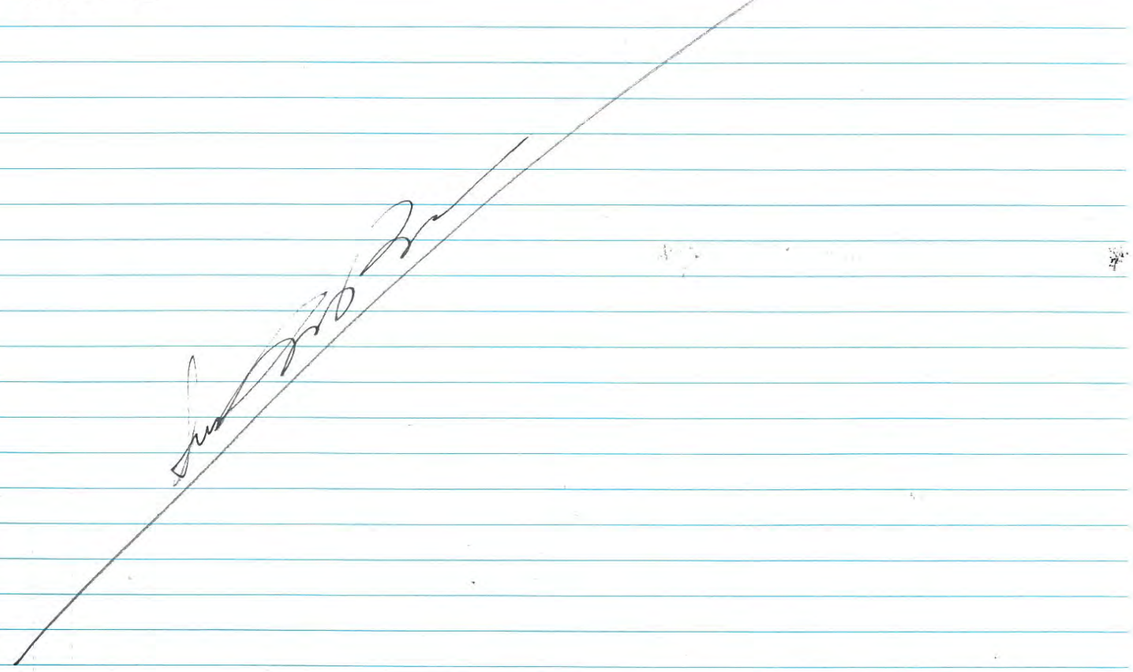
~~HMPN-AS0032~~ no - will install the monitoring wells due to mucky conditions at remaining AS well in this area. (vertical AS well). Will install tomorrow w/ additional equipment / mud gear.

MW-0047 (screen 20'-30') "deeper"

1615 commencing well installation. mileage 1way
1625 1" PVC casing inserted within casing. 170744
1635 20/30 30/65 sand to 170753
1650 grouting well.
1655 well installation complete



Left site @



Weather: cold, clear 43°F
Project # 112G08982

Crew - Sue Rogers (SR) TT
Dave Longino (DL) GPI
Gamma Rivera (GR)
Chuck Sordan (CS)
Jared Link (JL) GPI
Thomas Watson (TW)
Mickey Ritter (MR)

- dif" day, so all crews
) eastern area near borrow pond.
0700
0900 Geoff NASA Safety stopped by

Well # MW-0046 (Screen 10'-20')

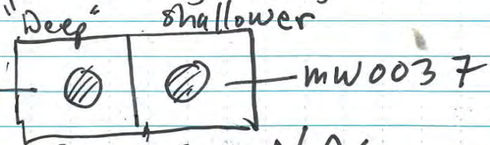
0730 Bobcat won't start - charging battery - could be the cold.
0750 drilling commenced.
0800 working on drill rig mast - lube
0915 drilling resumed.
0935 sand packs added (20/30, then 30/65)
0940 raining, 52°F.
0945 well installation complete.

Well # MW-0038 (Screen 15'-25')

1000 mobilizing to MW-0038, laying down mud-mats, location next to borrow lake
1010 drilling commencing
1030 raining harder, taking break, SE took pictures
1100 drilling resumed.
1105 grouting well.
1120 - hard rain, going to lunch, got stuck (water truck)

Well # MW-0037 (Screen 5'-15') CS pulled out after 2 attempts.

1235 moving drill rig (re-positioning) for MW-0037
1240 drilling commenced
1300 @ depth, pouring 20/30 sand around screen using inverted road cone, hydrating sand
1310 grouting well.
1315 well installation complete.



Scale: 1 square = lunch GPI 1235-1215 TT 1235-1225 (SR)

HMPN-AS0118 Actual Screen 40'-42' sump to 43'

1330 mobilizing to area west of G Avenue
1350 setting up @ AS0118, incl. putting development water into FRAC tank, collecting supplies @ box truck area.
1420 back to AS0118 w/ water truck.
1435 Drilling commencing.
1440 more rain, but warmer.
1445 still drilling (after brief rain break - pouring)
1525 sample collected, incomplete sample, so called CS to see what # 106 and # 127 looked like - also compared to my notes (SR). Decided to set screen at 40'-42' since lower - hydraulic conductivity soils were seen here at shallower depths @ 41' DL said 40'-45' sample captured, but 45'-50' sample fell out, probably a dense clayey soil. No clay was found at depth for the recovered soil, so no trace/indication of clay deeper. 5/10 sample recovered. 45'-50' assumed clayey
1540 proceeded to install well
PID Readings: @40' 0.2 41' 0.0 42' 0.0 45' 1.3 (in ppm) 44' 2.7 46' 0.0

Soil Sample Description: AS0118

* ~40'-40.25' Gray clay lens, some vfg sand, some silt, trace to little cg to mg shell fragments
~40.25-42.0' SAND - gray, vfg to mg (mg. to vfg), some silt and trace clay, trace to little (grain.) vcg to mg shell fragments
~42.0-43.5' same with more clay (some clay instead of trace), a large conch shell piece with trace to little (grain.) vfg to mg shell fragments (and random large) ~43.5-45.0 Gray SHELL and mg to vfg sand, trace silt.
1555 Developing well 45'-50' NO RECOVERY
1630 GPI left site, TT stayed to talk w/ Mike Deliz til 1700,
* Note: these depths are approximate due to incomplete sample. may have shifted.

Scale: 1 square = _____

Rite in the Rain

Project # 112G08982

Crew: Sue Rogers (SR) T+ Chuck Sorden (CS) T+
Dave Longino (DL) GPI Jared Link (JL) GPI
Gamma Rivera (GR) & Thomas Watson (TW)
Mickey Riher (MR) ↓

other: 52°F, Raining

0700 /

Location: HMPN - AS0152
(near 197 & 141)

2" AS Well
Target: 43-45'
Actual Screen:
42'-44'
sump to 45'

0700-0750 Rain delay
0750 mobilizing to AS0152
0810 ~~Sump~~ drilling commencing
Soil sample collected
incomplete sample, shifting deeper.
confining layer estimated at 42.2,
so setting screen at 42'-44', sump
to 45'. 7/10 recovery
PID Readings: 0.0 ppm at all 1-ft
intervals (40'-47')
0830 well installation commencing.
0855 well development
0930 well development complete.
~1000 ~~Location~~: well installation comple

Soil Sample Description - AS0152

40-40.5 clay slug
40.5-42.0 Greenish gray SAND - vfg, trace to little silt, some clay, trace to little shell (vcg to mg, some tiny & intact @) 42'-44' SAND - vfg to mg greenish gray and vcg to mg shell, trace silt clay @ 44.2' (and clay)

Location: HMPN - AS0205 (by G-Avenue)

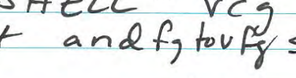
215 mobilization to HMPN-AS0
230 drilling commencing
(see next page)

Actual Screen:
39.5-41.5
sump to 42.5

~~AS0152 Soils - cont. 40.0-40.2 transition, same and clay~~
~~40.2~~-47.0 Bluish gray CLAY; little vfg sand, trace vcg to mg shell, increasing with depth (to "some")

Scale: 1 square =

AS0152 Soils - cont.
Note: estimated sample 40'-47'. The clay encountered at ~44.2' til duration of sample is very dense and malleable.
Also noted: larger intact shells in ~~SHELL~~ shell, SAND and vcg to mg layer shells seen, intact


Drawn to scale

Location HMPN - AS0205 - cont.

(by G-Avenue) & Actual Screen: 39.5-41.5
close to wooden pole w/ sump to 42.5
stabilization wire
1105 Soil samples collected.
confining layer at 41.5 clearly defined.
10/10 sample, compared to nearby AS0173 and e.c. depths comparable - AS0173 Δ.1' elevation - lower so that screen was set 1-ft. shallower.
PID Readings: 0.0 ppm at all 1-ft. intervals (40'-50')
1110 GPI mechanic working on rig
1135 proceeded to set well
1140 Rain delay → 1255 still pouring → 1315 GPI back

Lunch:
(left for lunch @ ~1245
T+ (SR) 1225
CS stayed onsite.

Soil Sample Description - AS0205

40.0'-41.5' Gray SHELL - vcg to mg, some larger intact and fg to vfg sand

41.5'-47.5' Gray CLAY, little vfg sand, ~~little~~ to trace to little vcg to mg shell fragments. A dense clay.
47.5'-50.0' Bluish Gray SAND and clay trace to none vcg to mg shell fragments

1400 well development complete.
1405 grouting well.

Scale: 1 square =

Rite in the Rain

Location: HMPN-AS0213

0745 scoping out area to mobilize to eastern area across ditch, laying down 5 mud matts.
0855 Bobcat in position with additional mud matts (2 more needed)
1110 steady rain, GPI working with rain gear
1430 attempting descent with drill rig into ditch to get to location; would not mobilize; stuck in mud, so Bobcat pulled it out with chains. (pictures taken)
1545 deciding how to proceed, possibly an angle well.
1600 CS called Pittsburgh - Mark Jonnet - for information on angle wells for this area. Decision made that this is a viable alternative, so proceeding with an angle well at this location. JL's rig capable of angle wells, so DL's rig is concentrating on grouting wells and general site clean-up/completion.

1730 Left site.

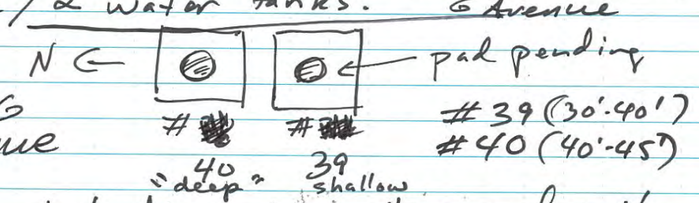
Weather: Cloudy, light rain 64°F

onsite T+ 0710 (SR pulled over for vehicle inspection @ guard gate)
GPI

Personnel:
Sue Rogers (SR) — Chuck Surden (CS)
Dave Longino (DL) — Jared Link (JL)
Gamma Rivera (GR) — Mickey Ritter (MR)
Thomas Watson (TW)

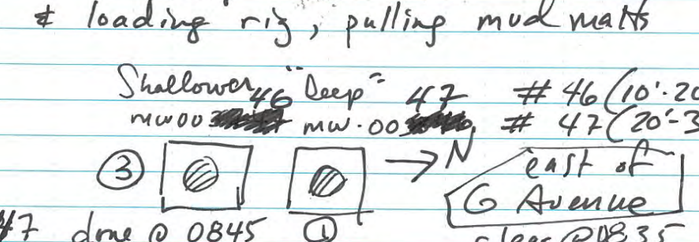
Today is a no-dig day for the remaining angle wells, so we are concentrating on monitoring well pad construction, well development, and general site restoration.

Well Development:
0730 HMPN-
~~0735~~ start @ MW-0037 and HMPN-MW0038
2 pumps going / 2 water tanks. G Avenue



stop: 0800.
West of G Avenue

DL & GR - cleaning & loading rig, pulling mud matts out of culvert.



Well Development:
start:
① 0815 HMPN-MW0047 done @ 0845
② 0820 HMPN-MW0038 done @ 0850
③ 0845 HMPN-MW0047 done @ 0915
④ 0850 HMPN-MW0037 done @ 0920

@ 0915 pads for #46 & 47
@ 0925 pads for #37 & 38 (MW) & above-ground steel box

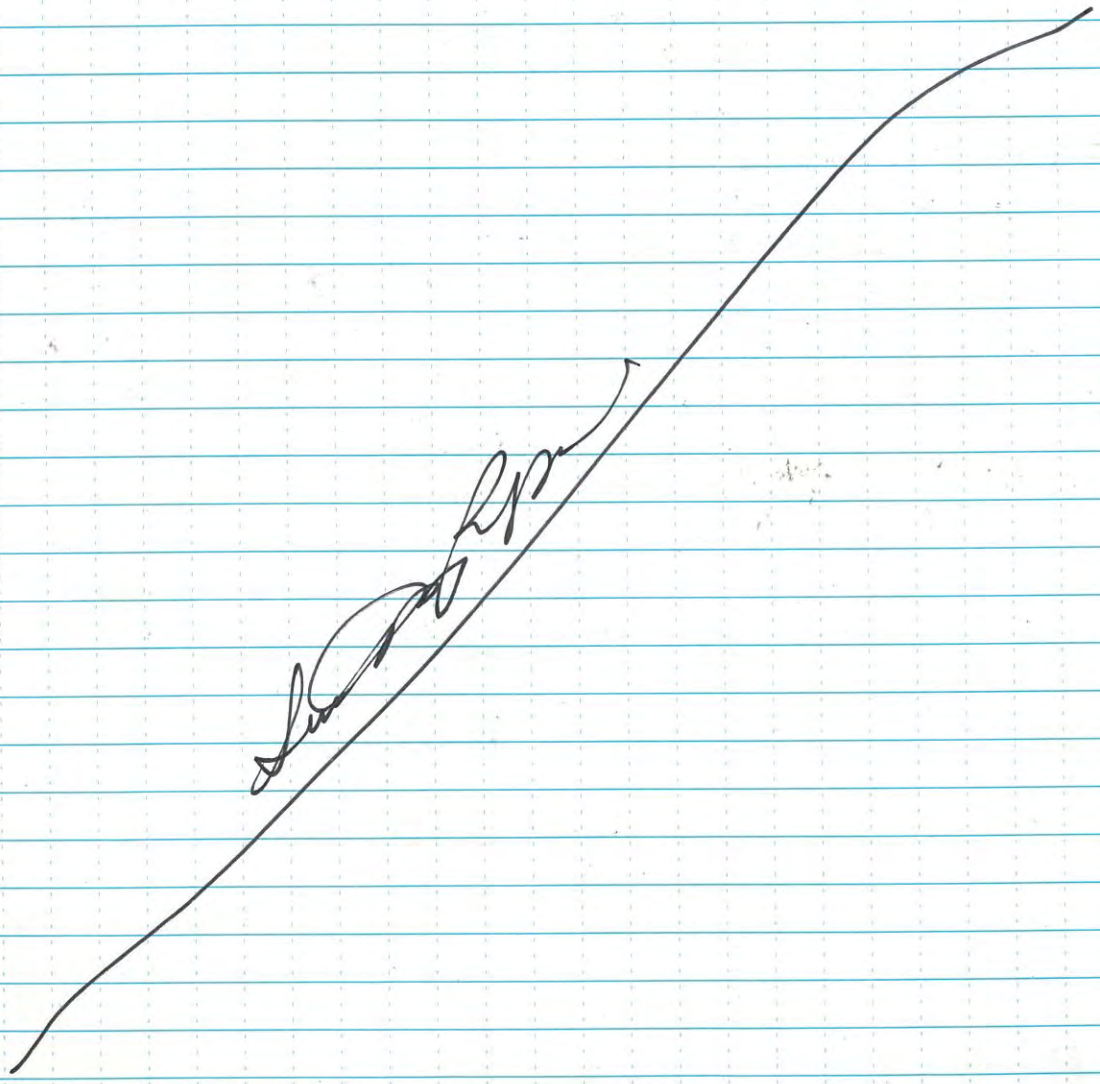
Rite in the Rain

The drill crews collected the soil sample for transfer to roll-off container. Also, equipment was moved to the next project, Paint and Oil Locker / Southern Treatment Area.

Well development water was placed in the "FRAC" tank pending Sampling.

Debris was collected by GPF and TT and wells were checked by TT to assure proper labelling (AS well #).

1200 TT and GPF left site.



POL STA &
HMF North
(HMPN)

Jan 27, 2020 (Monday)

Personnel: Chuck Sorden (CS) Tt
Sue Rogers (SR) Tt
Dave Longino (DL)
Jared Link (JL)
Jose Valentine (JV)

Weather: Cool, cloudy 55° F.

SR Arrived @ POL STA* @ 0840, launch of SpaceX Starlink cancelled due to weather, so we drove to HMF North to install the remaining wells near the utilities, eastern shoulder of 6. Avenue.

@ ~ 1000 GPI and Tetra Tech drove to HMFN CS logged the soil borings @ AS0193. SR walked the site making sure all the AS wells are labelled, also picking up debris.

Tt. onsite mobilizing for AS well trenching and system connection (D. Forester, C. Neumann, W. Crisafulli, and K. Hoard).
Drill rig down. no vertical or angle wells possible, so we mobilized to POL STA and CS supervised the installation of POL ASW 145. CS logged soil samples, SR went back to HMF North to complete well survey for completion**. Note: 2nd drill rig @ POL STA.

SR Left site (HMFN) @ 1730.

* Paint and Oil Locker Southern Treatment Area.
** counting wells (SR)

Scale: 1 square = _____

Rite in the Rain

MF North
HMPN)

Tues, Jan 28, 2020

Personnel: Dave Longmo (DL) GPI
Jared Link (JL) GPI
Jose Valentine (JV) GPI
e CS 0700 Sue Rogers (SR) T+
SR 0710 Chuck Sardam (CS) T+
GPI 0700

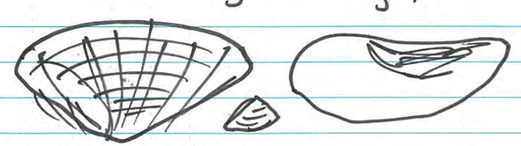
Weather: cool, clear, windy, 57°F.

HMPN-AS0171 2" AS Well

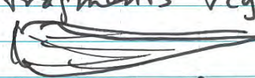
0720 hand augering encountered concrete, so we moved 2' south 1' west. 2nd time digging okay. to 5' b/s.
0815 pulled samples - confining unit starts @ 43.5 a shelly clay, so screen @ 41.5 - 43.5. Actual Screen: 41.5 - 43.5 sump to 44.5
0820 proceeding to set well.
PID Readings: 0.0 ppm at all depths (40'-50', 1-ft. intervals)

Soil Samples - Description - AS0171

40'-41' Greenish gray SAND - mg to vfg trace to little c.g. to m.g. shell fragments
41'-43.5' Gray SHELL - vcg to mg, some large whole → ↑ most intact small



43.5' - 44' same and clay
44' - 46' Gray CLAY; some fg to vfg sand, little to some shell fragments vcg to mg, some large (random few) → sharp pieces trace silt possible



46 - 49.5' Gray SAND - fg to vfg and clay with clay lenses, little to trace shell fragments - vcg to mg decreasing w/ depth. 49.5 - 50.0' CLAY and fg to vfg Sand. tr. to none shell.

: 1 square = _____

HMPN-AS0171 - cont.

0900 Fixing the Bobcat - it jumped the tracks.
0940 well development completed, ~~well grouted~~.
0955 well grouted.

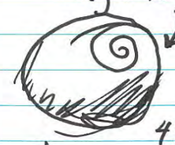
HMPN-AS0192 2" AS well, vertical

Actual Screen: ~~41 - 43'~~ 40' - 42'
sump to ~~44~~ 43'

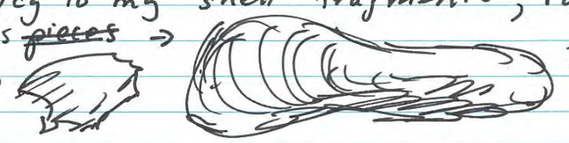
1015 mobilization to AS0192
1025 post hole to 5ft. b/s, checked on location of stake if needing to be close to utility paint line, consulted w/ CS - he recommended moving it to the west, away from the line ~ 6", so > 2' from marked utility. re-dug w/ post-hole to 5 ft b/s.
1040 proceeding with drilling.
1045 hit something hard @ 8'-10', so pulled up casing, moved drill rig ~~to~~ 1.5' to the west and proceeded to post-hole to 5' b/s.
1055 Drilling commenced, nothing hit

Soil Borings - Description - AS0192

40'-42' Gray SHELL - (gran.) vcg to mg with some mg. to v.f.g. sand. Scattered large, intact shells. → most small intact clam shells.



42'-43' same with some clay.
43-45.5 Gray CLAY; little vfg sand, trace to little (gran.) vcg to mg shell fragments, random very large shells ~~pieces~~ → and pieces →



45.5 - 50 Gray SAND - fg to vfg, some clay, little to none shell fragments - (gran.) vcg to mg, decreasing with depth.

Lunch GPI 1230-1330 T+ Lunch 1230-1300
Also went to badsing.

Scale: 1 square = _____

Rite in the Rain

Note: badging issues with Malcolm / Gamma so delay in personnel change. Jose Valentine quit due to physical exertion in driller's helper duties, so delay due to that.

1400 post-hole digging @ ASO-190. to 5ft. b/s.

HMFN-ASO-190 vertical 2" Shoulder of G-Avenue, eastern side.

415 mobilization to ASO190.
455 soil samples collected.
500 well installation initiated Actual Screen: 40'-42'
to total depth 43', screen from 40'-42'. sump to: 43'
PID Readings: 0.0 ppm at all 1-ft intervals over 40'-50' Soil samples (2 cores)
515 Developing well.

Soil Borings - Description - ASO190

40'-40.5' Gray SAND - mg to fg, trace to little vcg to mg shell frasments, some small, intact
40.5-42' Gray SHELL - vcg to mg, some larger pieces and intact small clams, some mg to fg sand, trace silt
42'-43.5' Same with some clay, 4" across intact clam shell found (NTS)
43.5'-46' Gray CLAY - some fg to vfg sand, little to some shell, large pieces present (conch shell piece ~ 2" across
46'-49.5 Gray SAND - fg to vfg, some clay, trace vcg to mg shell fragments & small intact clam shells to no shell at depth (~ 48:49.5')
49.5'-50.0' Gray CLAY, some fg to vfg sand, no shell.

1530 Leaking hydraulic fluid from hose, becoming worse, bucket used to contain,

(cont.)
but will harm rig if allowed to continue, so shut down. Unable to mobilize to next (final) AS well which is ASO213, an angle, 1", 77°, 45° total depth.
CS & GPI

1600 Drove to POL STA to locate fitting for fixing the leak. No available matching part, so GPI and TT came back to HMFN to shut down for evening. Claude the mechanic is scheduled to visit HMFN tomorrow to fix the leaking rig.

1615 Ryan O'Meara of NASA visited the site; talking with CJ Neumann, and SR walked over to field any questions about the idle drill rig.

1715 GPI & TT left site.

Rite in the Rain

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0001
DATE: 12/2/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		10/10	20-30						0.0			
	20.5												
	21.0									0.0			
	21.5												
	22.0									0.0			
	22.5												
	23.0									0.0			
	23.5												
	24.0									0.0			
	24.5												
	25.0									0.0			
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									0.0			
	28.5												
	29.0									0.0			
	29.5												
	30.0				Soft	Gray	SAND - FINE TO VERY FINE; trace to little shell and silt	SP		0.0			
	30.5						**BORING TERMINATED 30'**						
	31.0												
	31.5												
	32.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0001

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0055
DATE: 12/2/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40-42.75	Soft	Gray	SHELL; little sand - very fine and silt; trace clay	GP/GM					
	43.0									0.0			
	43.5												
	44.0									0.0			
	44.5			42.75-44.5	Firm	Gray	CLAY; little sand - very fine and silt; trace shell	CL					
	45.0									0.0			
	45.5			44.5-45.5	Firm	Gray	SAND - FINE TO VERY FINE; little to some shell; trace to little silt; trace clay	SP/SM					
	46.0									0.0			
	46.5			45.5-46.5	Firm	Gray	SAND - FINE TO VERY FINE; little shell and silt; trace clay	SP/SM					
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			46.5-50	Firm	Gray	SAND -- VERY FINE; little to some silt; trace to little clay	SM/SC		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0055

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0062
DATE: 12/3/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		5/10										
	40.5												
	41.0												
	41.5												
	42.0												
	42.5												
	43.0												
	43.5												
	44.0						Only 5' of core was recovered from 10' stroke. Unknown where 5' section was collected from. Possible from 40-45 and bottom 5' fell out of pipe. Sample had 3' of SAND - FINE TO VERY FINE; trace to little silt; trace shell. Sample had 2' of SHELL; little sand - fine to very fine and silt						
	44.5												
	45.0												
	45.5												
	46.0												
	46.5												
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0062

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0061
DATE: 12/3/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40-42.5	Soft	Gray	SHELL; little to some sand - fine to very fine and silt; trace clay	GP/ GM					
	43.0			42.5-43.0	Firm	Gray	SHELL; little to some sand - fine to very fine, silt, and clay	GM		0.0			
	43.5			43.0-43.5	Soft	Gray	SHELL; trace to little sand - fine to very fine	GP					
	44.0									0.0			
	44.5												
	45.0		10/10	43.5-45.0	Firm	Gray	CLAY; trace to little sand - fine to very fine and silt; trace shell	CL		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			45.0-50	Firm	Gray	SAND - FINE TO VERY FINE; little to some silt; little clay; trace shell	SM/ SC		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0061

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0068
DATE: 12/3/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		3.5/10							0.0			
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - MEDIUM TO FINE; trace to little silt	SP		0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0			41.0-43.0	Soft	Gray	SHELL; little to some sand - fine to very fine and silt; trace clay	GP					
	43.5			43.0-43.5	Soft	Gray	SHELL; little to some sand - very fine, silt, and clay	GP/ GM					
	44.0						**Poor recovery, lithology depths estimated**						
	44.5												
	45.0												
	45.5												
	46.0												
	46.5												
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0061

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0076
DATE: 12/3/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - FINE TO VERY FINE; some shell; little to some silt	SP/ SM		0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0			41.0-43.0	Soft	Gray	SHELL; little sand - fine to very fine and silt	GP		0.0			
	43.5												
	44.0									0.0			
	44.5												
	45.0		3.5/10	43.0-45.0	Firm	Gray/ Green	CLAY; little to some silt; little sand - very fine; trace to little shell	CL		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			45.0-50	Soft	Gray	SAND - VERY FINE; little to some silt; little clay; trace shell	ML		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0076

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0084
DATE: 12/4/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		3.5/10	40-42.75						0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5				Soft	Gray	SHELL; little sand - fine to very fine and silt	GP					
	43.0			42.75-43.5						0.0			
	43.5				Firm	Gray/ Green	CLAY; little to some silt; trace sand - very fine	CL					
	44.0									0.0			
	44.5												
	45.0									0.0			
	45.5												
	46.0			43.5-46.0	Soft	Gray	SAND - VERY FINE; little to some silt; little clay and shell	SM/ SC		0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			46.0-50	Soft	Gray	SAND - VERY FINE; little to some silt; little clay; trace shell	SM/ SC	clays thinly to very thinly bedded and throughout	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0084

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0085
DATE: 12/4/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10										
	40.5												
	41.0												
	41.5												
	42.0						Poor recovery/ convoluted core. 3' of shell present; 1.5' of sand - fine to very fine; little silt; 0.5' of shelly clay; 5' of sand - medium to very fine and coarse grained shell fragments						
	42.5								0 PID on all screenings				
	43.0												
	43.5												
	44.0												
	44.5												
	45.0												
	45.5												
	46.0												
	46.5												
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0085

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0092
DATE: 12/4/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0			40-42.0	Soft	Gray	SAND - MEDIUM TO FINE; little coarse grained shell fragments	SW/ SP		0.0			
	42.5												
	43.0									0.0			
	43.5			42.0-43.75	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GW/ GP					
	44.0									0.0			
	44.5			43.75-44.5	Firm	Gray/ Green	CLAY; trace to little sand - fine to very fine and silt	CL	moderately dense				
	45.0			44.5-45.0	Firm	Gray/ Green	CLAY; little sand - fine to very fine; trace to little silt; trace shell	CL		0.0			
	45.5												
	46.0									0.0			
	46.5			45.0-46.5	Soft	Gray	SAND - FINE TO VERY FINE; little silt, clay and shell	SC/ SM					
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			46.5-50	Firm	Gray	SAND - FINE TO VERY FINE; little to some silt and clay	SM/ SC	clay thinly bedded;	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0092

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0103
DATE: 12/4/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0									0.0			
	43.5			40-43.5	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP					
	44.0									0.0			
	44.5												
	45.0		10/10	43.5-45.0	Firm	Gray/ Green	CLAY; little sand - very fine and silt; trace shell	CL		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			45.0-50	Soft	Gray/ Green	SAND - VERY FINE; little to some silt; trace to little clay	SM/ SC	silty clayey beds at 58' and 59'-60'	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0103

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0138
DATE: 12/6/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40-42.5	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP					
	43.0			42.5-43.0	Firm	Gray	SILT AND CLAY; trace to little sand - very fine and shell	ML		0.0			
	43.5												
	44.0			43.0-44.0	Firm	Gray/ Green	CLAY; little to some silt; trace sand - very fine	CL		0.0			
	44.5												
	45.0		10/10							0.0			
	45.5			44.0-45.5	Soft	Gray	SAND - VERY FINE; little to some silt and clay; trace to little shell	ML					
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			45.5-50	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little clay		silty clay beds at 58' and 59'-60'	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0138

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0050
DATE: 12/11/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		4/10	40-42.5						0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5				Soft	Gray	SAND - FINE TO VERY FINE; trace to little shell; trace silt	SP	silty from 40'-41'				
	43.0									0.0			
	43.5			42.5-44.0									
	44.0				Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		0.0			
	44.5						**POOR RECOVERY; LITHOLOGY DEPTHS ESTIMATED**						
	45.0									0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0									0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0050

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0056
DATE: 12/11/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5			40-40.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt and shell	SP					
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0									0.0			
	43.5			40.5-43.75	Soft	Gray	SHELL; little sand - fine to very fine; trace to little silt and clay	GP					
	44.0			43.75-44.0	Soft	Gray	SHELL, SAND - VERY FINE, SILT, AND CLAY	GP/ GM		0.0			
	44.5												
	45.0		10/10	44.0-45.0	Firm	Gray/ Green	CLAY; little to some sand - very fine and silt; trace to little shell	CL		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			45.0-50	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little clay	ML		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0056

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT
BORING No.: AS0018
DATE: 12/11/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0		10/10							0.0			
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									0.0			
	28.5												
	29.0									0.0			
	29.5												
	30.0									0.0			
	30.5												
	31.0									0.0			
	31.5												
	32.0									0.0			
	32.5			25.0-32.5	Soft	Gray	SAND - FINE TO VERY FINE; trace silt and shell	SP					
	33.0			32.5-33.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace clay laminiae at 32.5 and	SP		0.0			
	33.5												
	34.0									0.0			
	34.5												
	35.0			33.0-35.0	Soft	Gray	SAND - FINE TO VERY FINE; little shell; trace to little silt; trace clay	SP/SM		0.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0018

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0093
DATE: 12/12/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0									0.0			
	41.5			40-41.5	Soft	Gray	SAND - MEDIUM TO FINE; trace to little silt; trace shell	SP					
	42.0			41.5-42.0	Soft	Gray	SAND - FINE TO VERY FINE; little silt; trace to little clay	SP/SM		0.7			
	42.5												
	43.0									1.3			
	43.5			42.0-43.5	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt/ trace clay	GP					
	44.0			43.5-44.0	Firm	Gray	SAND - MEDIUM TO FINE AND CLAY	SC		0.2			
	44.5												
	45.0			44.0-45.0	Firm	Gray/ Green	CLAY; little sand - fine to very fine and silt	CL		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0			45.0-47.0	Soft	Gray	SAND - VERY FINE; little silt, clay, and shell	SM		0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			47.0-50	Soft	Gray	SAND - VERY FINE; little to some silt, and clay; trace shell	SM/SC		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0093

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0104
DATE: 12/12/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40-42.75	Soft	Gray	SHELL; little to some sand - fine to very fine, silt, and clay	GM/GC					
	43.0			42.75-43.0	Soft	Gray	SAND - FINE TO VERY FINE AND CLAY; little shell	SC		0.0			
	43.5												
	44.0									0.0			
	44.5			43.0-44.5	Firm/Stiff	Gray Green	CLAY; little to some silt; trace to little sand - very fine	CL	moderately dense				
	45.0									0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0			44.5-47.0	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little shell and clay	SM		0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			47.0-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	SM/SC		0.0			
	49.5												
	50.0			49.0-50	Stiff	Gray/ Green	CLAY; trace to little silt	CL		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0104

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0116
DATE: 12/12/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP		0.0			
	41.5												
	42.0									0.0			
	42.5			41.0-42.5	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP					
	43.0			42.5-43.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt, clay, and shell	SP/ SM		0.0			
	43.5												
	44.0			43.0-44.0	Firm	Gray/ Green	CLAY; little to some silt; trace sand - fine to very fine and shell	CL		0.0			
	44.5												
	45.0									0.0			
	45.5												
	46.0			44.0-46.0	Soft	Gray	SAND - VERY FINE; trace to little shell and silt; trace clay	ML		0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0			46.0-48.0	Soft	Gray	SAND - VERY FINE; little to some silt	ML		0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			48.0-50	Firm	Gray/ Green	CLAY; little to some silt; trace to little sand - very fine; trace shell	CL		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0116

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT
BORING No.: AS0024
DATE: 12/13/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0		10/10	25.0-35.0						0.0			
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									0.0			
	28.5												
	29.0									0.0			
	29.5												
	30.0									0.0			
	30.5												
	31.0									0.0			
	31.5												
	32.0									0.0			
	32.5												
	33.0									0.0			
	33.5												
	34.0									0.0			
	34.5												
	35.0				Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt and shell	SP		0.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0018

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0139
DATE: 12/16/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5			40-40.5	Soft	Gray	SAND - FINE TO VERY FINE; trace silt, shell, and clay	SP					
	41.0									0.0			
	41.5			40.5-42.0									
	42.0				Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		0.0			
	42.5												
	43.0									0.0			
	43.5												
	44.0			42.0-44.0	Firm	Gray/ Green	CLAY; little to some sand - fine to very fine; trace shell	CL		0.0			
	44.5												
	45.0			44.0-45.0	Firm	Gray/ Green	CLAY AND SAND - FINE TO VERY FINE; little shell	CL		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0			45.0-47.0	Soft	Gray	SAND -VERY FINE; little to some silt; little clay and shell	ML		0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			47.0-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML		0.0			
	49.5												
	50.0			49.0-50	Firm	Gray/ Green	CLAY; little silt	CL	dense and dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0139

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0126
DATE: 12/16/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5			40-40.5	Soft	Gray	SAND - FINE TO VERY FINE; trace silt, shell, and clay	SP					
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40.5-42.5	Soft	Gray	SHELL; trace to little sand - fine to very fine, silt, and clay	GP					
	43.0									0.0			
	43.5			42.5-43.5	Firm	Gray/ Green	CLAY; little to some silt; tracer to little sand - fine to very fine	CL					
	44.0									0.0			
	44.5												
	45.0									0.0			
	45.5												
	46.0			43.5-46.0	Firm	Gray/ Green	SAND - FINE TO VERY FINE, SILT, AND CLAY; trace to little shell	SM/ SC		0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			46.0-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML		0.0			
	49.5												
	50.0			49.0-50	Firm	Gray/ Green	CLAY; little sand - very fine and silt	CL	dense and dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0126

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0202
DATE: 12/16/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0			40-42.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt; trace clay	GP		0.0			
	42.5			42.0-42.5	Soft	Gray	SAND - FINE TO VERY FINE, SILT, CLAY, AND SHELL	SM/SC					
	43.0									0.0			
	43.5			42.5-43.5	Firm	Gray/ Green	CLAY; trace to little sand - very fine and silt	CL	moderately dense				
	44.0									0.0			
	44.5												
	45.0									0.0			
	45.5												
	46.0			43.5-46.0	Soft	Gray	SAND - FINE TO VERY FINE, SILT, AND CLAY; trace to little shell	SM/SC		0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			46.0-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	SM/SC		0.0			
	49.5												
	50.0			49.0-50	Firm	Gray/ Green	CLAY; little sand - very fine and silt	CL	dense and dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0202

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0198
DATE: 12/17/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0									0.0			
	43.5												
	44.0			40-44.0	Soft	Gray	SAND - MEDIUM TO FINE; trace to little shell and silt	SP		0.0			
	44.5												
	45.0		5/10	44.0-45.0	Soft	Gray	SHELL; little to some sand - fine to very fine; trace to little silt	GP		0.0			
	45.5						**NO RECOVERY 45'-50'**						
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0									0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0198

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0199
DATE: 12/17/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0			40-42.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		0.0			
	42.5			40-42.5	Soft	Gray	SAND - FINE TO VERY FINE, SILT, CLAY, AND SHELL	SM/ SC					
	43.0									0.0			
	43.5			42.5-43.5	Soft	Gray/ Green	CLAY; little sand - very fine and silt	CL	moderately dense				
	44.0									0.0			
	44.5												
	45.0									0.0			
	45.5			43.5-45.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt and clay; trace to little shell	SM/ SC					
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			45.5-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML	clay beds at 47 and 48	0.0			
	49.5			49.0-49.5	Stiff	Gray/ Green	CLAY	CL	dense and dry				
	50.0			49.5-50	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0199

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0045
DATE: 12/19/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		7/10	40-44.0	Soft	Gray	SHELL; little sand - fine to very fine and silt	GP		0.0			
	40.5												
	41.0			44.0-45.0	Firm	Gray/ Green	CLAY; trace to little sand - very fine and silt	CL		0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0									0.0			
	43.5												
	44.0									0.0			
	44.5												
	45.0									0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0			45.0-47.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML		0.0			
	47.5						**Poor Recovery. Lithologic depths estimated**						
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0									0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0045

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0049
DATE: 12/19/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40-42.5	Soft	Gray	SHELL; trace to little sand - fine to very fine	GP					
	43.0			42.5-43.0	Soft	Gray	SAND - FINE TO VERY FINE; little shell, silt, and clay	SP/SM		0.0			
	43.5												
	44.0			43.0-44.0	Firm	Gray/ Green	CLAY; trace to little sand - fine to very fine and silt	CL		0.0			
	44.5												
	45.0		10/10	44.0-45.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt and clay; trace to little shell	SM/SC		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			45.0-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML		0.0			
	49.5												
	50.0			49.0-50	Stiff	Gray/ Green	CLAY; trace to little silt	CL	dense and dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0049

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0054
DATE: 12/19/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		9/10							0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5			40-42.5	Soft	Gray	SHELL; trace to little sand - fine to very fine	GP					
	43.0			42.5-43.0	Soft	Gray	SAND - FINE TO VERY FINE; little shell, silt, and clay	SP/SM		0.0			
	43.5												
	44.0			43.0-44.0	Firm	Gray/ Green	CLAY; trace to little sand - fine to very fine and silt	CL		0.0			
	44.5												
	45.0			44.0-45.0	Soft	Gray	SHELL; little to some sand - fine to very fine and silt	GP		0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			45.0-49.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay	ML		0.0			
	49.5												
	50.0			49.0-50	Stiff	Gray/ Green	CLAY; trace to little silt	CL	dense and dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0054

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0059
DATE: 12/19/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									22.0			
	40.5												
	41.0			40-41.0	Soft	Gray	SHELL; trace to little sand - fine to very fine	GP		33.0			
	41.5			41.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; little silt, clay, and shell	SP/SM					
	42.0			41.5-42.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt and clay	SM		249.0			
	42.5												
	43.0			42.0-43.0	Firm	Gray/ Green	CLAY; trace to little sand - fine to very fine and silt; trace shell	CL		335.0			
	43.5												
	44.0									437.0			
	44.5			43.0-44.5	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little clay; trace shell	ML					
	45.0		10/10							32.0			
	45.5												
	46.0									3.2			
	46.5												
	47.0									1.4			
	47.5												
	48.0			44.5-48.0	Soft	Gray	SAND - VERY FINE; little to some silt; trace shell and clay	ML		0.7			
	48.5												
	49.0									0.1			
	49.5												
	50.0			48.0-50	Stiff	Gray/ Green	CLAY; trace sand - very fine and silt	CL		0.1			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0059

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0060
DATE: 12/19/2019
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		6/10							0.0			
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some shell; trace to little silt	SP		0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0			41.0-43.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GW/GP		0.0			
	43.5			43.0-43.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt and clay; trace shell	SM					
	44.0			43.5-44.0	Firm	Gray/ Green	CLAY; little to some silt; trace to little sand - fine to very fine	CL		0.0			
	44.5												
	45.0									0.0			
	45.5												
	46.0			44.0-46.0	Firm	Gray/ Green	CLAY; trace to little silt and shell; trace sand - very fine	CL		0.0			
	46.5						**Poor Recovery. Lithologic depths estimated**						
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0060

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT
BORING No.: AS0020
DATE: 1/6/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0		10/10							0.0			
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									0.0			
	28.5												
	29.0									0.0			
	29.5												
	30.0									0.0			
	30.5												
	31.0									0.0			
	31.5												
	32.0									0.0			
	32.5												
	33.0									0.0			
	33.5						33.5'-33.75' - SILT; trace clay and sand - fine to very fine	ML					
	34.0									0.0			
	34.5			25.0-34.75	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP					
	35.0			34.75-35.0	Soft	Gray	SAND - FINE TO VERY FINE; little silt; trace clay	SM		0.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0020

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT
BORING No.: AS0066
DATE: 1/6/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0			40-42.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some coarse to v. coarse grained shell	SW/ SP		0.0			
	42.5												
	43.0									0.0			
	43.5												
	44.0									0.0			
	44.5												
	45.0		10/10	42.0-45.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP		0.0			
	45.5												
	46.0									0.0			
	46.5			45.0-46.5	Soft	Gray	SHELL; little to some sand - fine to very fine and silt	GP					
	47.0			46.5-47.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some shell and silt; trace to little clay	SM		0.0			
	47.5			47.0-47.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt; little clay; trace to little shell	SM/ SC					
	48.0									0.0			
	48.5			47.5-48.5	Firm	Gray/ Green	CLAY; little to some silt; trace sand - very fine	CL					
	49.0									0.0			
	49.5												
	50.0			48.5-50	Soft	Gray	SAND - VERY FINE AND SILT; little to some clay; little shell	ML/ CL		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0066

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0170
DATE: 1/7/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									9.6			
	40.5			40-40.5	Soft	Gray	SAND - MEDIUM TO FINE; little to some shell; trace to little silt	SP					
	41.0									8.4			
	41.5												
	42.0									27.1			
	42.5												
	43.0			40.5-43.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		8.9			
	43.5			43.0-43.5	Firm	Gray/ Green	CLAY; little sand - very fine and silt; trace shell	CL					
	44.0			43/5-44.0	Soft	Gray	SAND - VERY FINE; little to some silt and clay; little shell	ML/ CL		0.5			
	44.5												
	45.0		10/10							0.4			
	45.5			44.0-45.5	Firm	Gray/ Green	CLAY; trace to little sand - very fine and silt; trace shell	CL	moderately dense				
	46.0									0.0			
	46.5			45.5-46.5	Soft	Gray	SAND - VERY FINE; little to some silt; little shell and clay	ML					
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5			46.5-49.5	Soft	Gray	SAND - VERY FINE; little to some silt; little clay; trace shell	ML					
	50.0			49.5-50	Stiff	Gray/ Green	CLAY; trace to little silt	CL	dense and dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0170

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT
BORING No.: AS0174
DATE: 1/8/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									9.5			
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse grain sized shell fragments	SW/ SP		16.3			
	41.5												
	42.0									3.3			
	42.5												
	43.0									5.1			
	43.5			41.0-43.5	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP					
	44.0			43.5-44.0	Soft	Gray	SAND - FINE TO VERY FINE; little shell; trace to little silt	GP		1.4			
	44.5												
	45.0		10/10	44.0-45.0	Firm	Gray/ Green	CLAY; little sand - fine to very fine, silt, and shell	CL		0.4			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5			45.0-47.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt; trace to little clay	SM					
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			47.5-50	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt; trace to little clay	SM/ SC		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0174

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0204
DATE: 1/8/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		7/10	40-42.5						0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5				Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP					
	43.0									0.0			
	43.5												
	44.0									0.0			
	44.5												
	45.0			42.5-45.0	Soft	Gray	SHELL; little to some sand - fine to very fine; trace to little silt	GP		0.4			
	45.5												
	46.0			45.0-46.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt; little shell and clay	SM/ SC		0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			46.0-50	Firm	Gray/ Green	SAND - VERY FINE, SILT, AND CLAY; trace to little shell		interbedded clays at 46', 47.5' and 48	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0204

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0203
DATE: 1/9/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0												
	43.5						3' - SHELL; little sand - fine to very fine; trace to little silt recovered. Unknown lithologic depths						
	44.0												
	44.5						**Poor Recovery. 3' of 10' Recovered**						
	45.0		3/10										
	45.5												
	46.0												
	46.5												
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0203

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0071
DATE: 1/10/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		5/10	40-42.0						0.0			
	40.5												
	41.0									0.0			
	41.5												
	42.0				Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP		0.0			
	42.5			42.0-45.0									
	43.0									0.0			
	43.5												
	44.0									0.0			
	44.5												
	45.0				Soft	Gray	SHELL; little sand - fine to very fine and silt	GP		0.4			
	45.5						**5' of 10' Recovered. Lithologic Depths Estimated**						
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0									0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0071

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0079
DATE: 1/10/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									33.5			
	40.5												
	41.0									81.0			
	41.5												
	42.0			40-42.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP		106.0			
	42.5												
	43.0									50.0			
	43.5												
	44.0									24.0			
	44.5			42.0-44.5	Soft	Gray	SHELL; little sand - fine to very fine and silt	GP					
	45.0		7/10							6.2			
	45.5			44.5-45.5	Firm	Gray/ Green	CLAY; little to some silt; trace sand - very fine and shell	CL					
	46.0									4.0			
	46.5												
	47.0									1.0			
	47.5												
	48.0									0.7			
	48.5												
	49.0									0.0			
	49.5												
	50.0			45.5-50	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little shell and clay	ML	clay in beds and throughout	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0079

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0080
DATE: 1/10/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10							114.0			
	40.5												
	41.0									169.0			
	41.5												
	42.0									310.0			
	42.5			40-42.5	Soft	Gray	SAND - MEDIUM TO FINE; trace to little shell and silt	SP					
	43.0									234.0			
	43.5												
	44.0									499.0			
	44.5			42.5-44.5	Soft	Gray	SHELL; little sand - fine to very fine and silt	GP					
	45.0			44.5-45.0	Soft	Gray	SAND - FINE TO VERY FINE; little shell and silt; trace to little clay	SP/SM		15.3			
	45.5			45.0-45.5	Soft	Gray	SILT; little clay; trace sand - very fine	ML					
	46.0									12.0			
	46.5												
	47.0									14.0			
	47.5			45.5-47.5	Firm	Gray/ Green	CLAY; little to some silt; little sand - fine to very fine; trace shell	CL					
	48.0									7.5			
	48.5												
	49.0									1.0			
	49.5												
	50.0			47.5-50	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little clay and shell	ML		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0080

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0022
DATE: 1/13/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0.0			
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									2.0			
	28.5												
	29.0									4.0			
	29.5												
	30.0		10/10							10.0			
	30.5												
	31.0									12.0			
	31.5												
	32.0									29.0			
	32.5												
	33.0									31.0			
	33.5												
	34.0			25.0-34.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP		38.0			
	34.5								Silt/Clay beds at 34-34.2 and 34.8				
	35.0			34.0-35.0	Soft	Gray	SAND - FINE TO VERY FINE	SP		26.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0022

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0026
DATE: 1/14/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0		10/10										
	25.5												
	26.0									0.0			
	26.5												
	27.0									2.0			
	27.5												
	28.0									14.0			
	28.5												
	29.0									18.0			
	29.5												
	30.0									7.0			
	30.5												
	31.0									13.0			
	31.5												
	32.0									12.0			
	32.5												
	33.0									8.0			
	33.5			25.0-33.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt and shell	SP					
	34.0			33.5-34.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt	SP	Silt/clay bed 33.5-33.75	9.0			
	34.5												
	35.0			34.0-35.0	Soft	Gray	SAND - VERY FINE; trace to little silt; trace clay	ML	clay beds at 34' and 34.5	12.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0026

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0025
DATE: 1/14/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0												
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									0.0			
	28.5												
	29.0									1.0			
	29.5												
	30.0		10/10	25.0-30	Soft	Gray/ Brown	SAND - FINE TO VERY FINE; trace silt and shell	SP		1.0			
	30.5												
	31.0									1.0			
	31.5												
	32.0									4.0			
	32.5												
	33.0									2.0			
	33.5			30-33.5	Soft	Gray	SAND - FINE TO VERY FINE; little silt	SP/ SM	silt bed at 33'				
	34.0			33.5-34.0	Soft	Gray	SILT AND CLAY	ML		0.0			
	34.5			34.0-34.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP/ SM					
	35.0			34.5-35.0	Soft	Gray	SAND - FINE TO VERY FINE; little silt and clay; trace shell	SM/ SC		2.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0025

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0129
DATE: 1/10/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10										
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some coarse to v. coarse grained shell	SW/ SP		2.4			
	41.5												
	42.0									2.0			
	42.5												
	43.0									2.0			
	43.5			41.0-43.5	Soft	Gray	SHELL; little sand - fine to very fine and silt	GP					
	44.0									0.0			
	44.5			43.5-44.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt; little clay	SP/ SM					
	45.0									0.0			
	45.5			44.0-45.0	Firm	Gray/ Green	CLAY; trace to little sand - fine to very fine and silt	CL					
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5			45.0-49.5	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little shell	SP/ SM					
	50.0			49.5-50	Stiff	Gray/ Green	CLAY	CL	Dense and Dry	0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0129

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 LS

BORING No.: AS0127
DATE: 1/15/2020
GEOLOGIST: Chuck Sorden
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0												
	40.5												
	41.0									0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0			40-43.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		0.0			
	43.5												
	44.0									0.0			
	44.5			43.0-44.5	Firm	Gray/ Green	CLAY; little silt; trace sand - fine to very fine	CL					
	45.0		10/10							0.0			
	45.5												
	46.0									0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			44.5-50	Soft	Gray	SAND - VERY FINE; little to some silt; little clay; trace to little shell	ML/ CL		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0129

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 LS

BORING No.: AS0194
DATE: 1/15/2020
GEOLOGIST: Chuck Sorden
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10	40-41.5									
	40.5												
	41.0									0.0			
	41.5				Soft	Gray	SAND - MEDIUM TO VERY FINE; trace shell	SW/ SP					
	42.0									0.0			
	42.5												
	43.0									0.0			
	43.5												
	44.0									0.0			
	44.5			41.5-45.0									
	45.0				Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		0.0			
	45.5												
	46.0			45/0-46.0	Firm	Gray/ Green	CLAY; trace to little silt; trace sand - fine to very fine	CL		0.0			
	46.5												
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0									0.0			
	49.5												
	50.0			46.0-50	Soft	Gray	SAND - VERY FINE; little to some silt; trace to little shell and clay	SM		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0194

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0087
DATE: 1/20/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0												
	40.5												
	41.0									14.0			
	41.5												
	42.0									7.0			
	42.5												
	43.0			40-43.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt; trace shell	SP		110.0			
	43.5												
	44.0									34.0			
	44.5												
	45.0		5/10	43.0-45.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		7.0			
	45.5												
	46.0												
	46.5												
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No ____ Well I.D. #: AS0087

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 DT

BORING No.: AS0095
DATE: 1/20/2020
GEOLOGIST: Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		5.5/10	40-43.0									
	40.5												
	41.0									2.0			
	41.5												
	42.0									34.0			
	42.5												
	43.0				Soft	Gray	SAND - MEDIUM TO VERY FINE; trace to little silt and shell	SP		41.0			
	43.5												
	44.0									127.0			
	44.5												
	45.0									11.0			
	45.5			43.0-45.5	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP	clayey 45-45.5				
	46.0												
	46.5												
	47.0												
	47.5												
	48.0												
	48.5												
	49.0												
	49.5												
	50.0												
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0087

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 LS

BORING No.: AS0106
DATE: 1/20/2020
GEOLOGIST: Chuck Sorden
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0		10/10										
	40.5												
	41.0			40-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt and shell	SP		0.0			
	41.5												
	42.0									0.0			
	42.5												
	43.0			41.0-43.0	Soft	Gray	SHELL; trace to little sand - fine to very fine and silt	GP		0.0			
	43.5			43.0-43.75	Soft	Gray	SHELL; little to some sand - fine to very fine and clay	GC					
	44.0									0.0			
	44.5												
	45.0			43.75-45.0	Firm	Gray/ Green	CLAY; little to some silt; trace to littl sand - very fine	CL		0.0			
	45.5												
	46.0									0.0			
	46.5			45.0-46.5	Soft	Gray	SAND - VERY FINE; little to some silt; little clay and shell	ML					
	47.0									0.0			
	47.5												
	48.0									0.0			
	48.5												
	49.0			46.5-49.0	Soft	Gray	SAND - VERY FINE; little to some silt; little clay; trace shell	ML		0.0			
	49.5			49.0-49.5	Stiff	Gray/ Green	CLAY; trace to little silt	CL	dense and dry				
	50.0			49.5-50	Soft	Gray	SAND - VERY FINE AND SILT	ML		0.0			
	50.5						**BORING TERMINATED 50'**						
	51.0												
	51.5												
	52.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0106

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maintenance Processing Facility (HMPN)
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe 8140 LS

BORING No.: AS0032
DATE: 1/21/2020
GEOLOGIST: Chuck Sorden
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0												
	25.5												
	26.0									0.0			
	26.5												
	27.0									0.0			
	27.5												
	28.0									0.0			
	28.5												
	29.0			25.0-29.0	Soft	Gray	SAND - FINE TO VERY FINE	SP		0.0			
	29.5												
	30.0		10/10	29.0-30	Firm	Gray	CLAY; little to some silt; trace sand - very fine	CL		0.0			
	30.5												
	31.0			30-31.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some silt and shell	SP/ SM		0.0			
	31.5			31.0-31.25	Soft	Gray	SILT; little to some sand - very fine	SM					
	32.0									0.0			
	32.5												
	33.0									0.0			
	33.5												
	34.0			31.25-34.25	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt and shell	SP/ SM		0.0			
	34.5			34.25-34.75	Firm	Gray	CLAY; little to some sand - very fine and silt	CL					
	35.0			34.75-35.0	Soft	Gray	SHELL	GP		0.0			
	35.5						**BORING TERMINATED 35'**						
	36.0												
	36.5												
	37.0												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

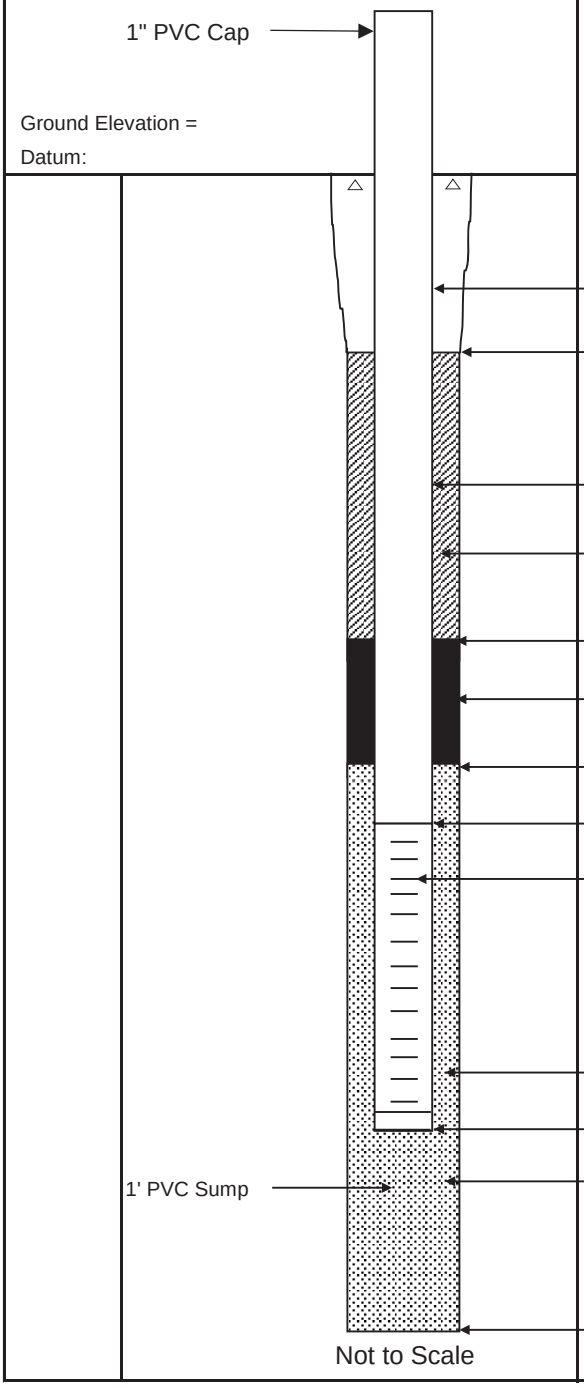
Converted to Well: Yes X No _____ Well I.D. #: AS0032

Tetra Tech, Inc.

BORING No.: AS0001

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0001
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/02/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



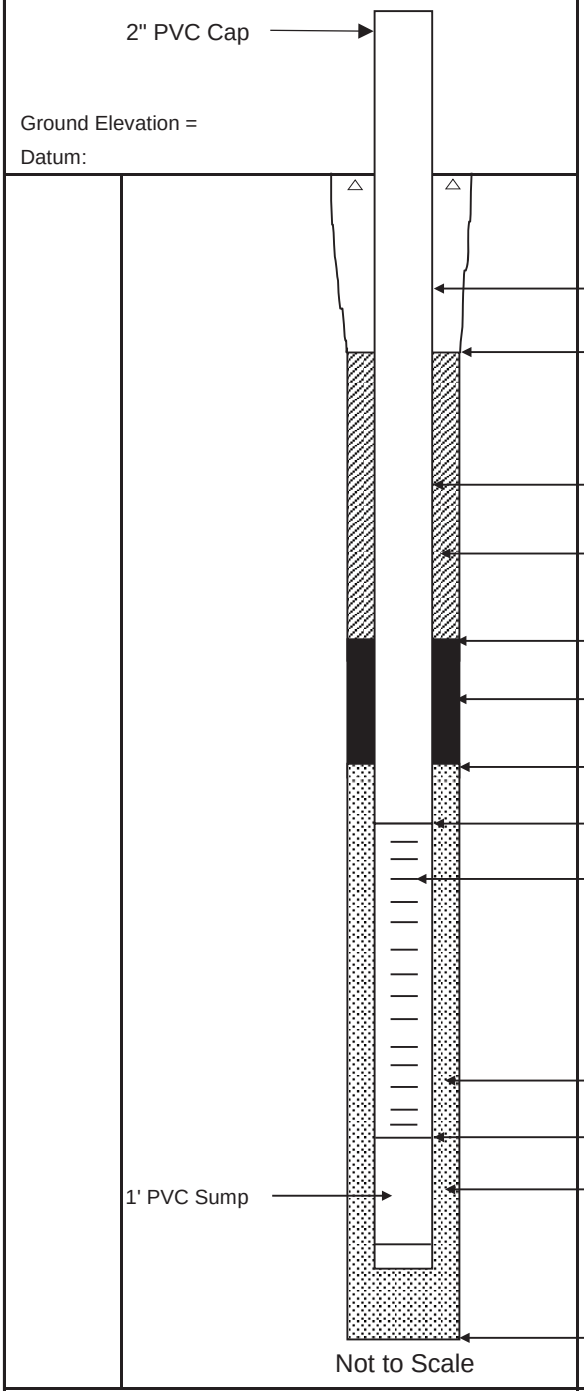
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24'
Elevation / Depth of Top of Screen:		/ 25.5'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.5'
Elevation / Depth of Bottom of Filter Pack:		/ 27.5'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0055

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0055
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/02/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



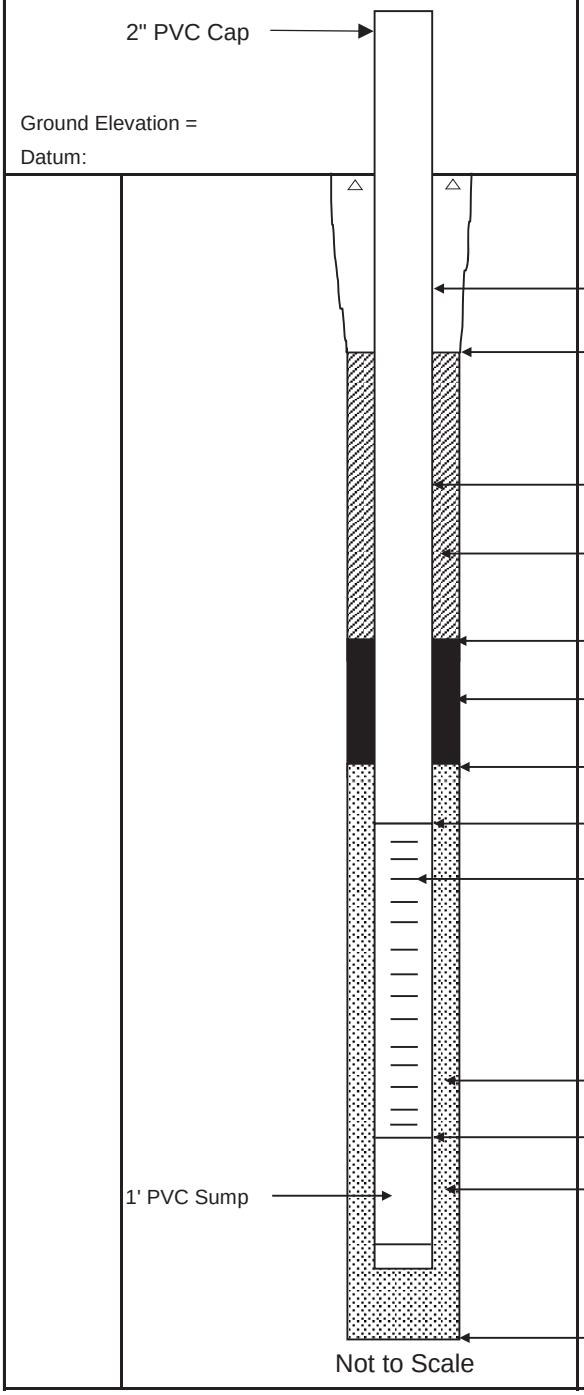
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0062

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0062
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



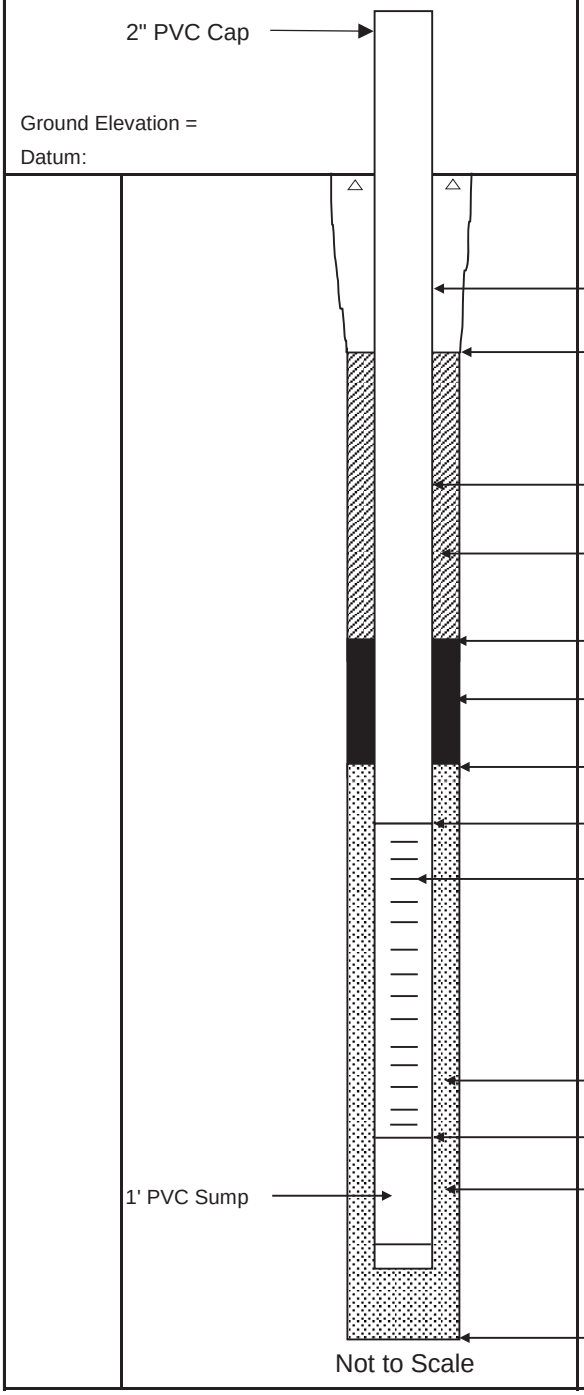
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0061

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0061
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



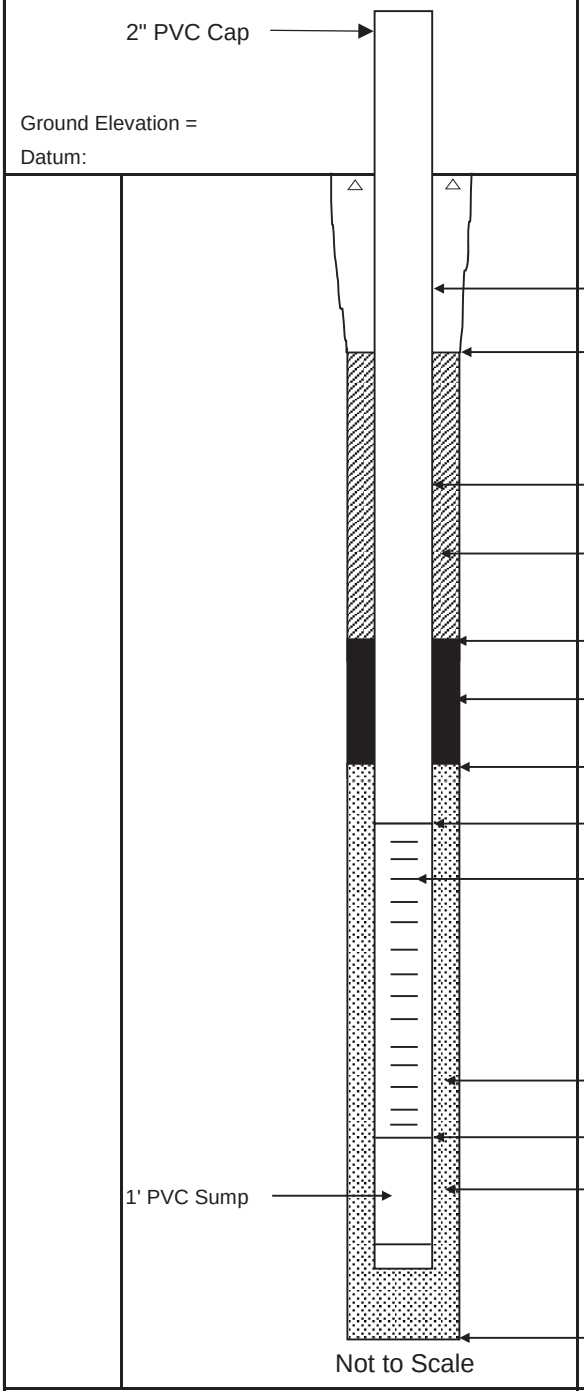
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0068

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0068
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



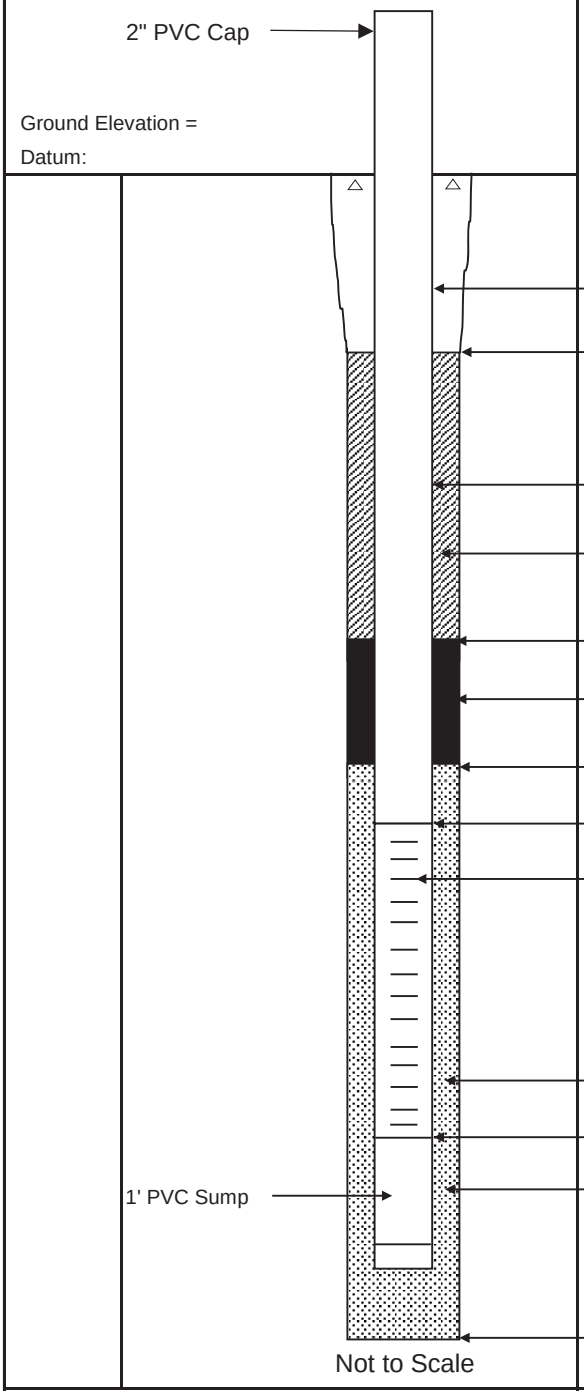
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0076

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0076
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



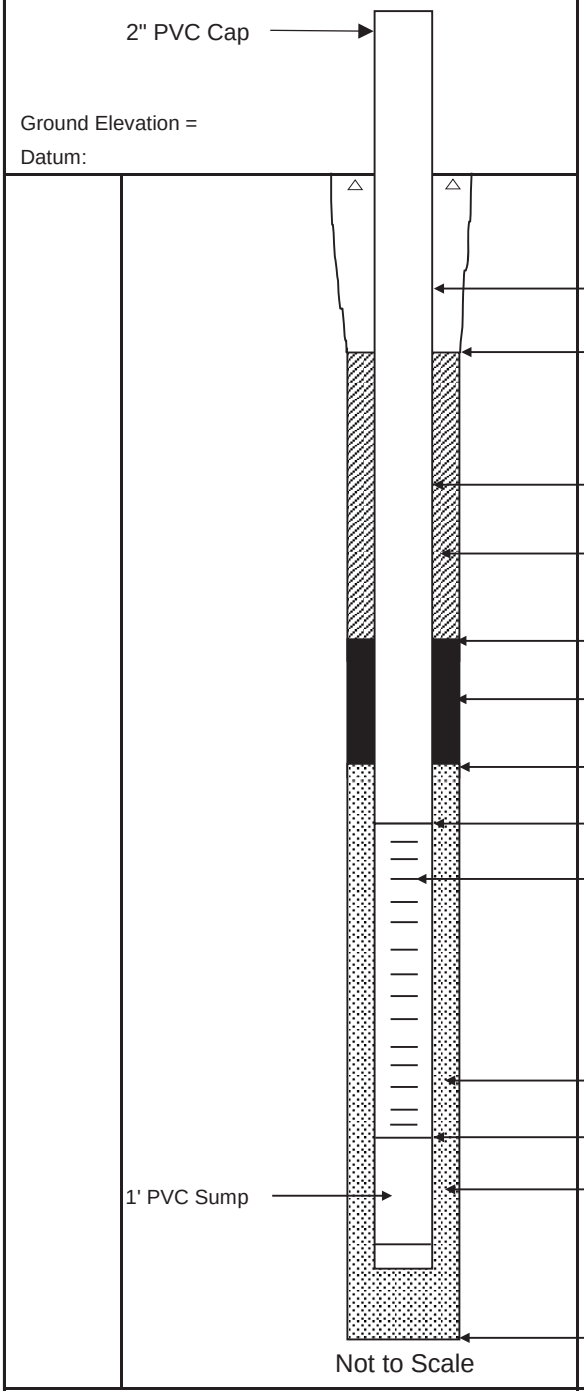
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0084

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0084
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



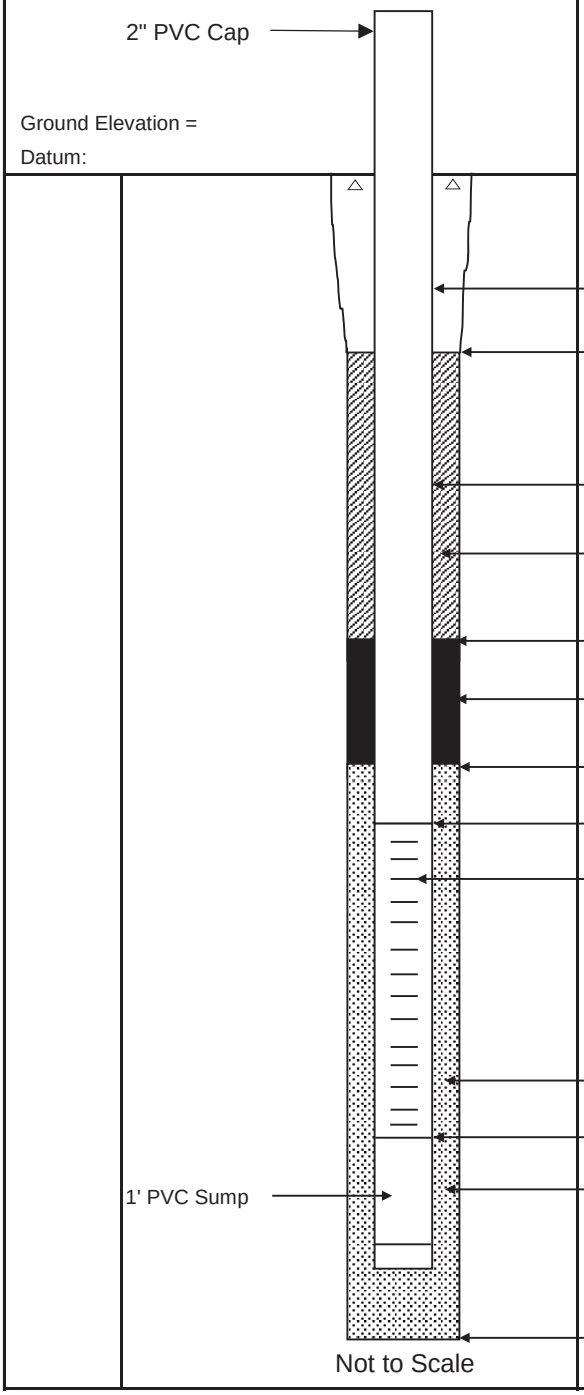
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0085

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0085
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



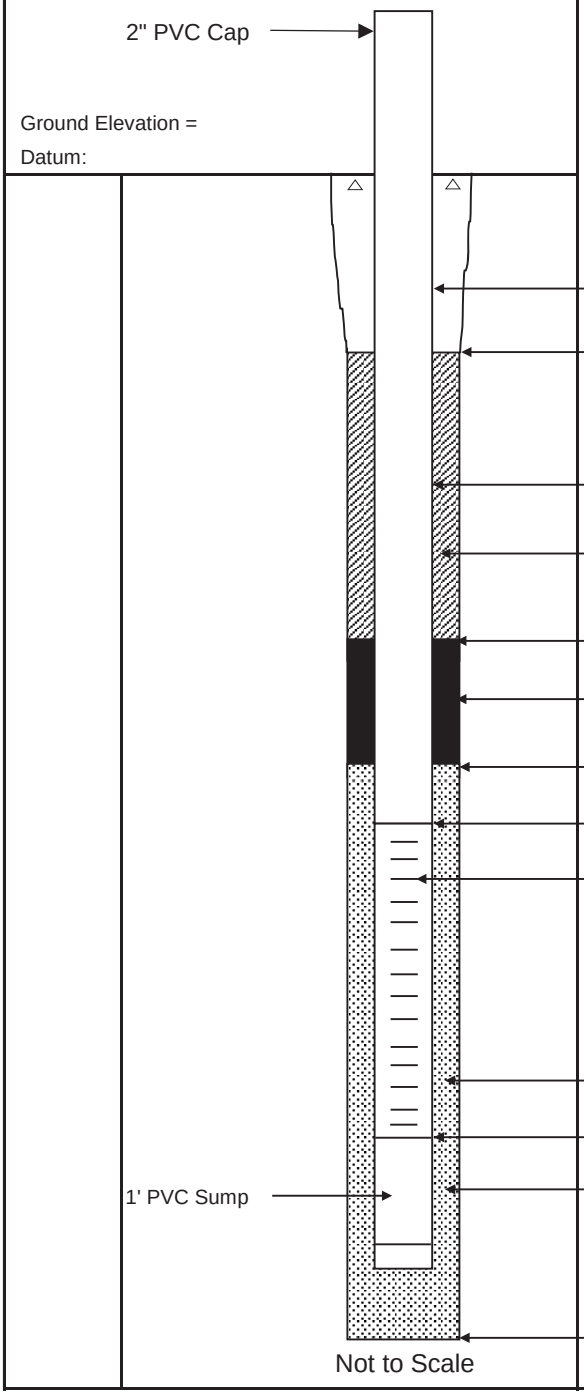
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0092

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0092
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



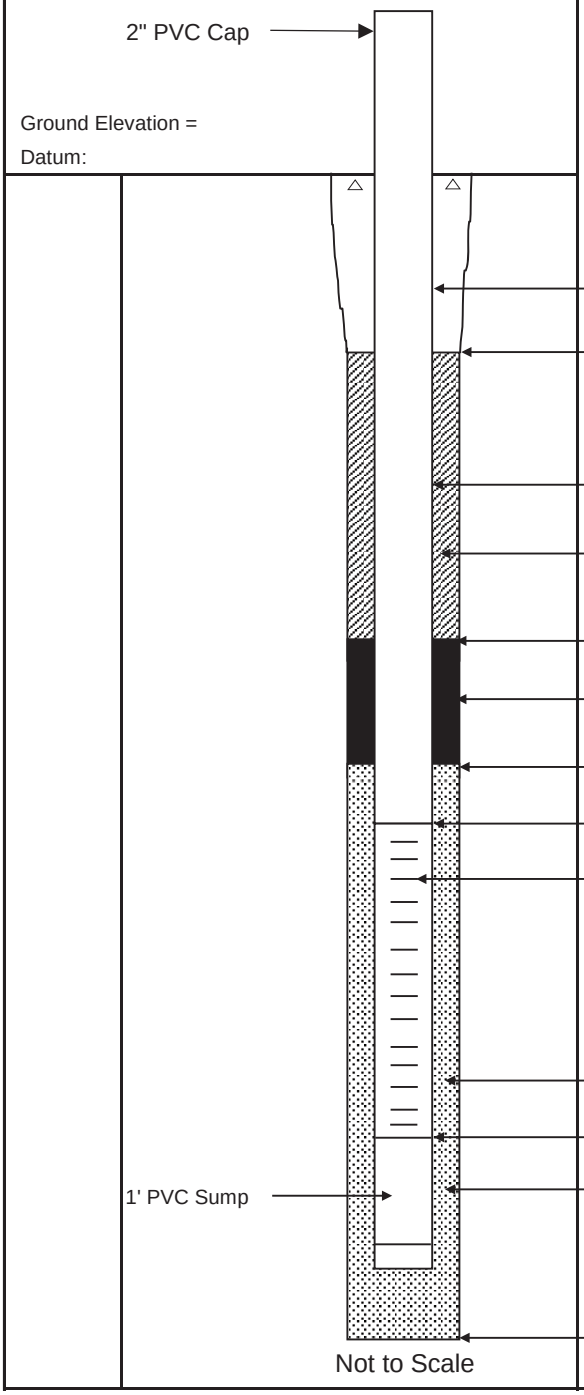
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0103

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0103
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



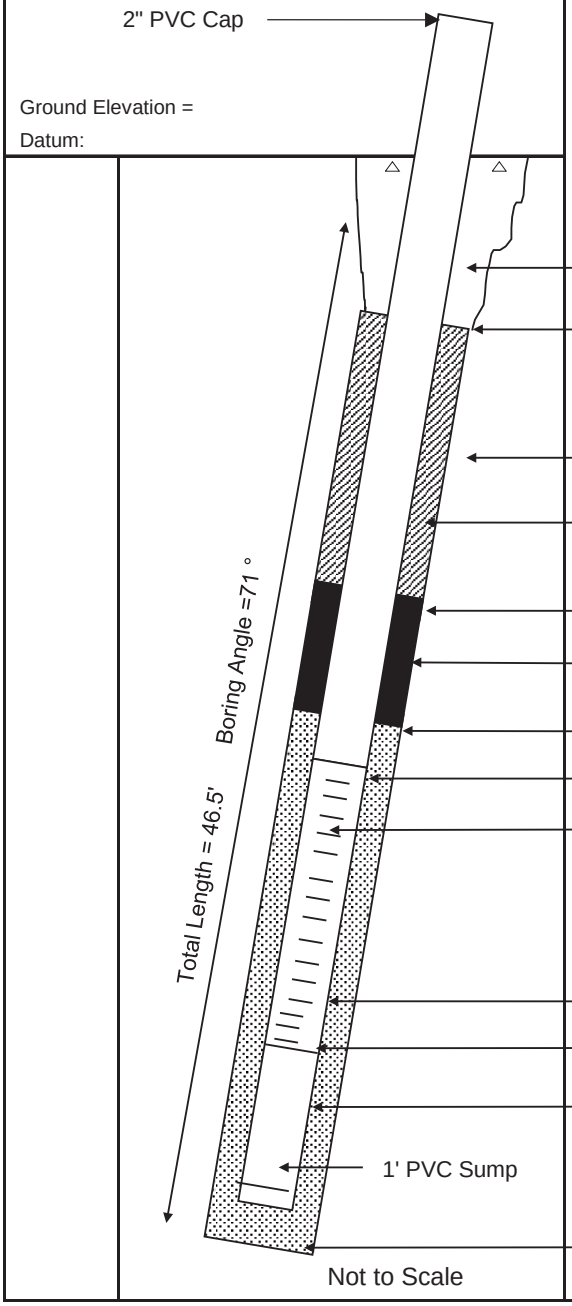
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0086

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0086
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



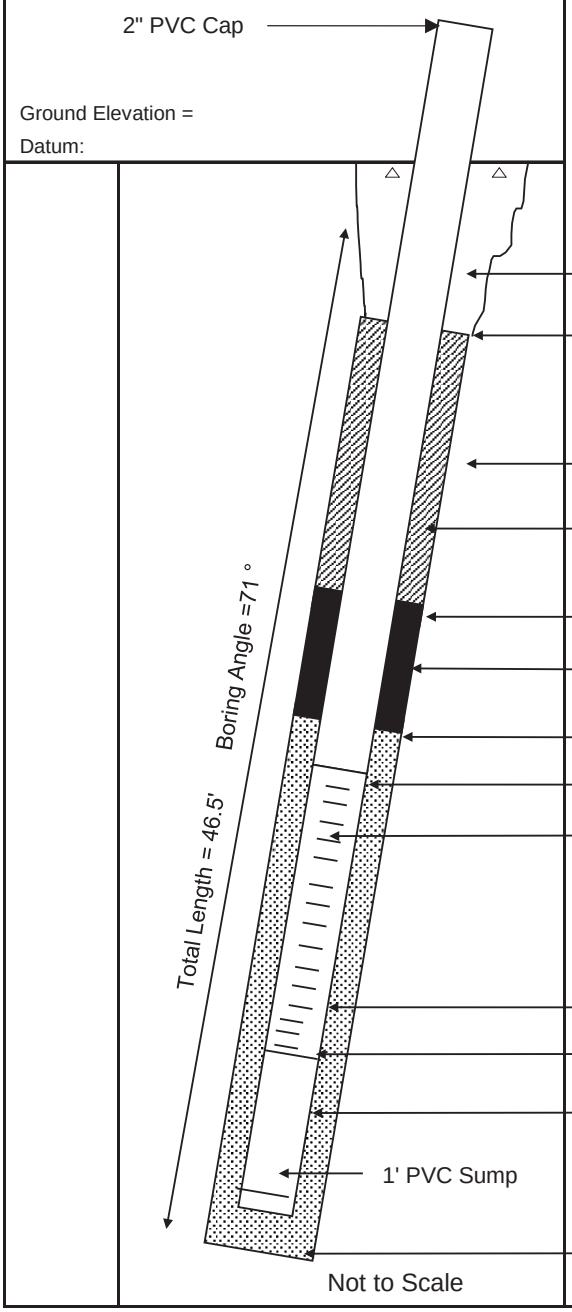
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0094

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0094
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



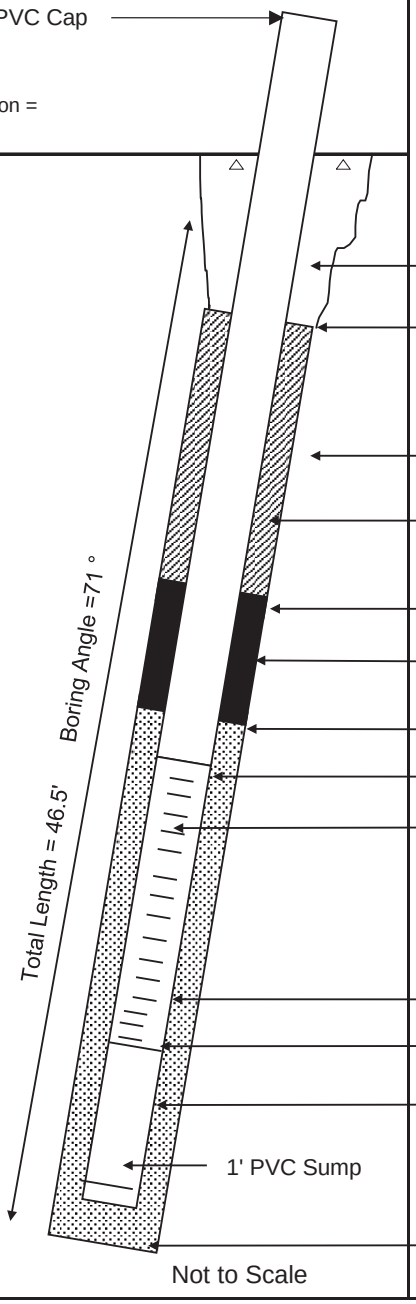
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0105

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0105
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



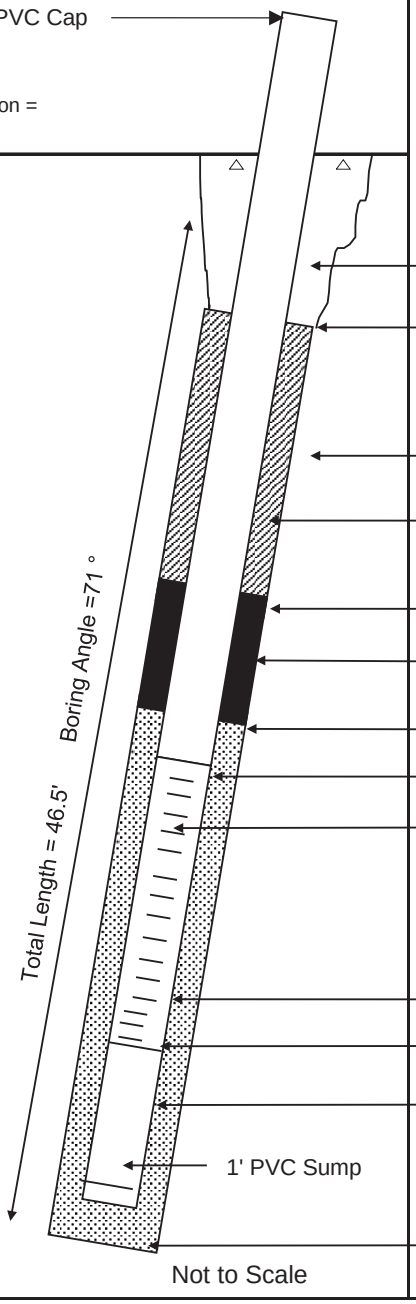
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0117

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0117
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



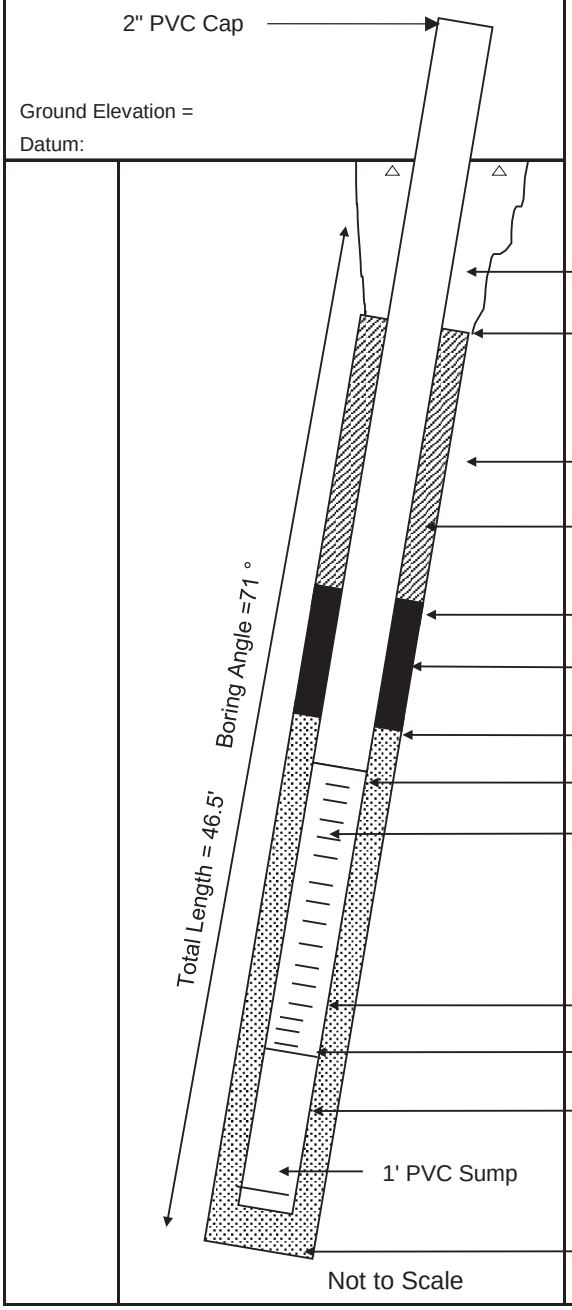
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0128

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0128
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



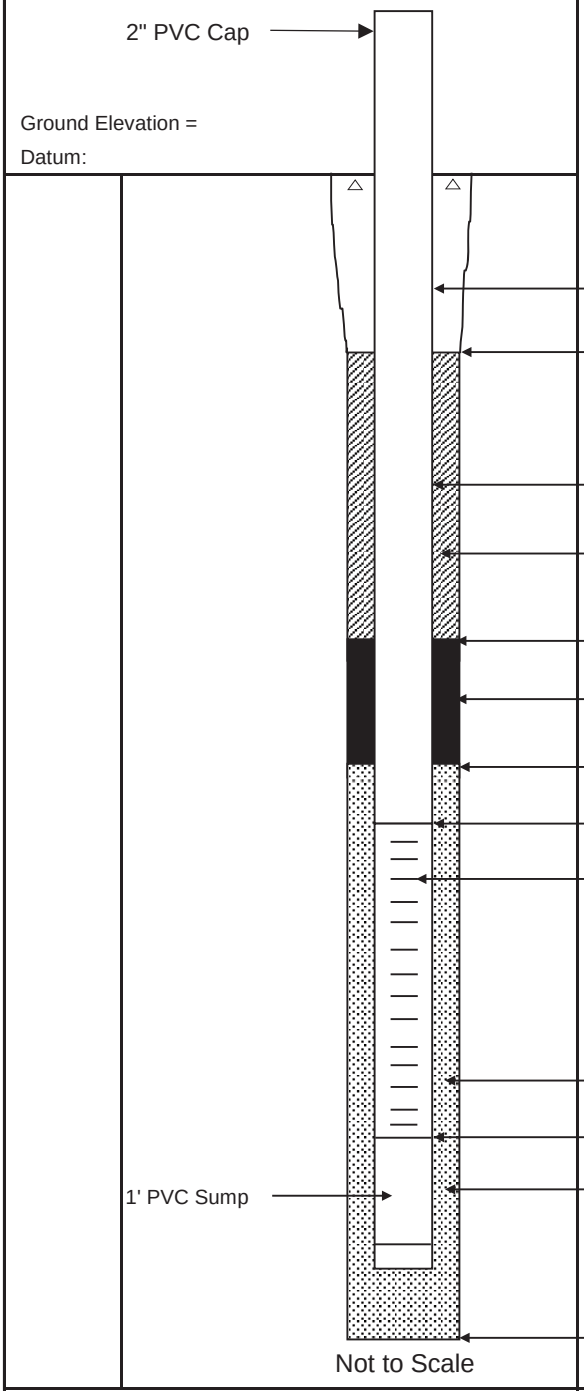
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0138

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0138
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



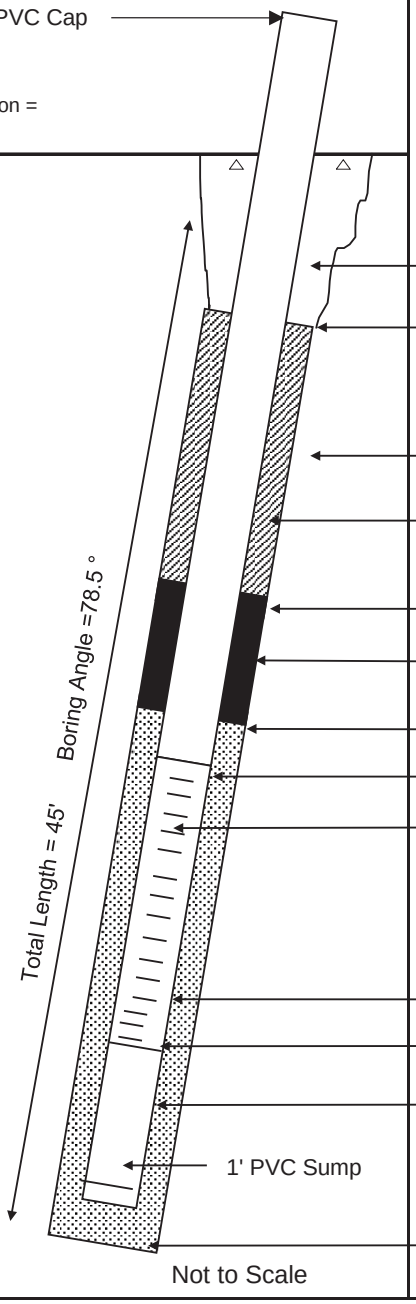
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0151

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0151
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



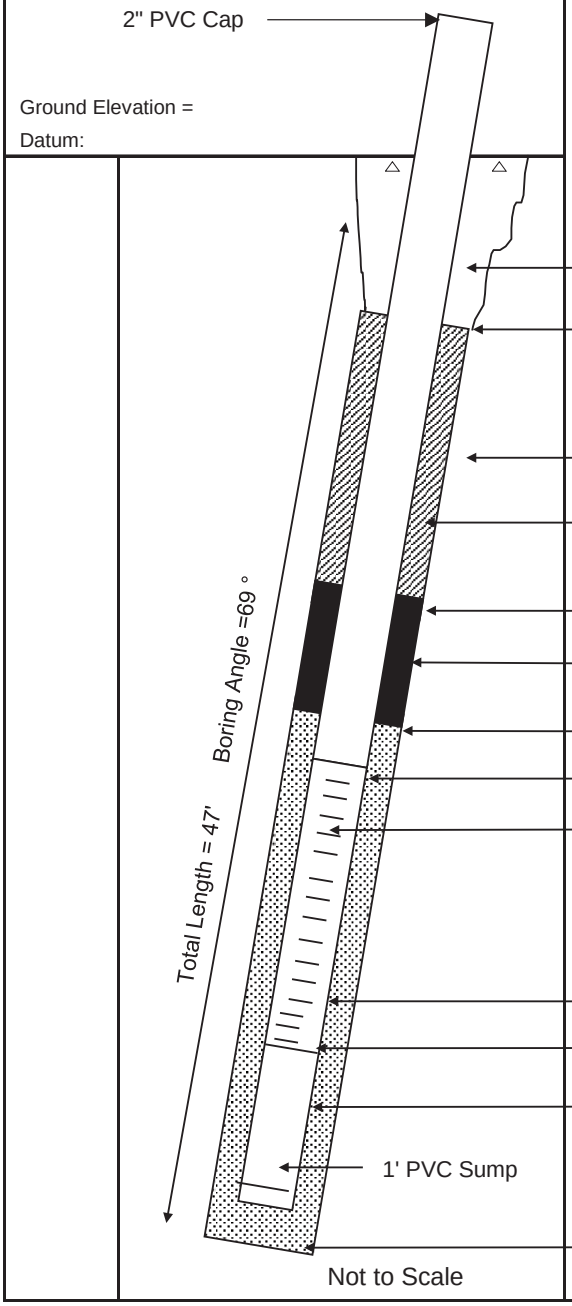
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0196

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0196
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



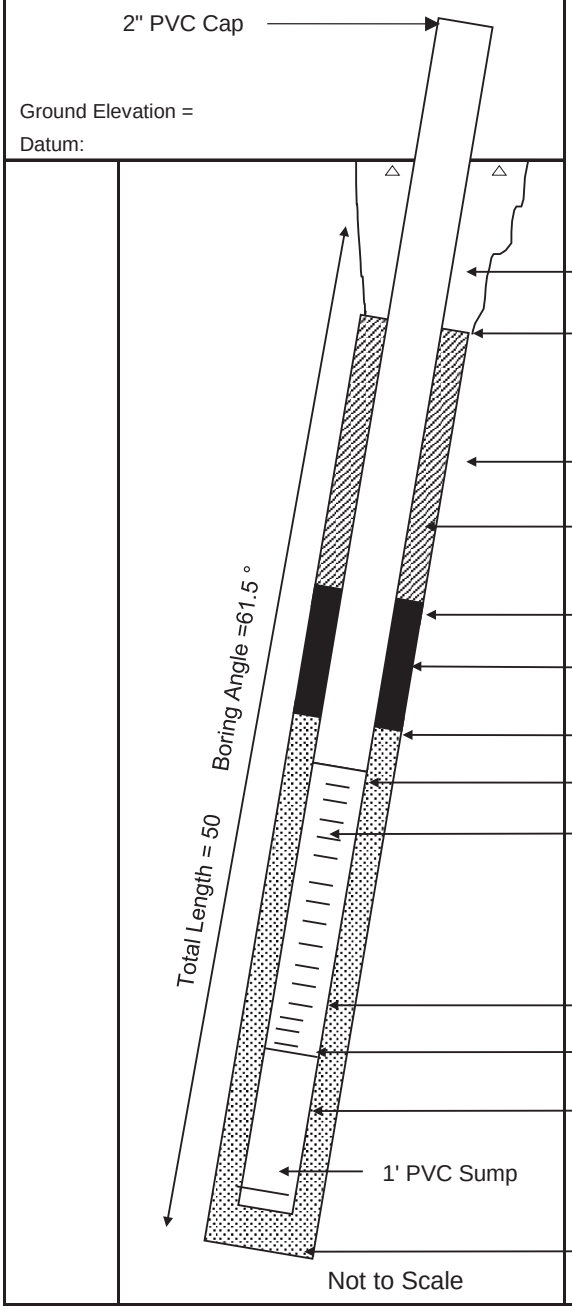
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0206

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0206
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/09/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



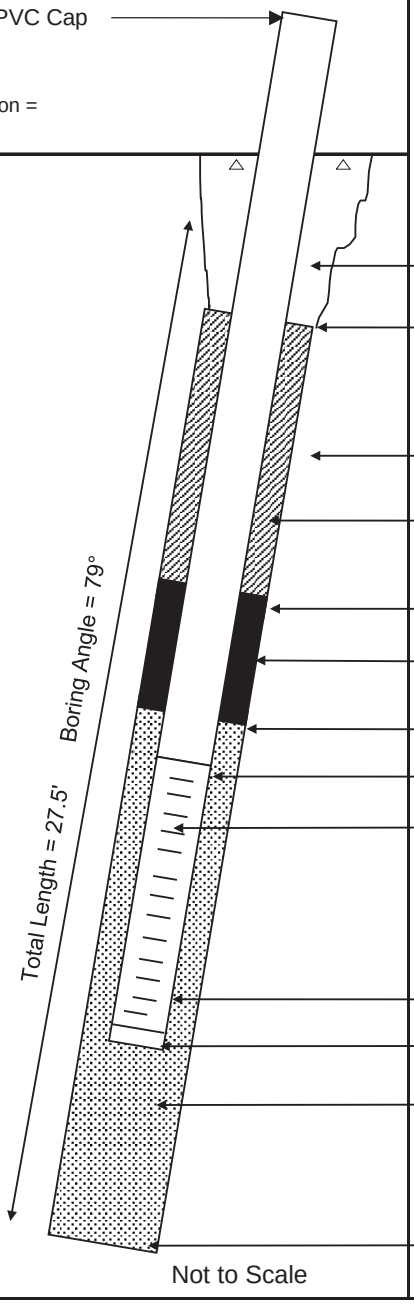
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0015

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0015
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/09/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



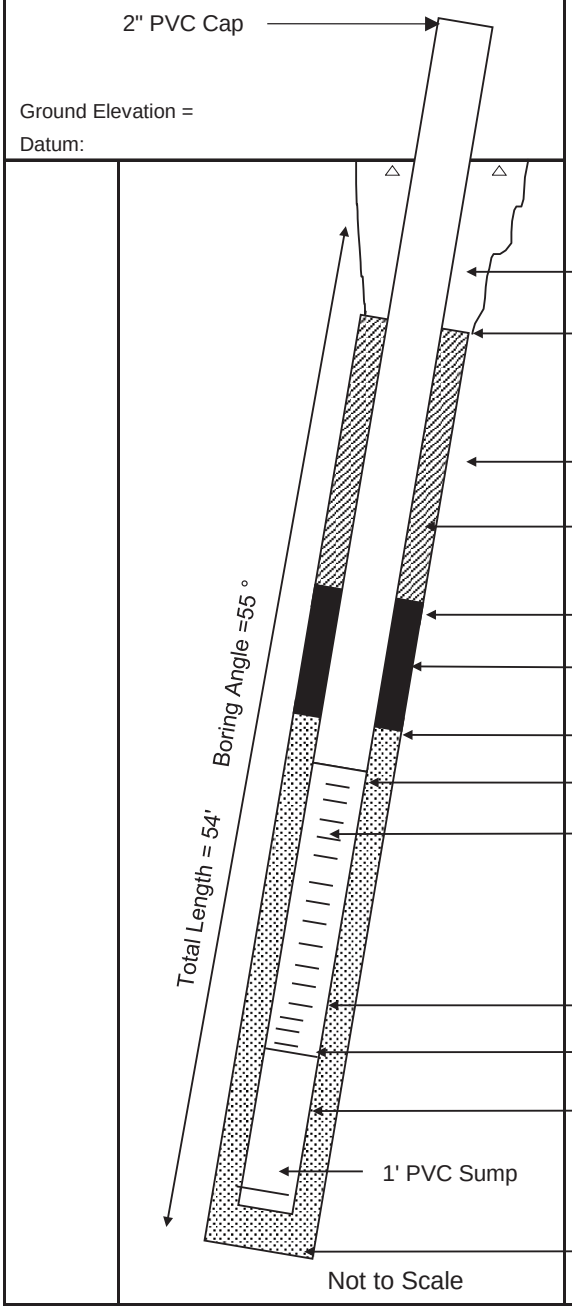
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 27.0'

Tetra Tech, Inc.

BORING No.: AS0047

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0047
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/09/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



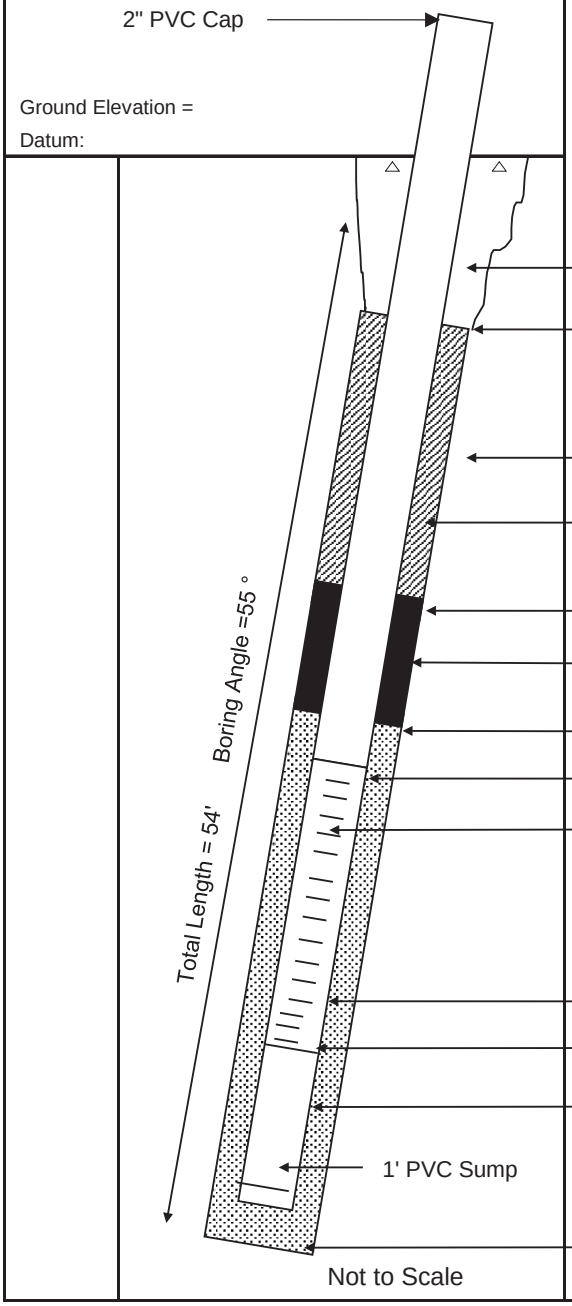
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0052

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0052
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



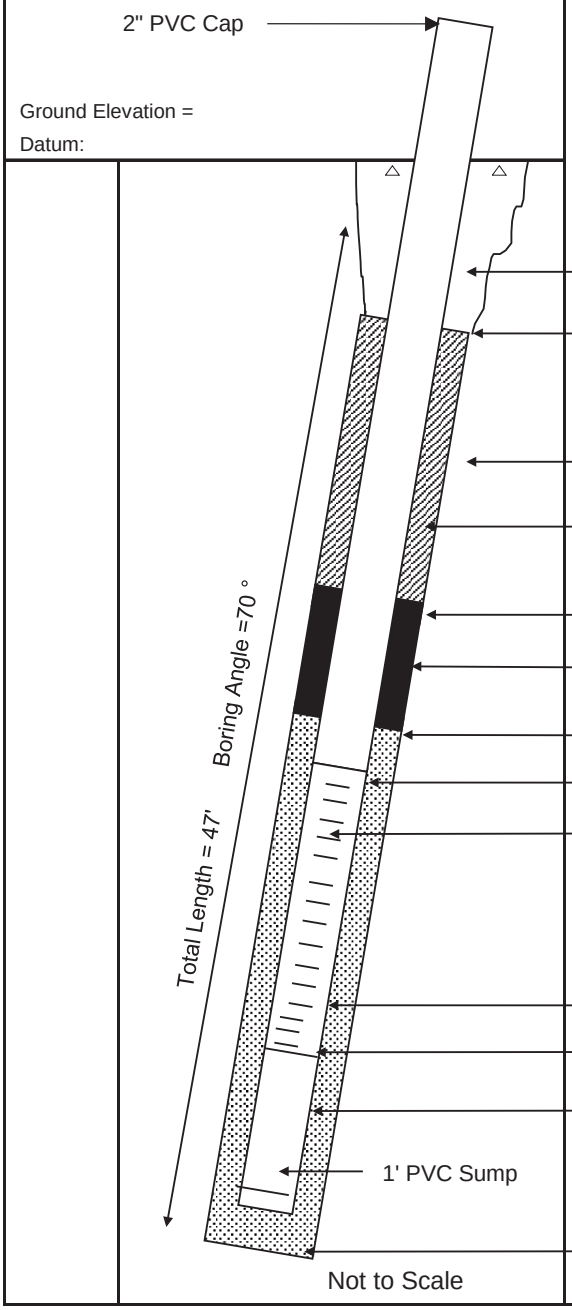
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0057

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0057
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



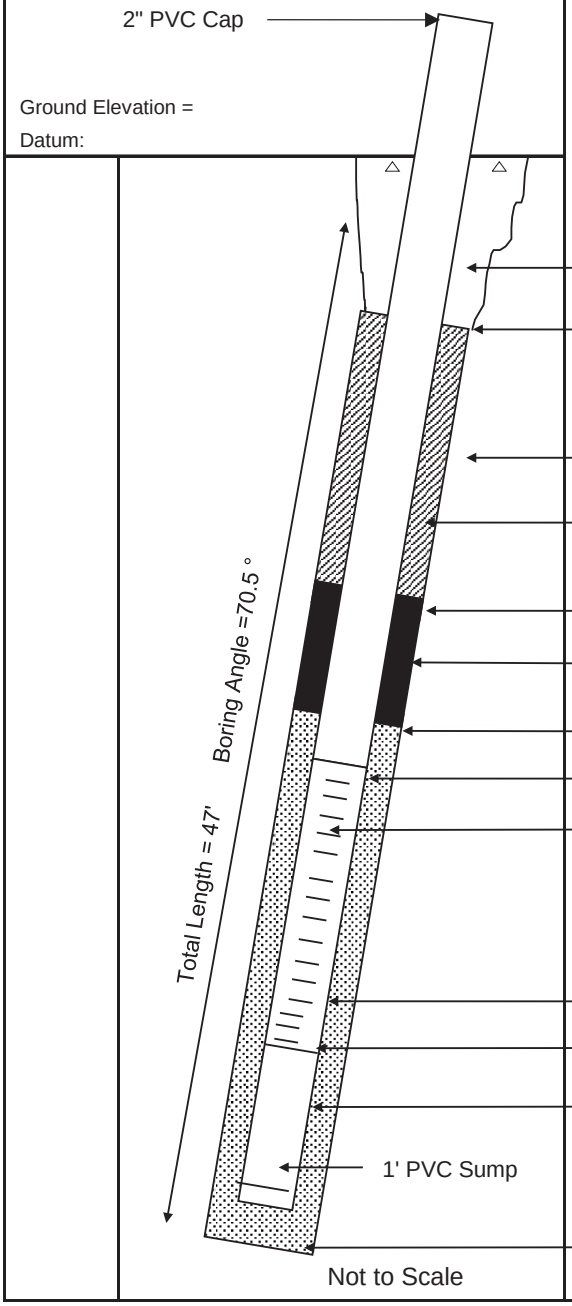
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0046

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0046
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



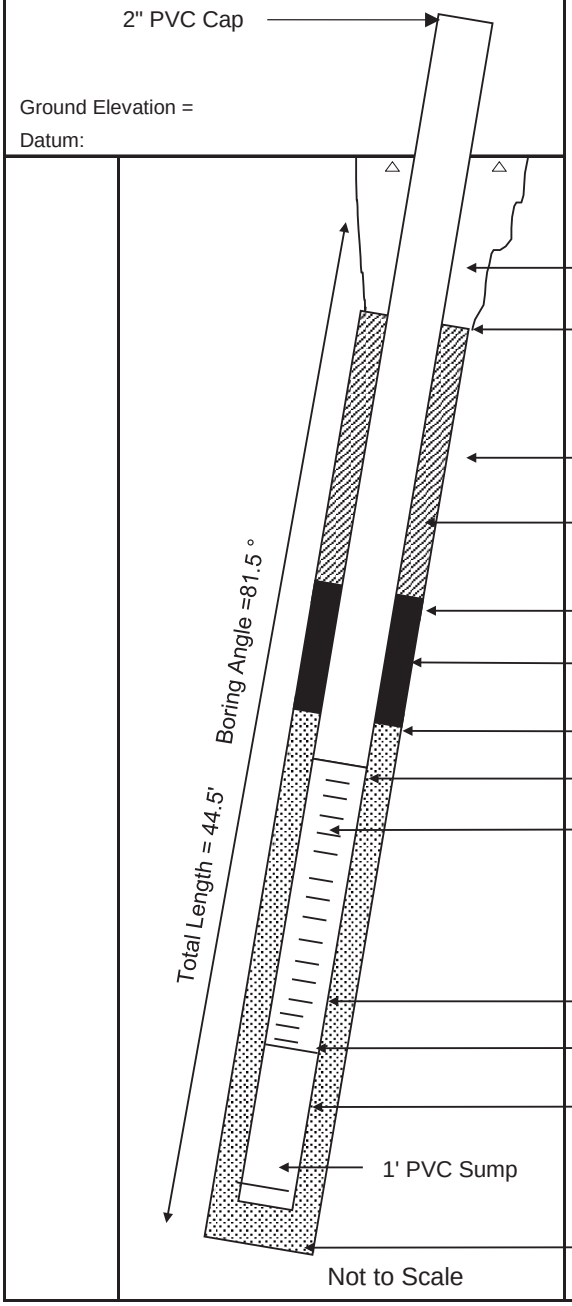
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0069

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0069
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



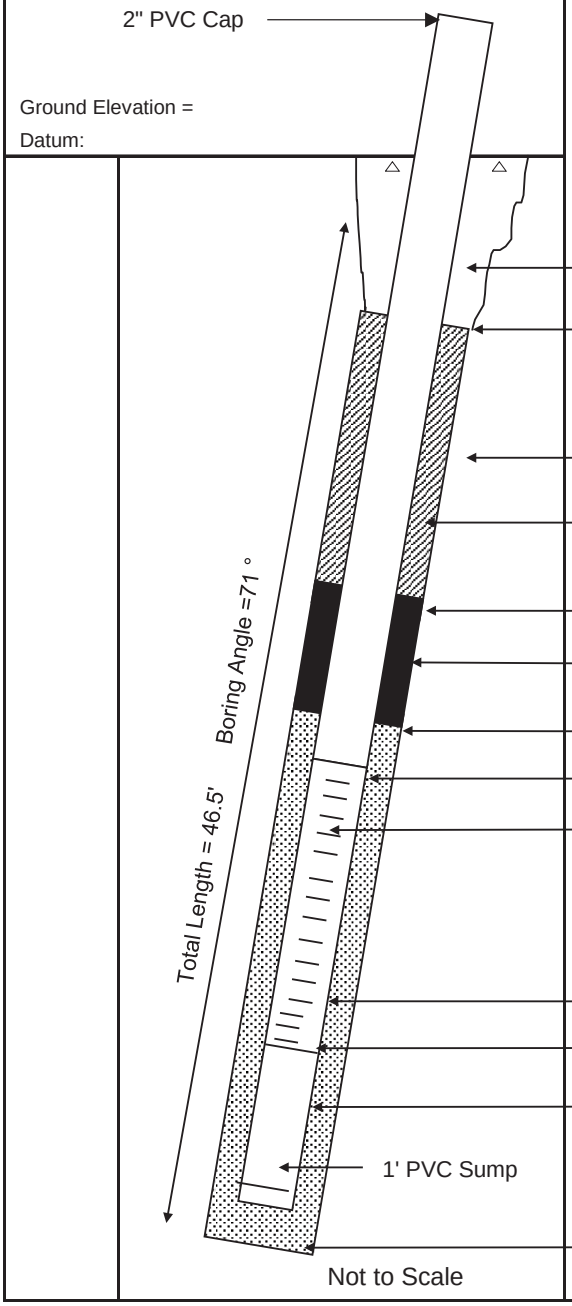
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0051

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0051
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



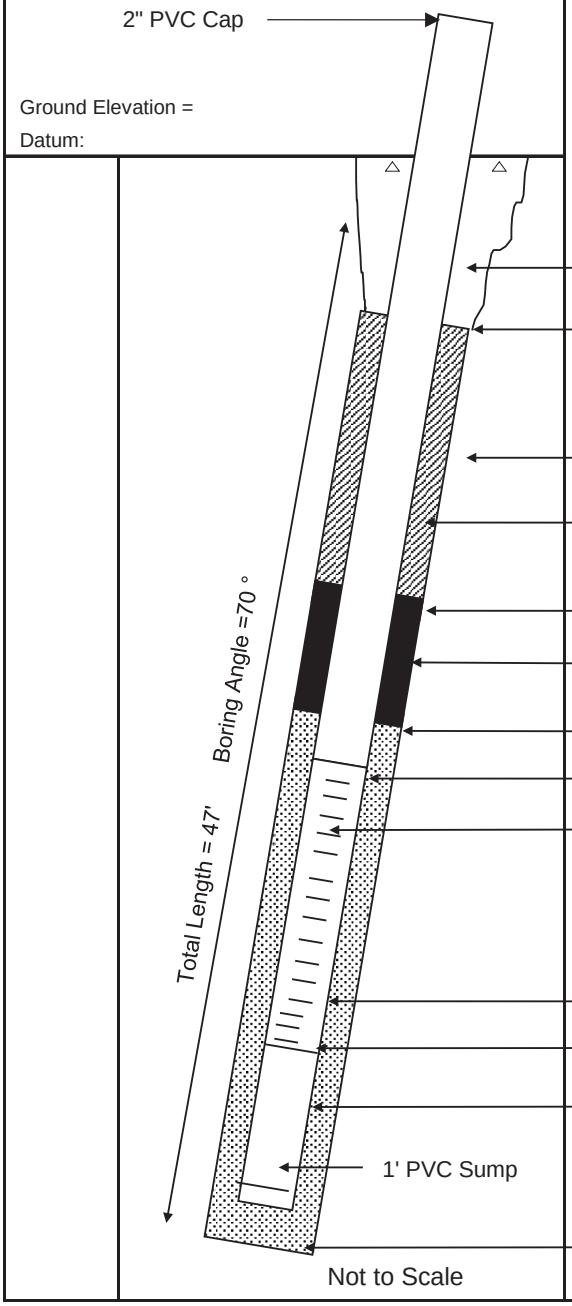
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0077

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0077
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



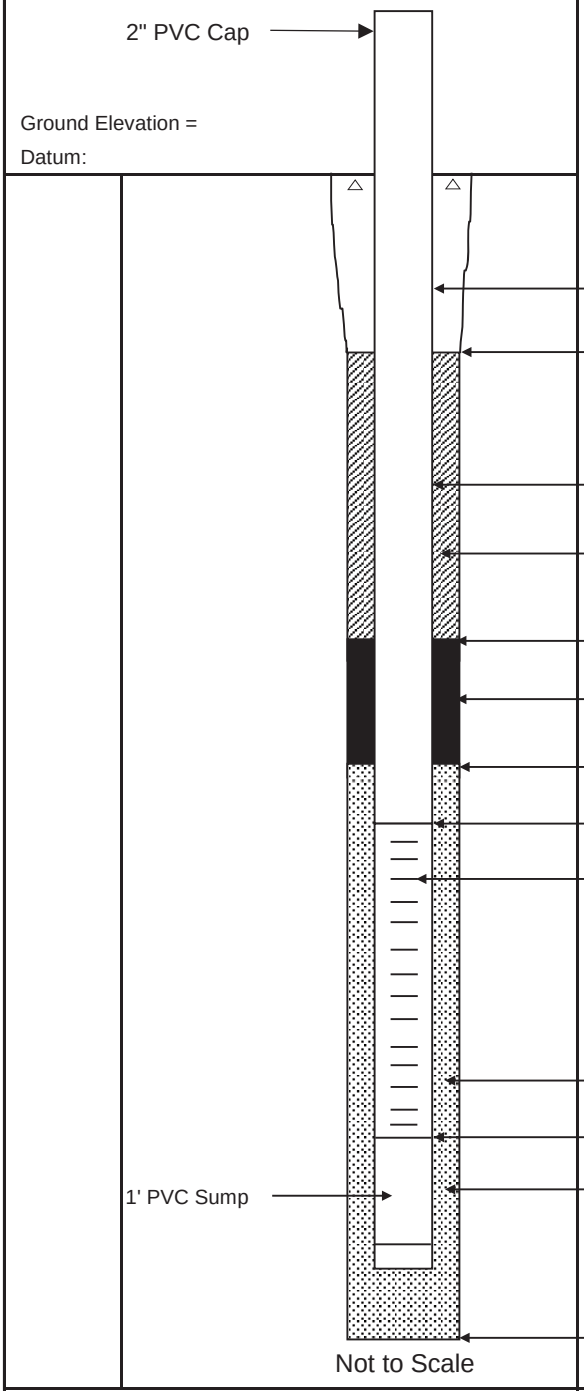
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0050

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0050
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



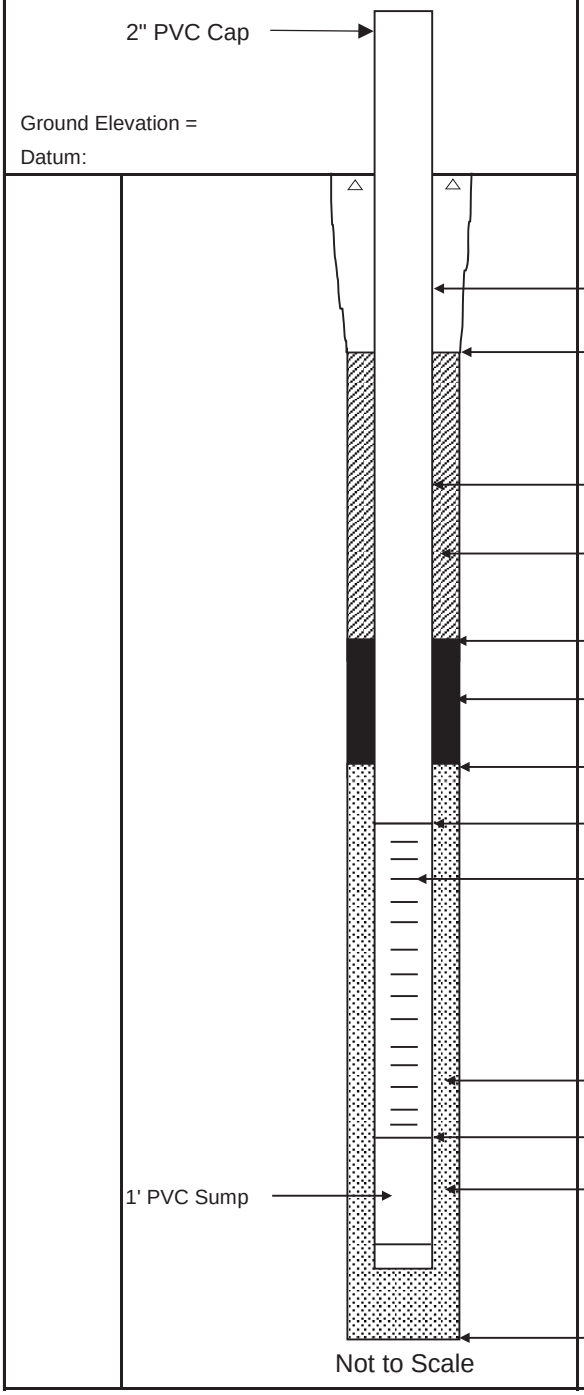
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0056

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0056
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



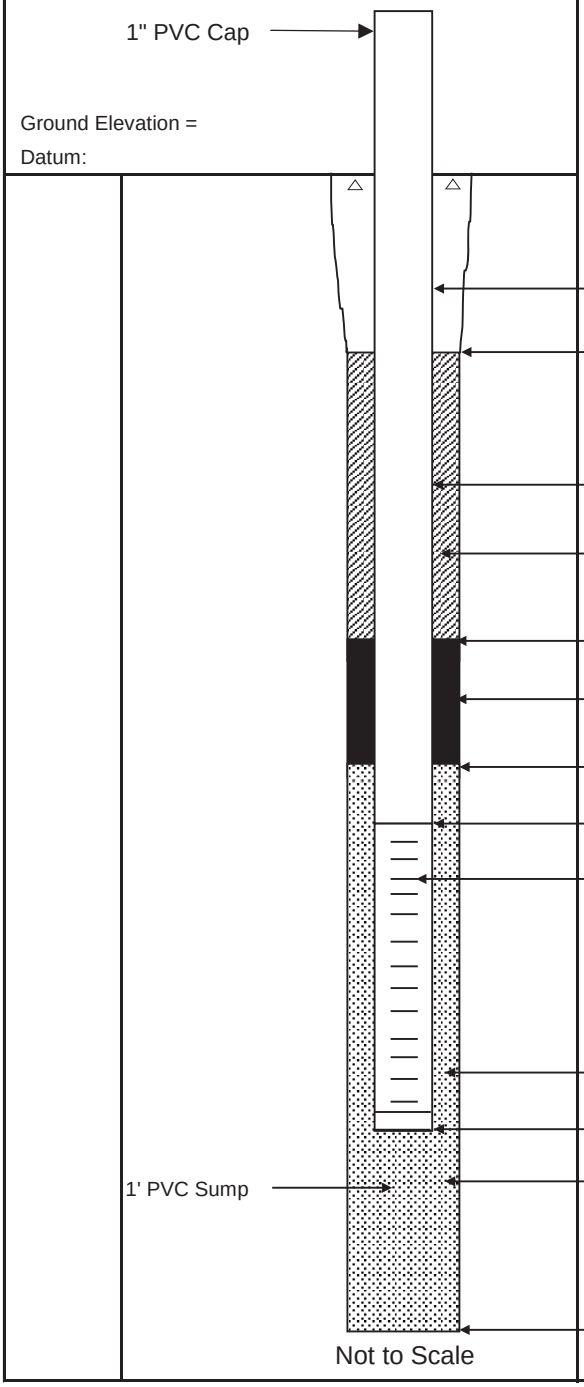
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0018

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0018
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



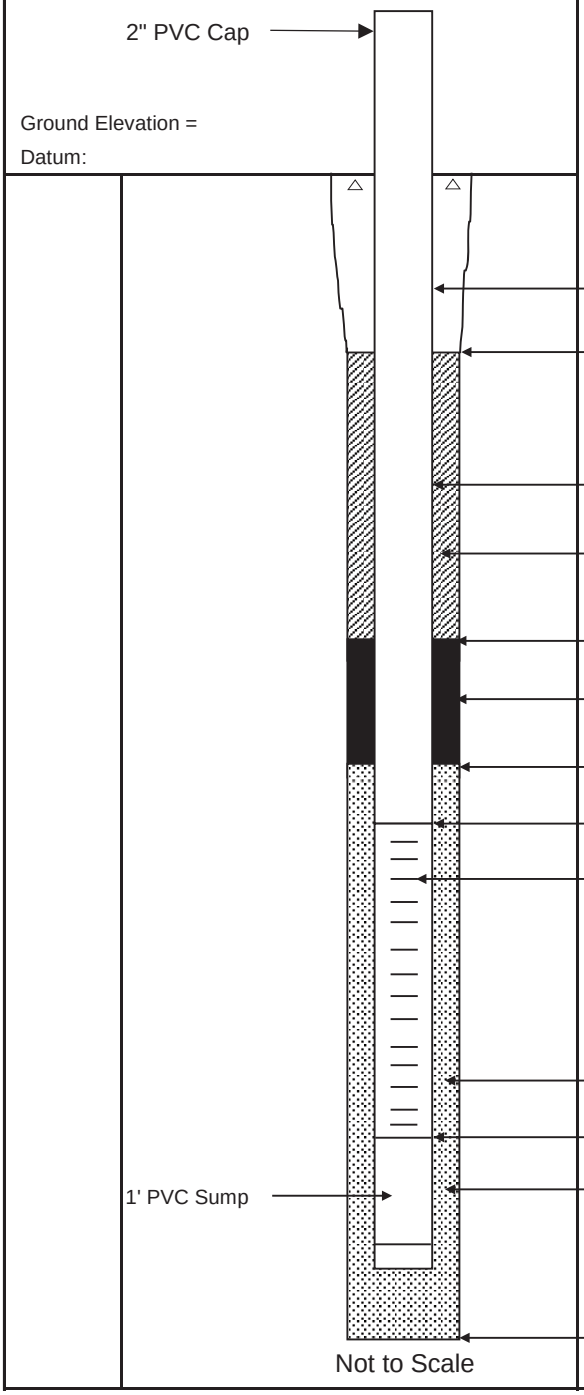
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 27.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 30.0'
Elevation / Depth of Top of Screen:		/ 30.5'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.5'
Elevation / Depth of Bottom of Filter Pack:		/ 33.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0093

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0093
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



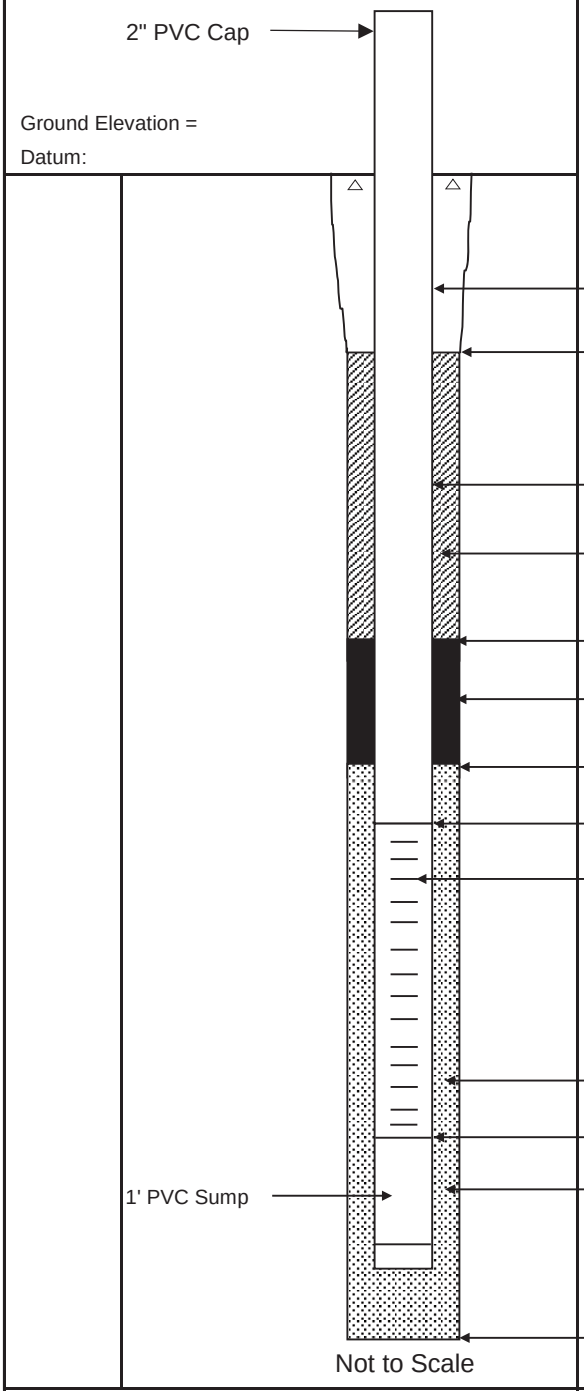
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0104

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0104
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



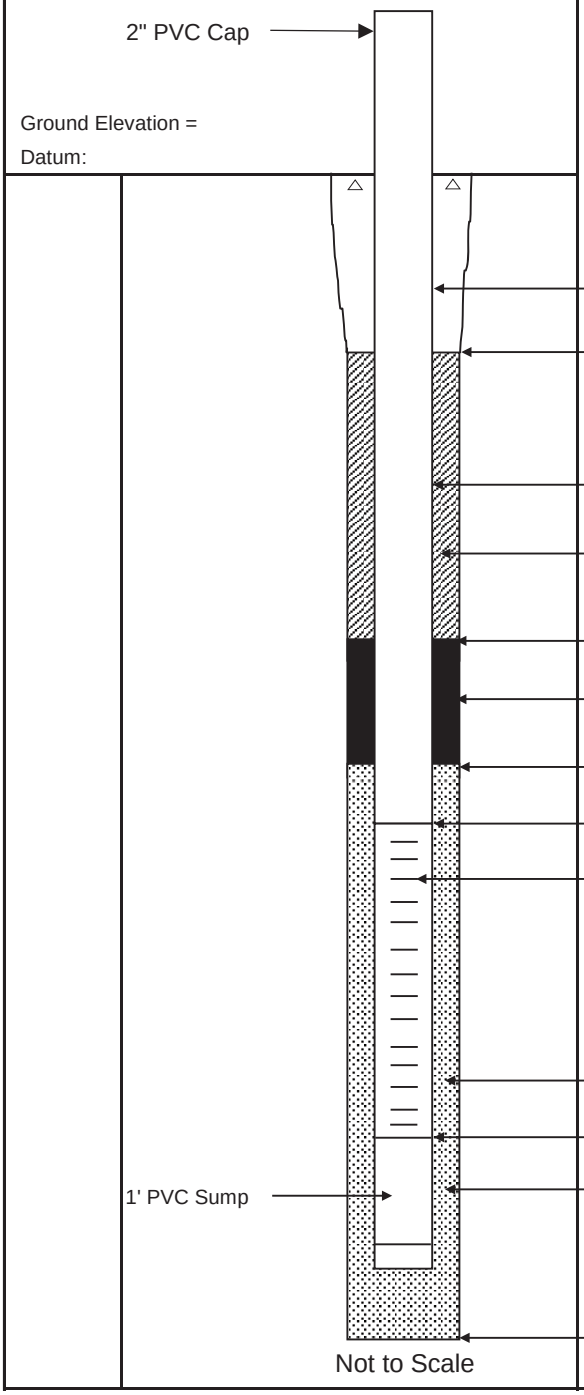
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0116

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0116
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



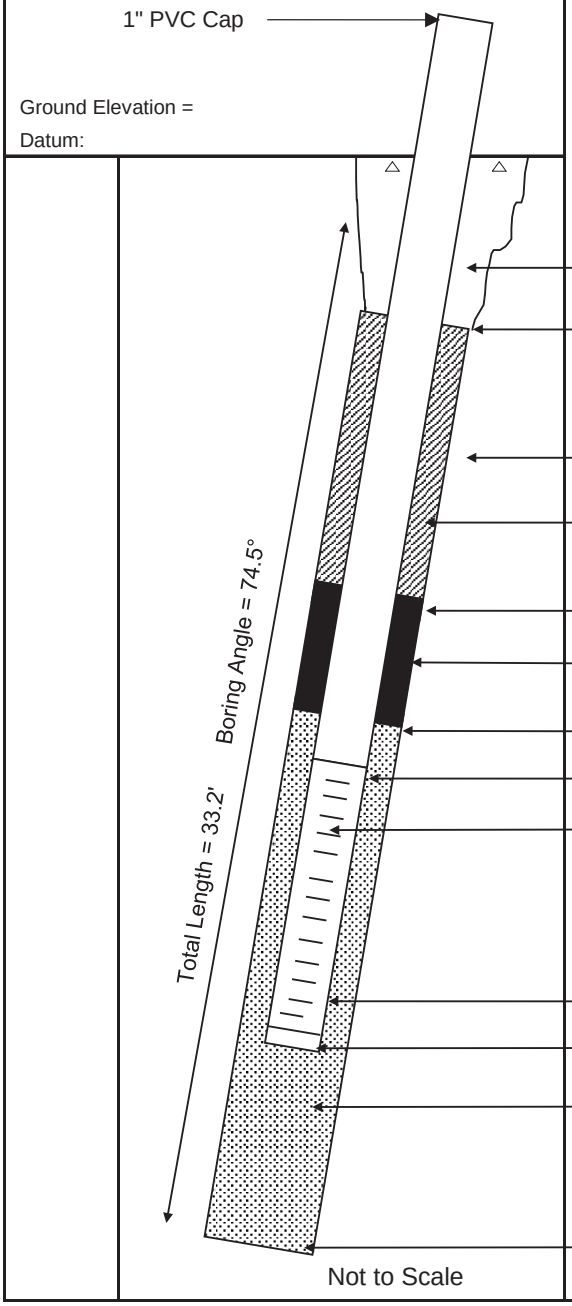
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0027

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0027
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



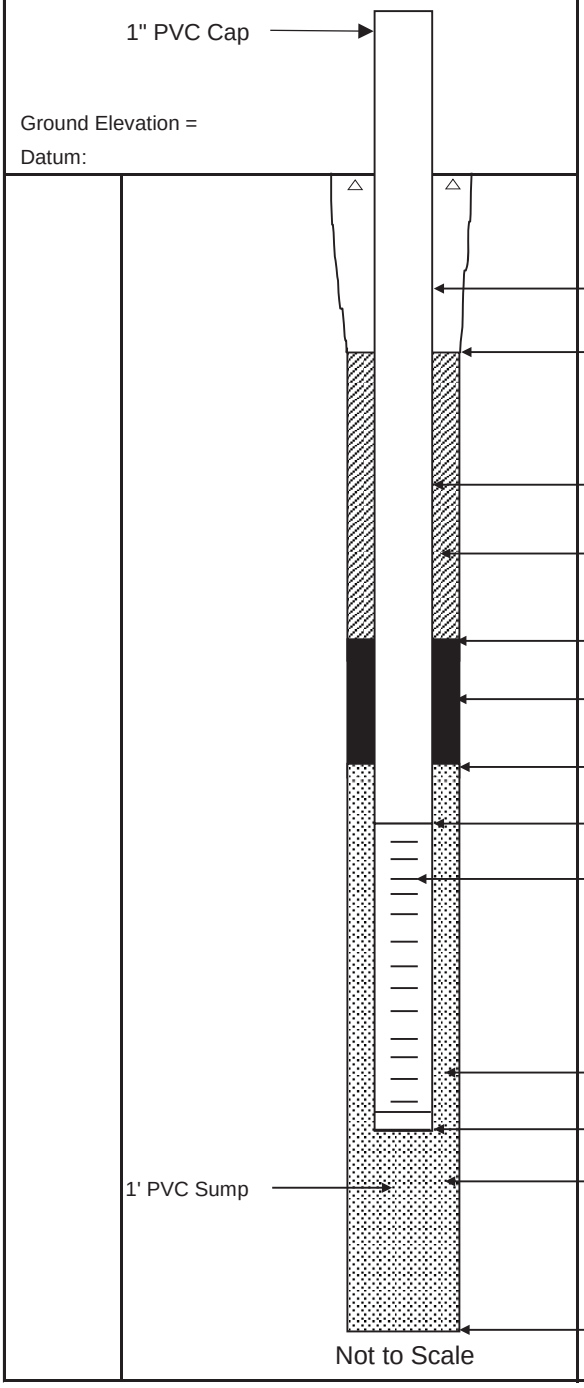
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0018

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0018
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



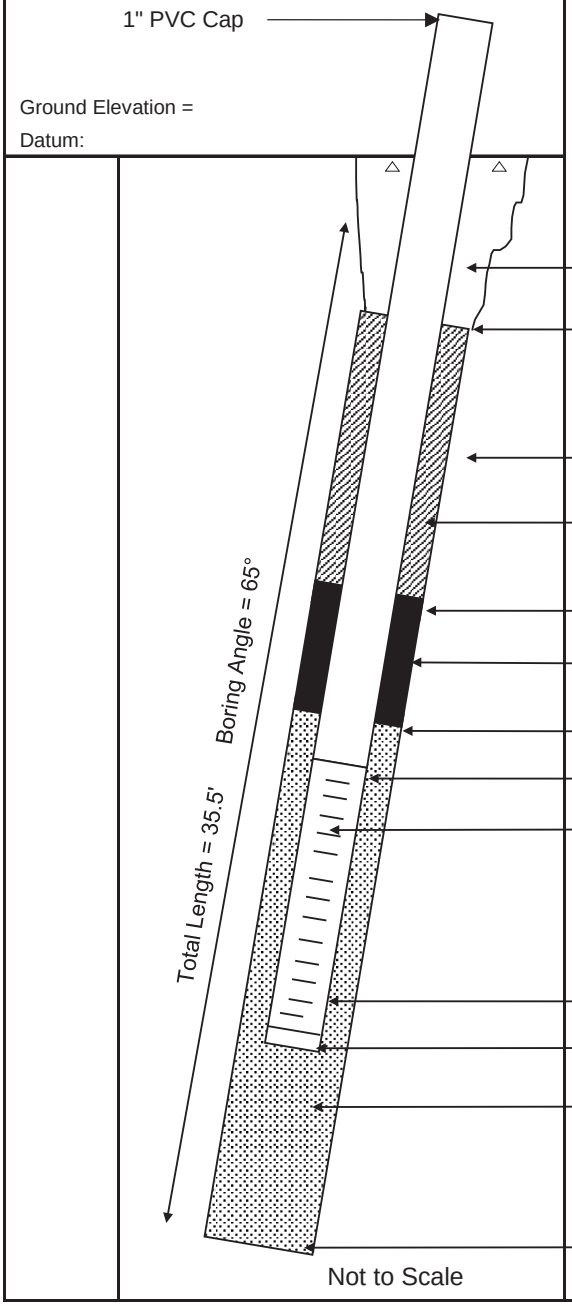
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 29.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 32.5'
Elevation / Depth of Top of Screen:		/ 33.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 35.0'
Elevation / Depth of Bottom of Filter Pack:		/ 35.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0029

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0029
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



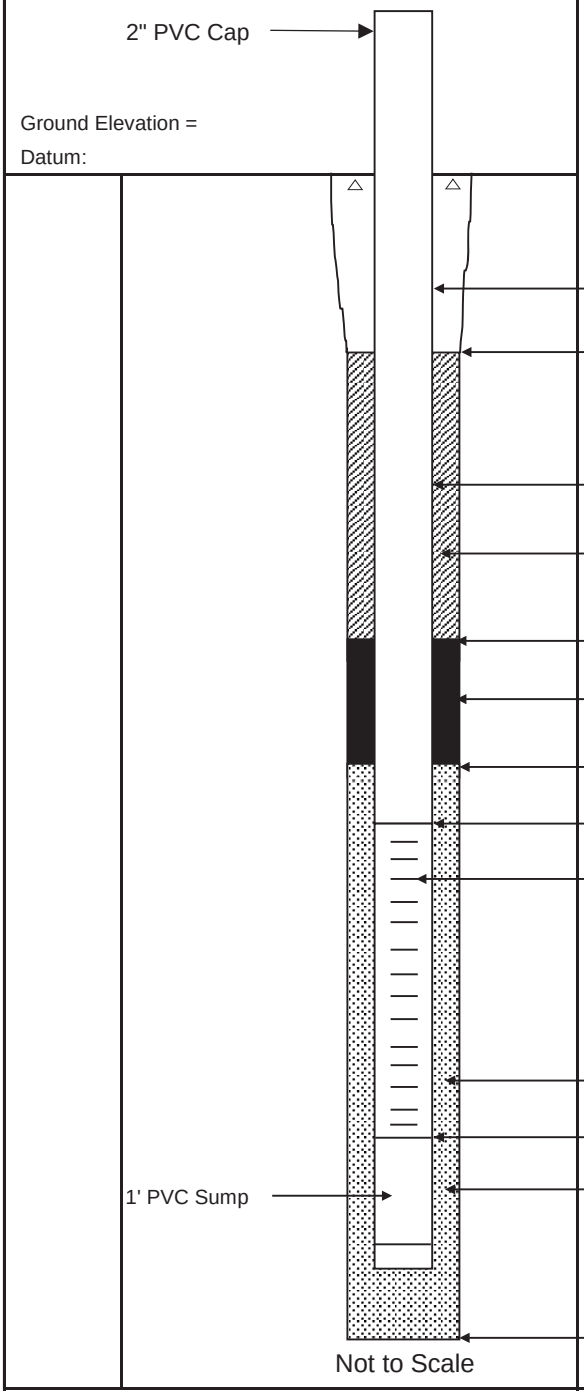
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0139

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0139
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



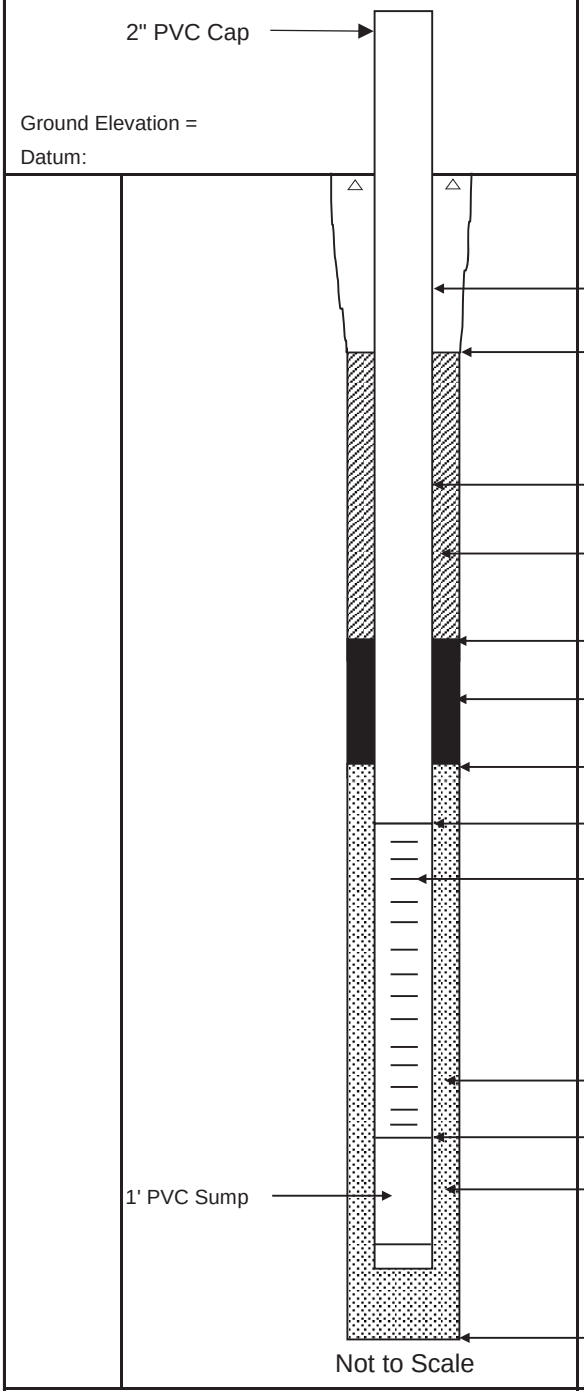
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0126

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0126
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



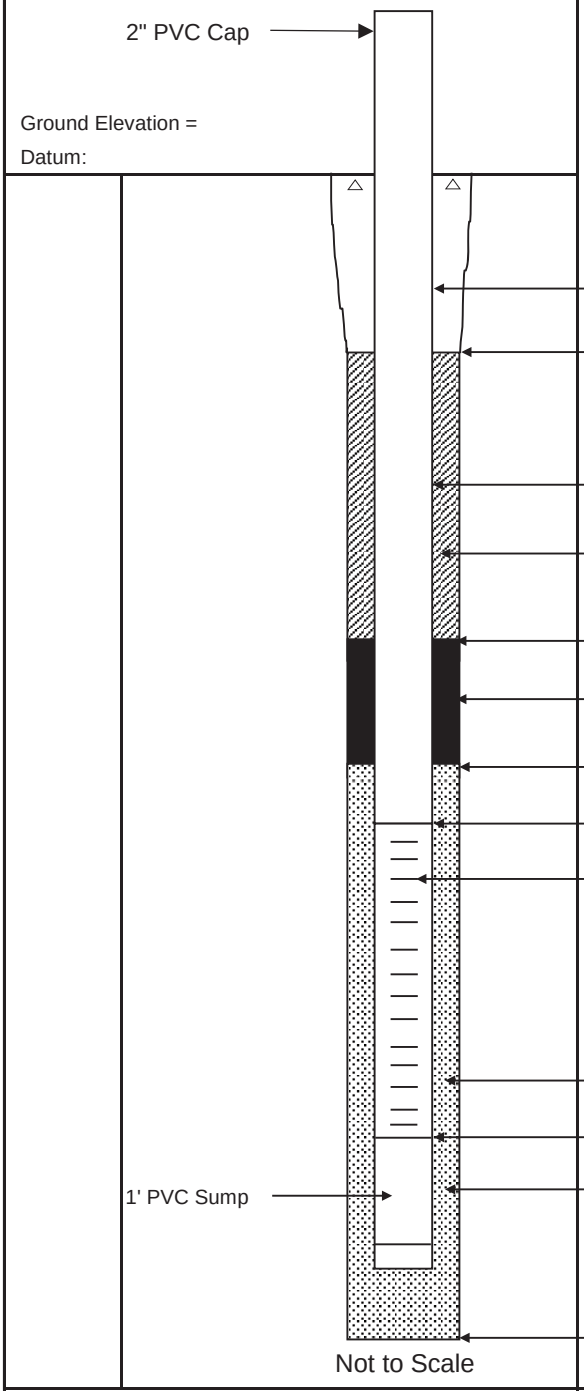
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0202

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0202
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



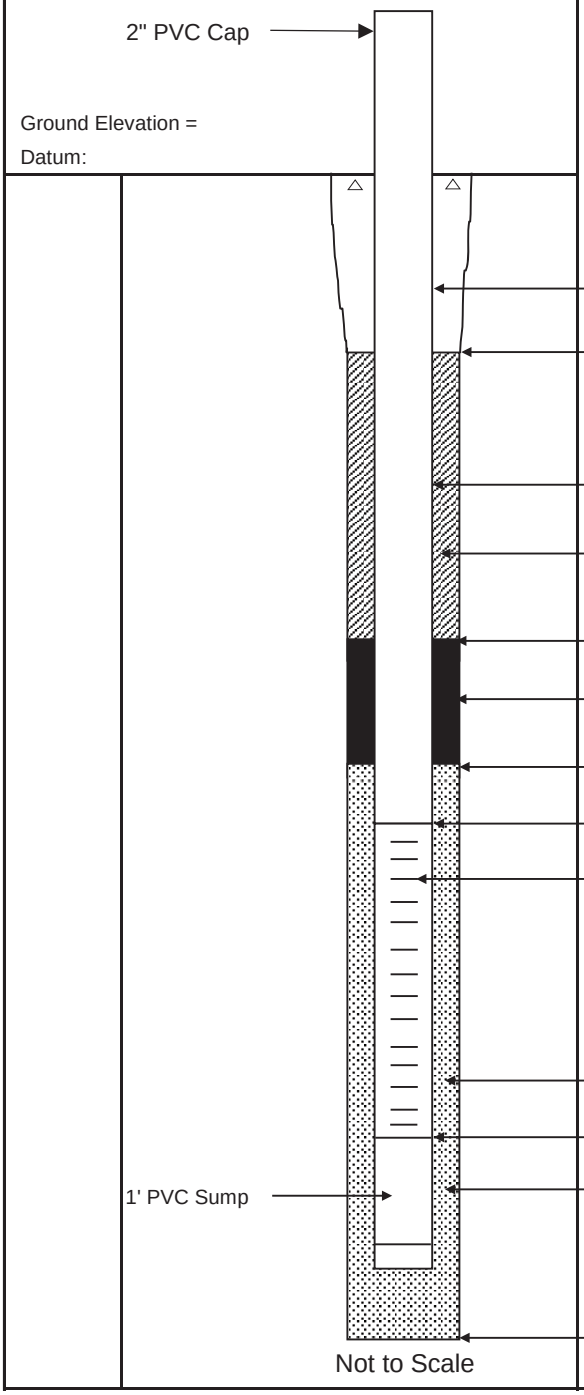
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0198

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0198
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



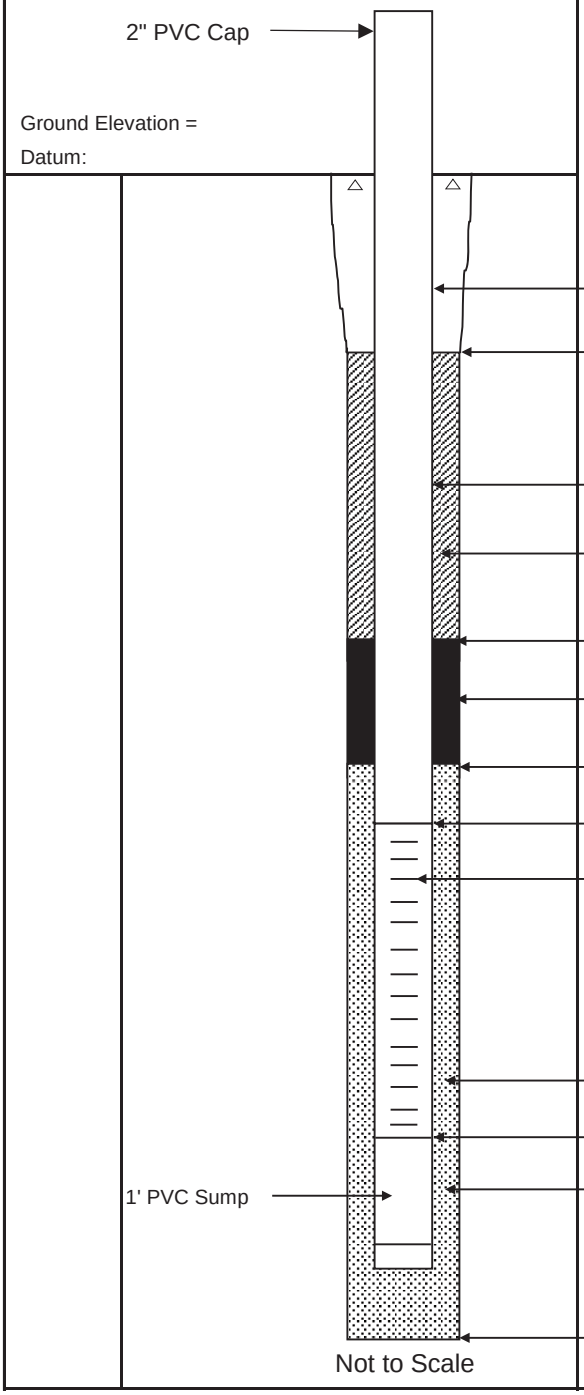
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0199

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0199
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



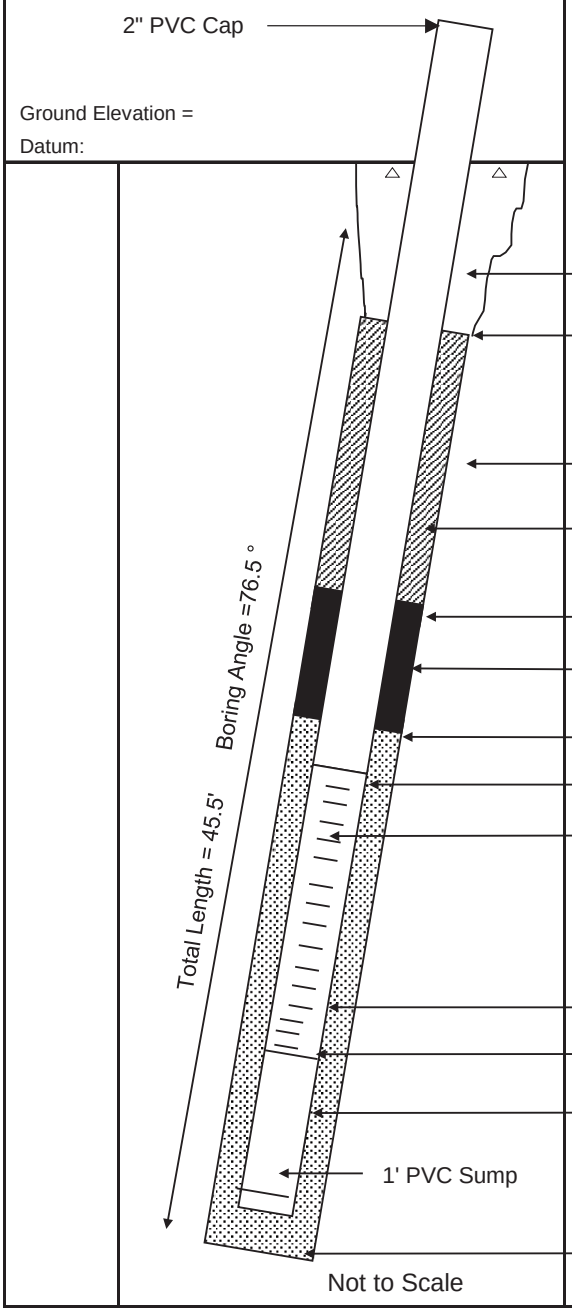
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0044

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0044
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



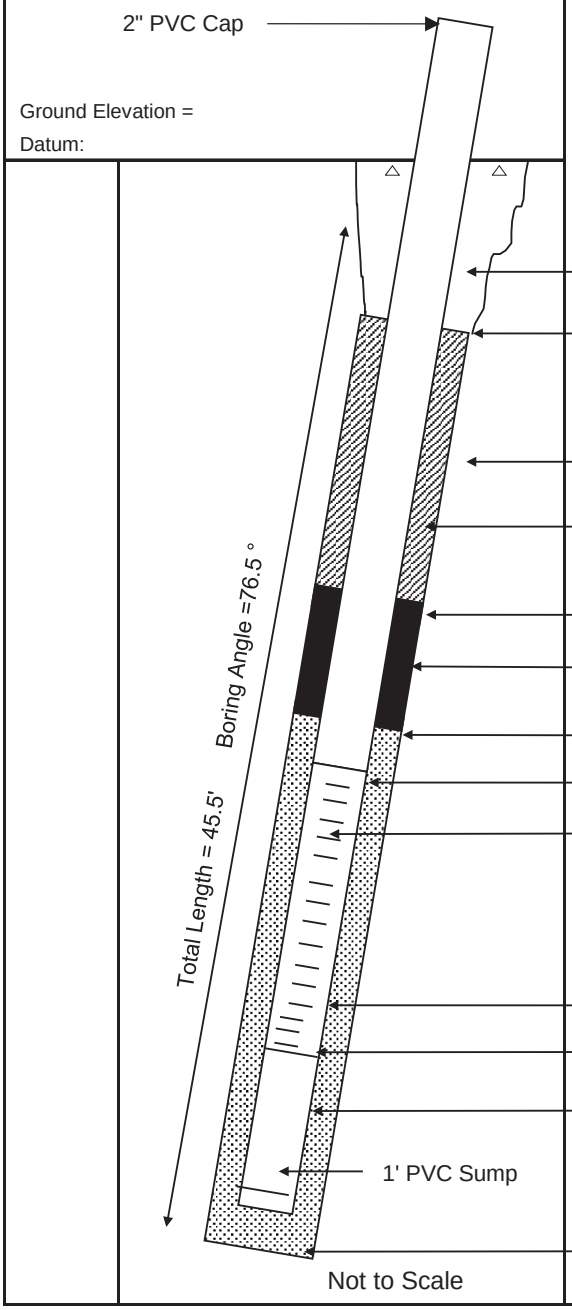
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0048

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0048
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



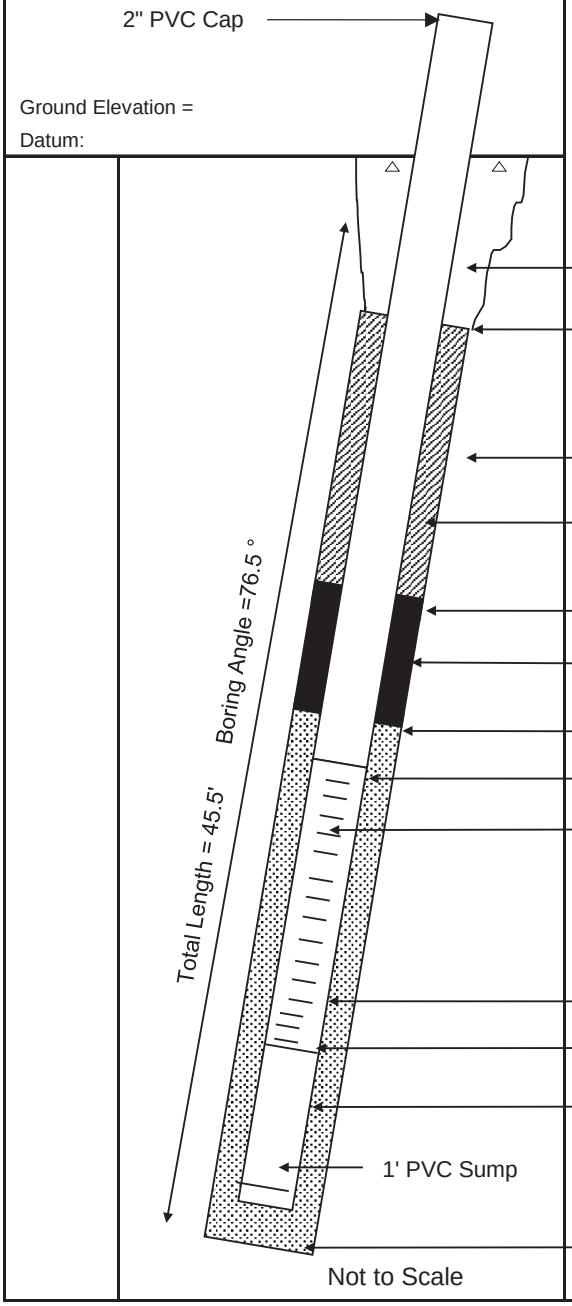
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0053

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0053
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



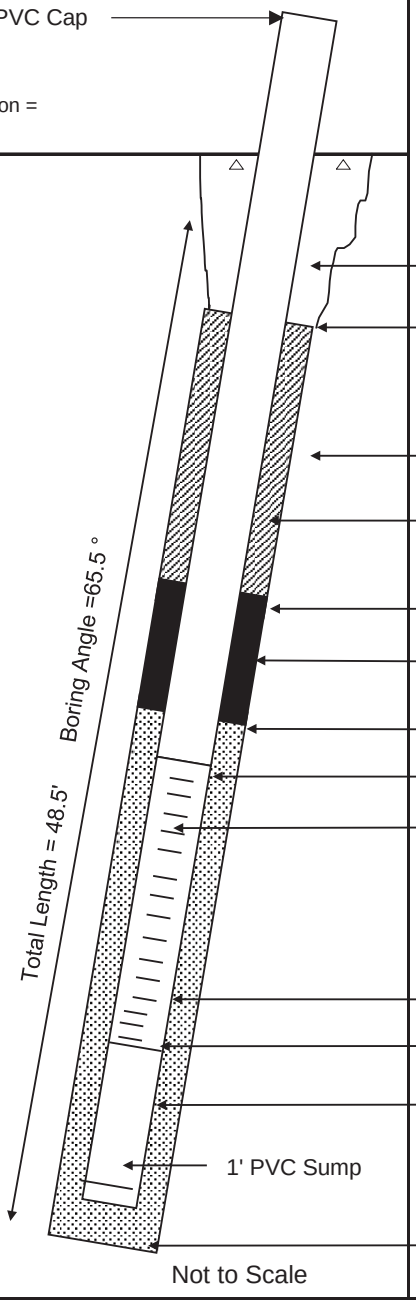
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0058

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0058
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



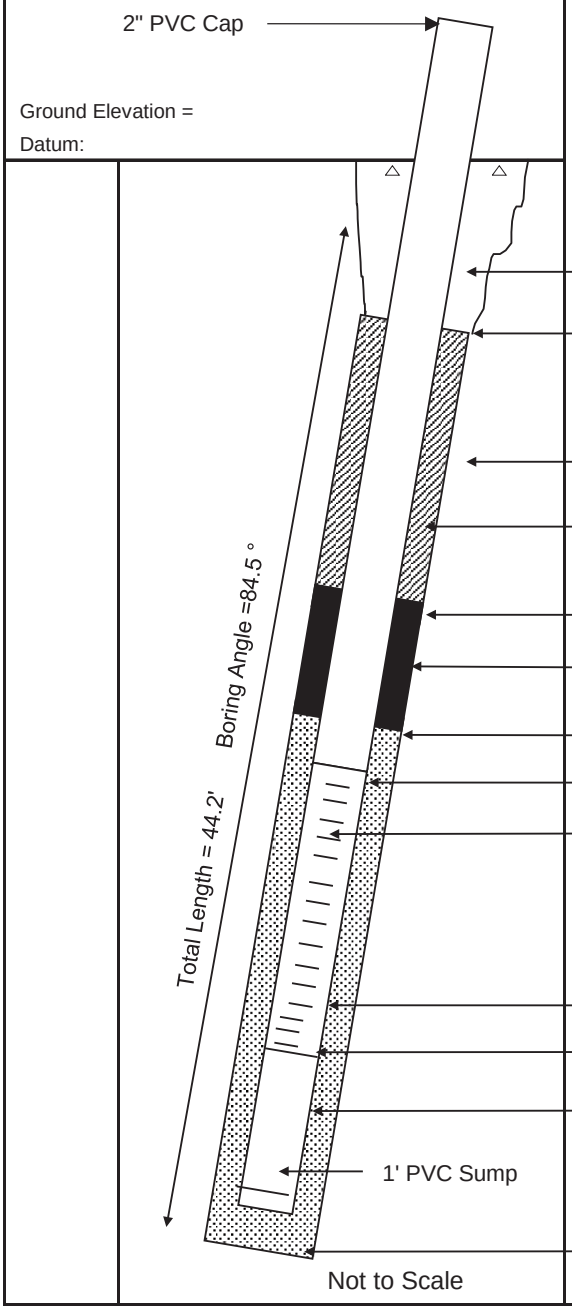
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0065

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0065
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



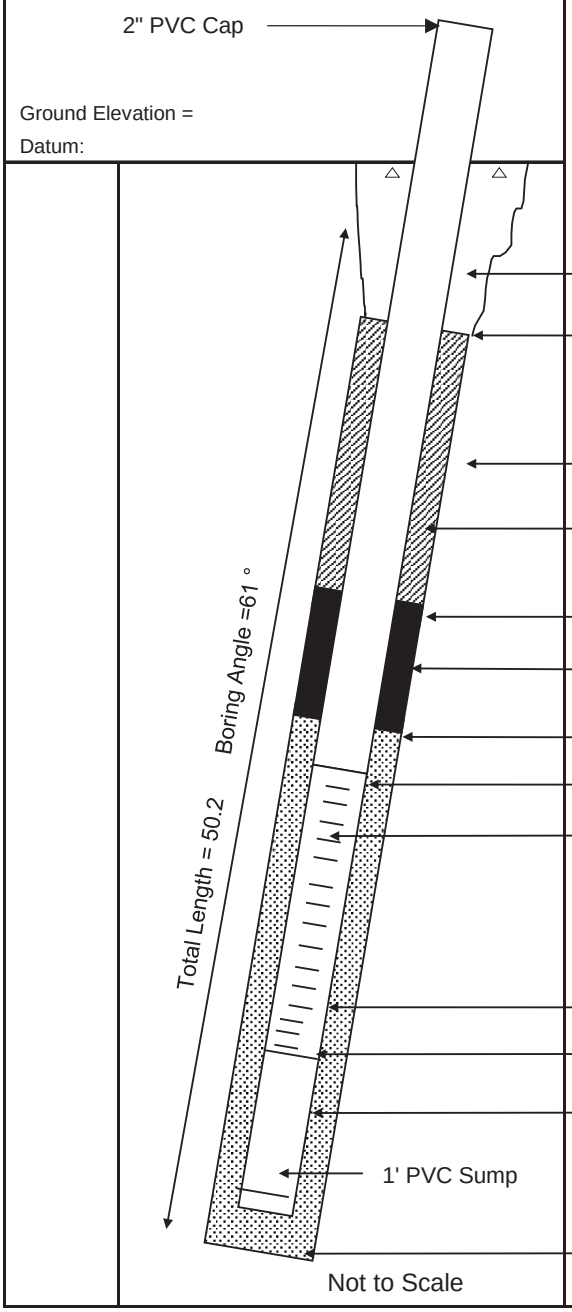
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0064

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0064
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



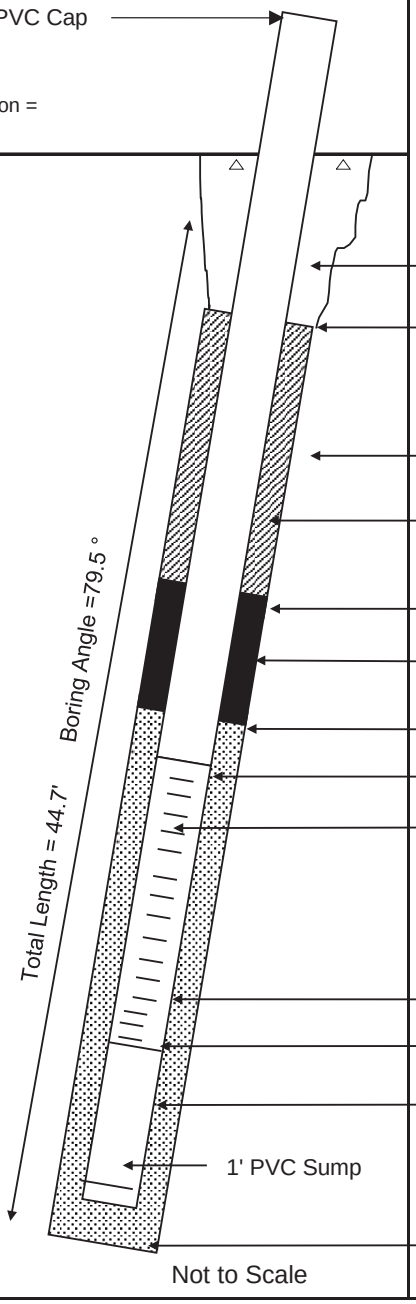
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0073

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0073
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



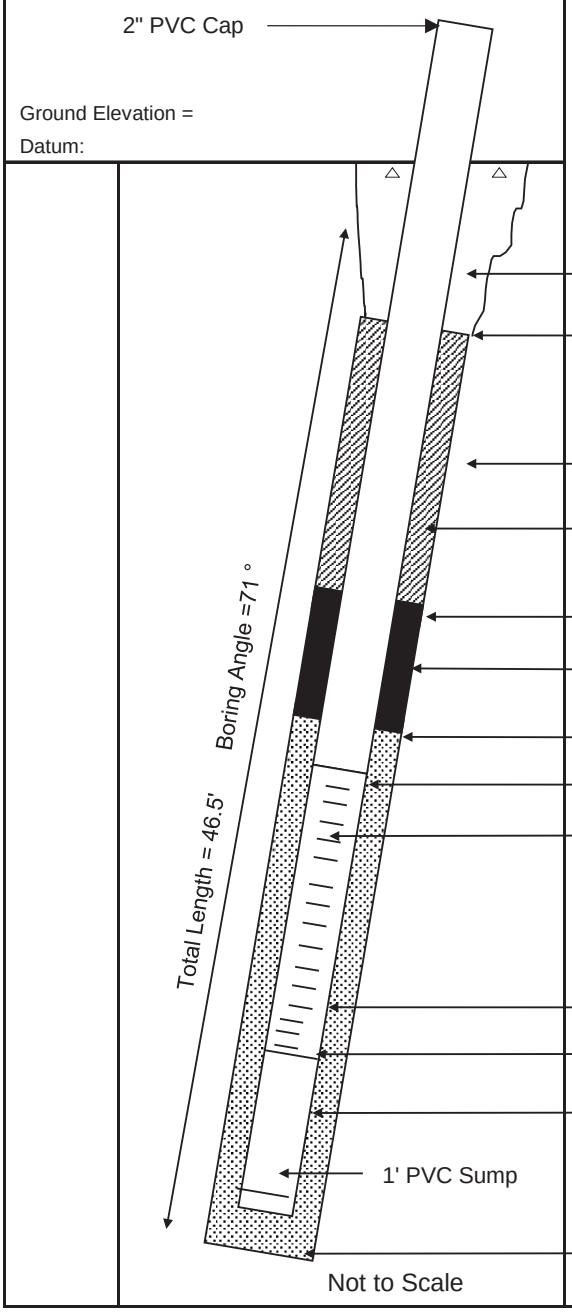
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0072

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0072
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



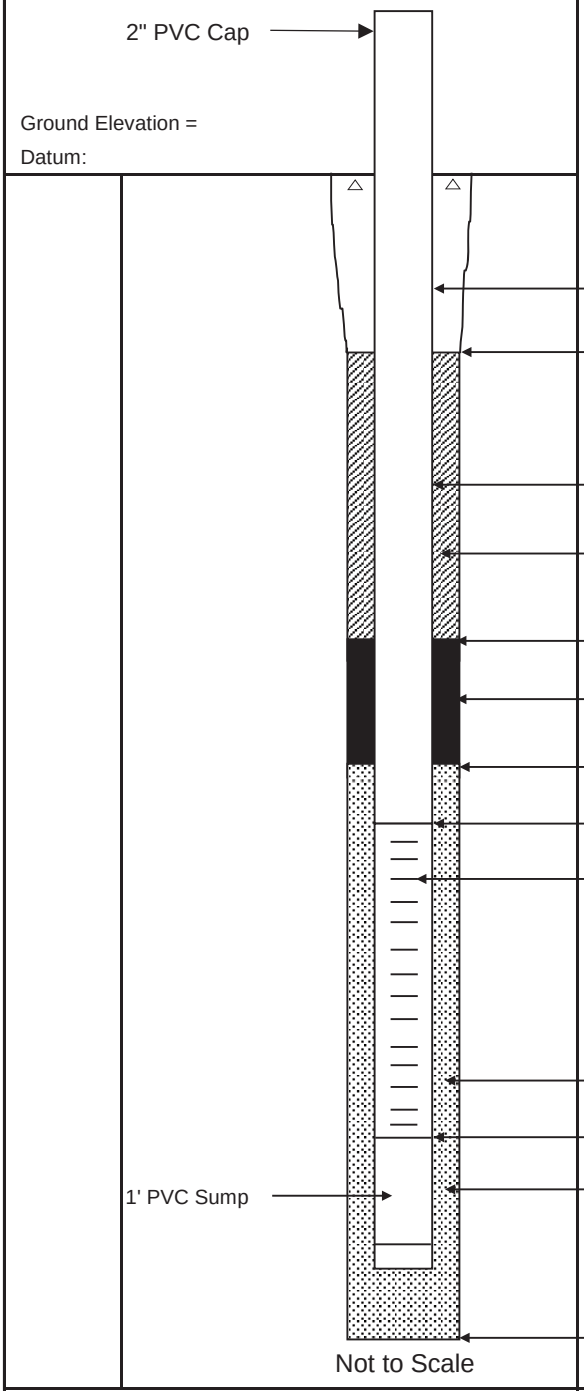
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0045

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0045
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



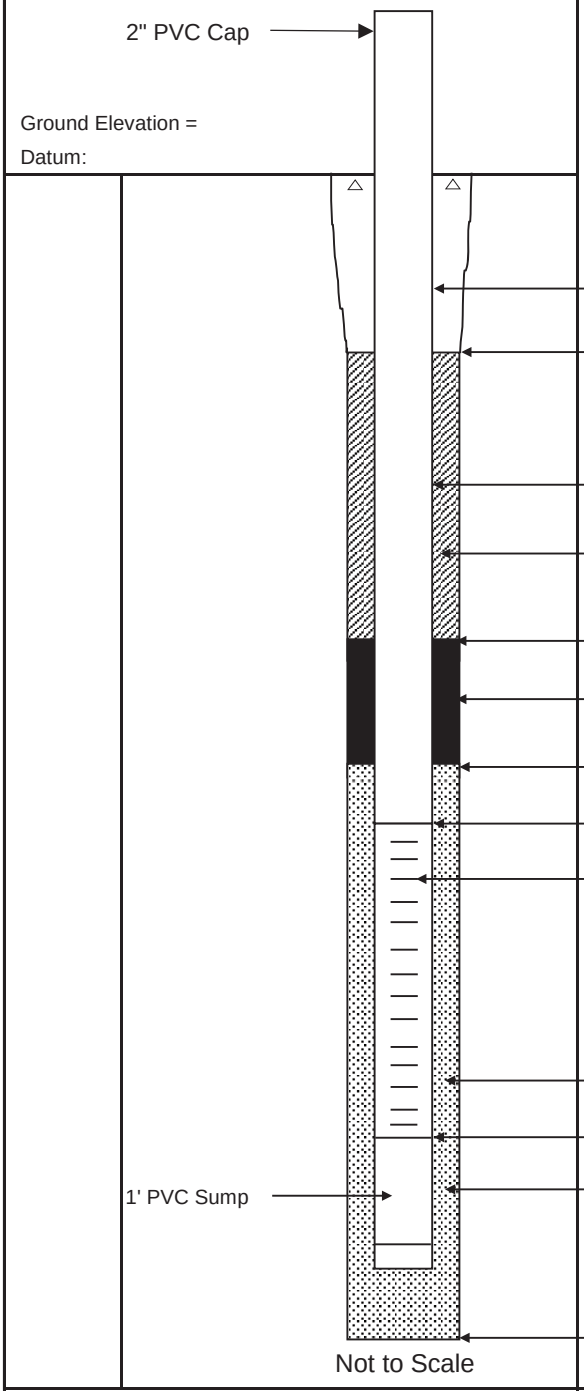
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0049

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0049
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



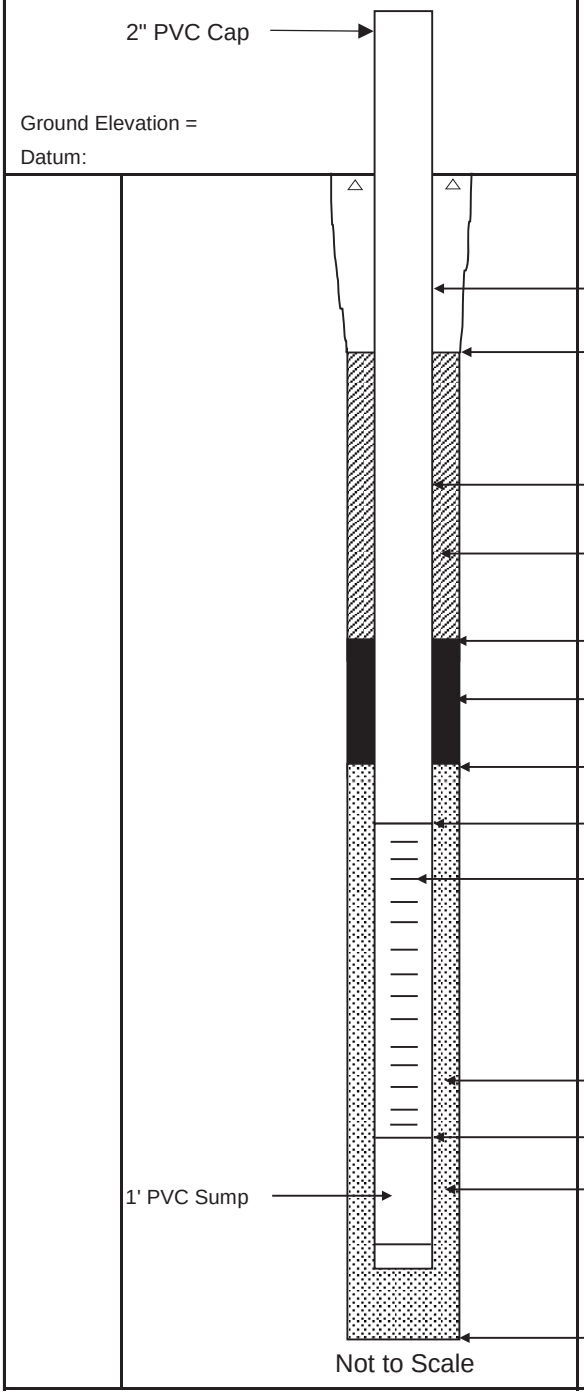
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0054

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0054
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



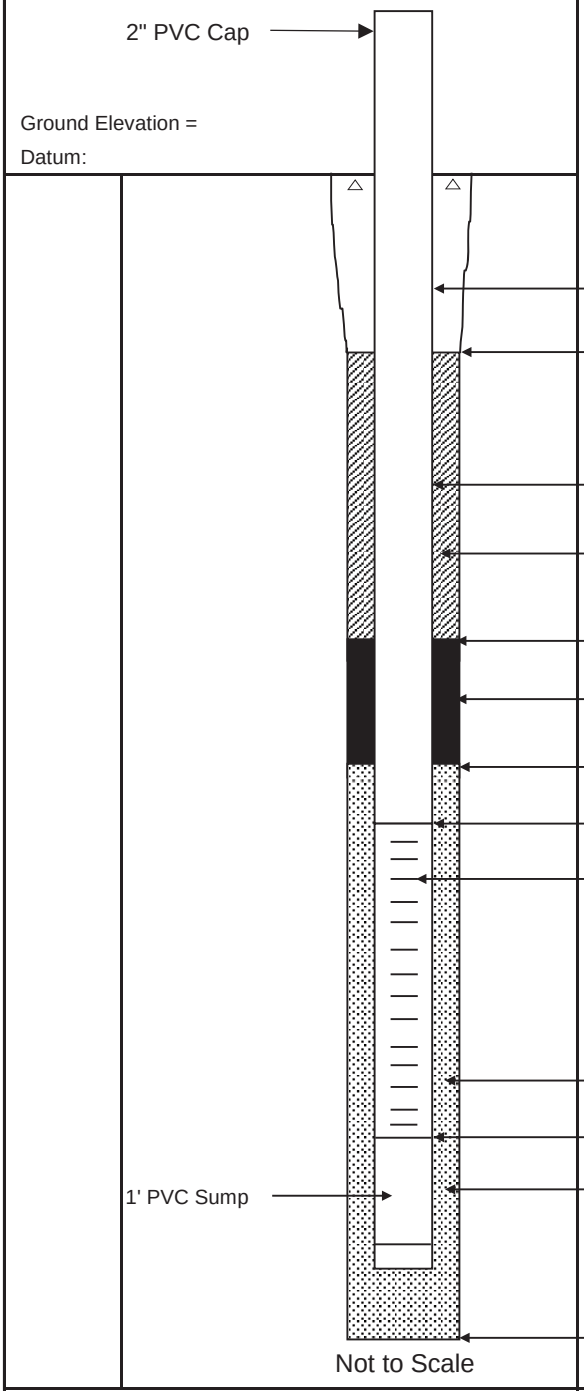
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0059

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0059
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



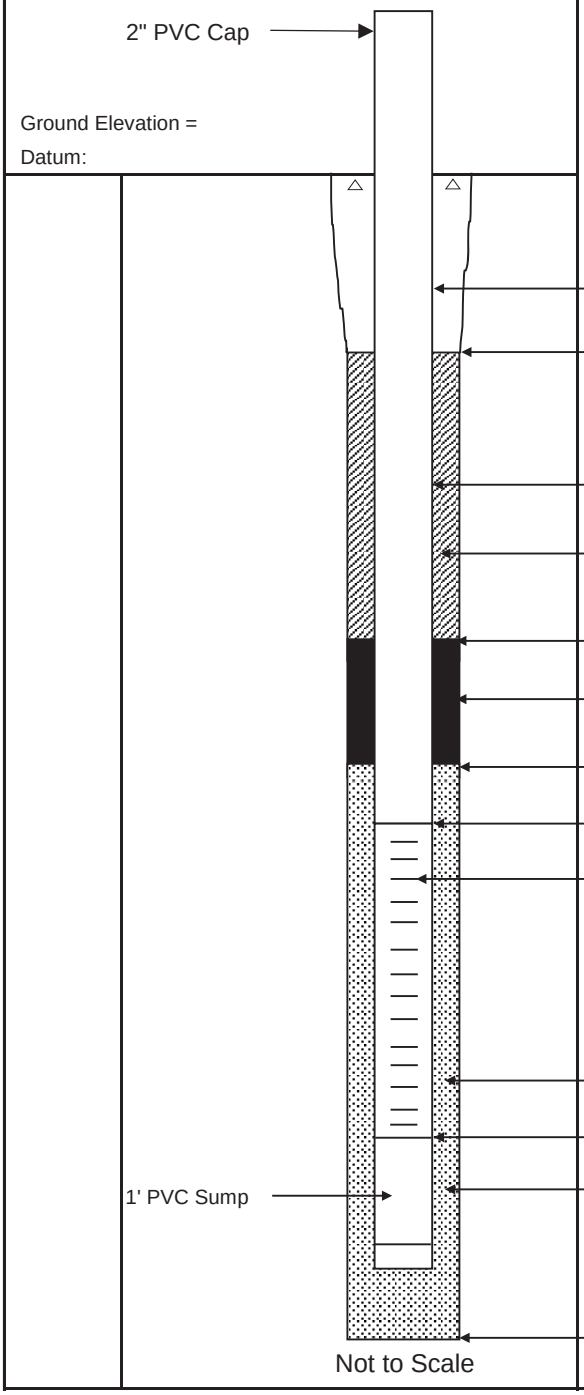
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0060

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0060
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



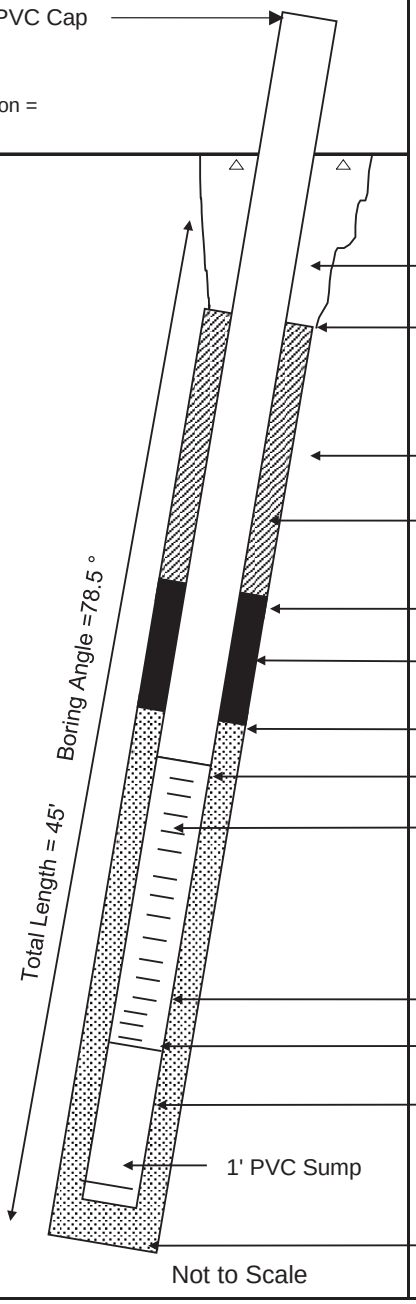
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0081

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0081
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



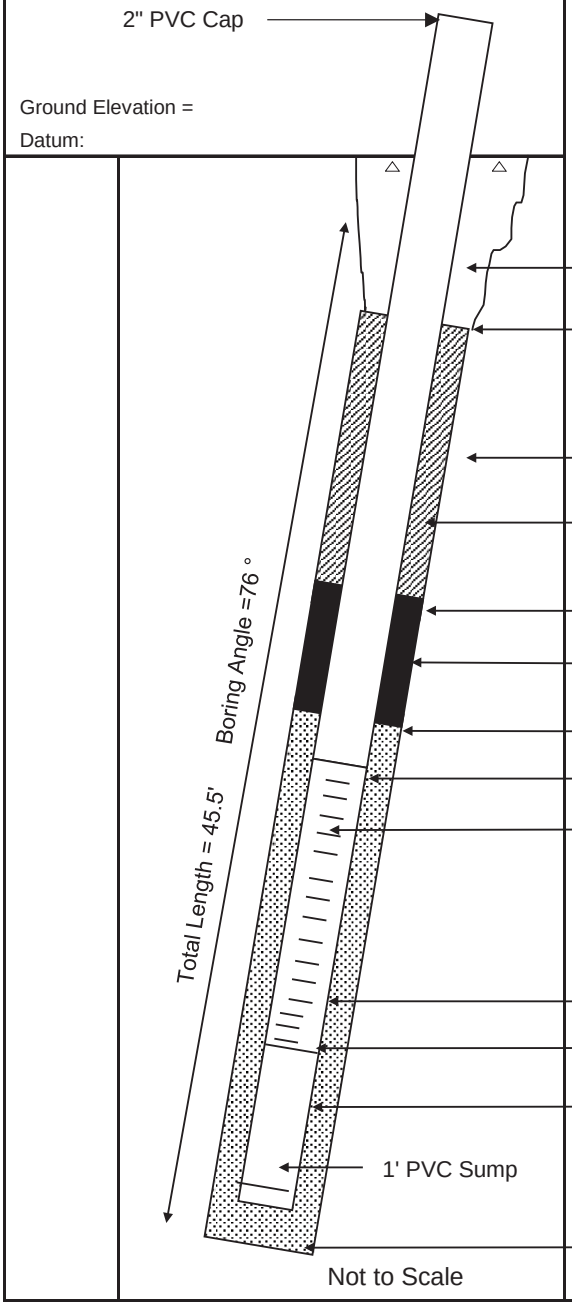
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0070

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0070
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



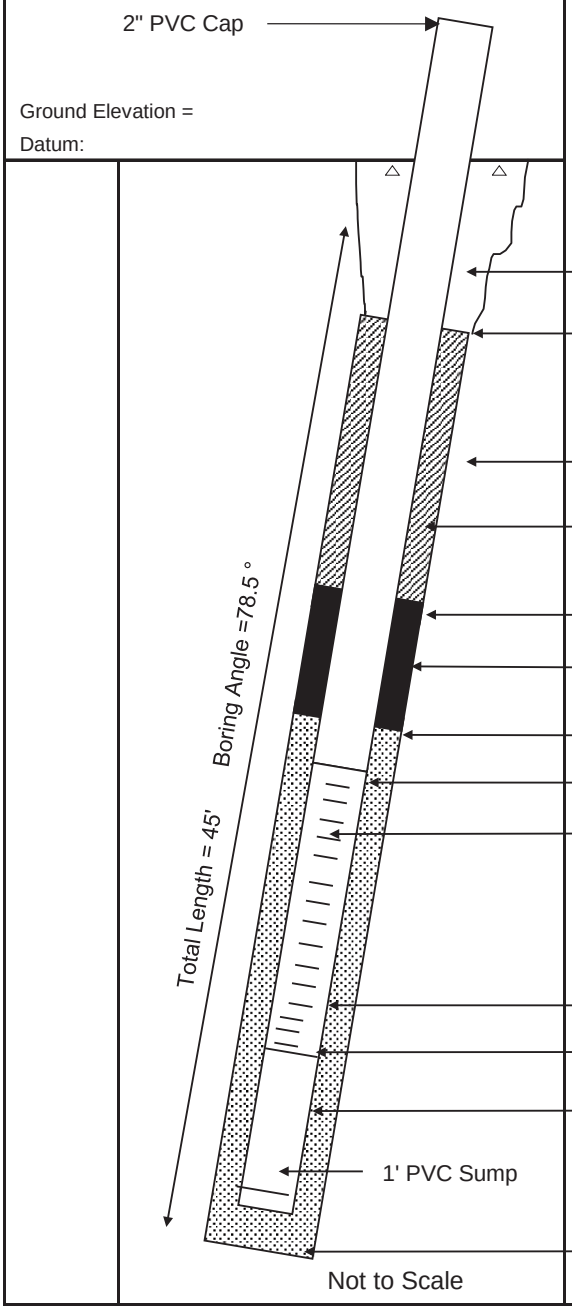
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0078

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0078
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



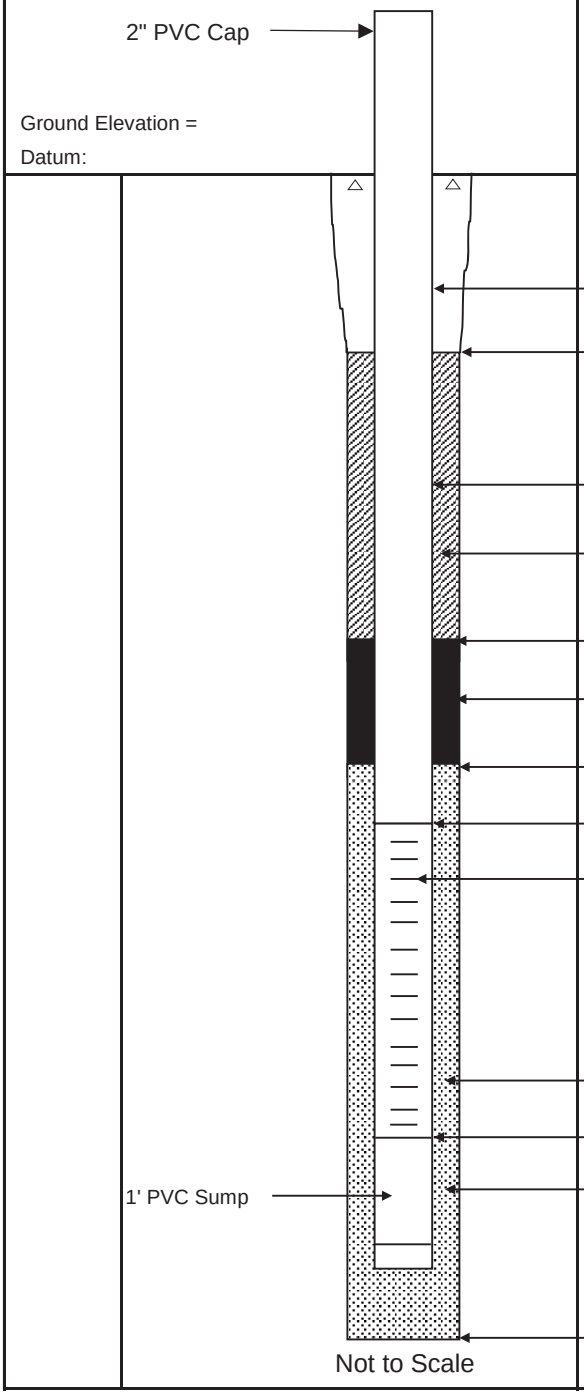
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0067

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0067
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



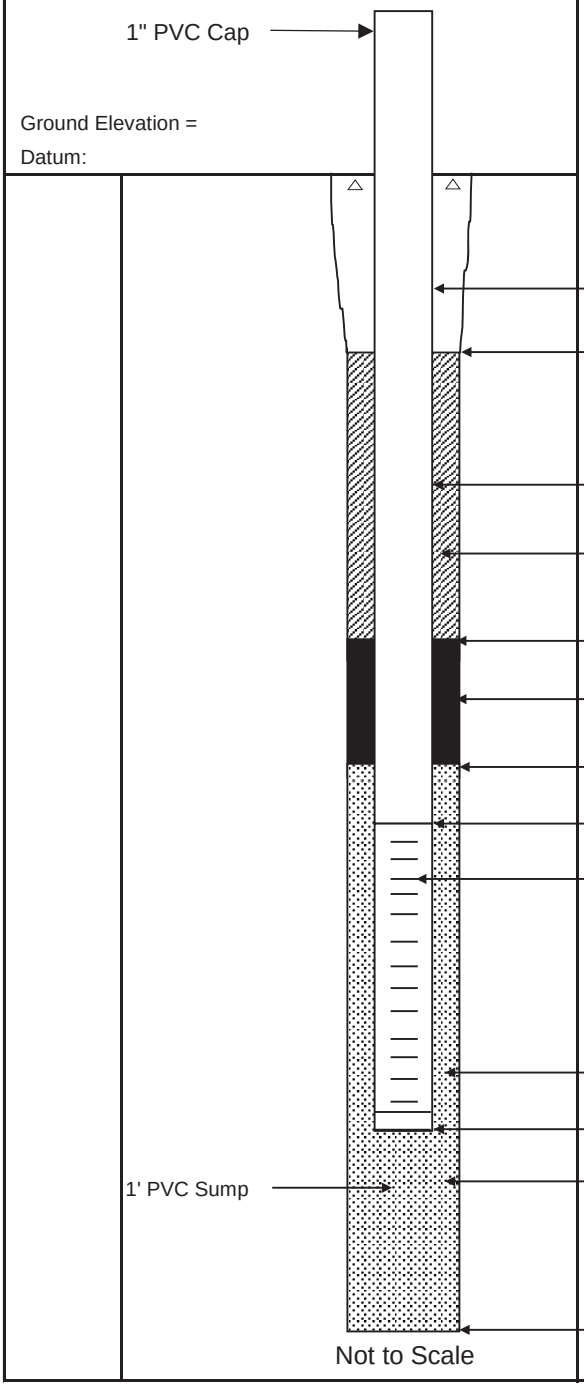
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0020

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0020
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



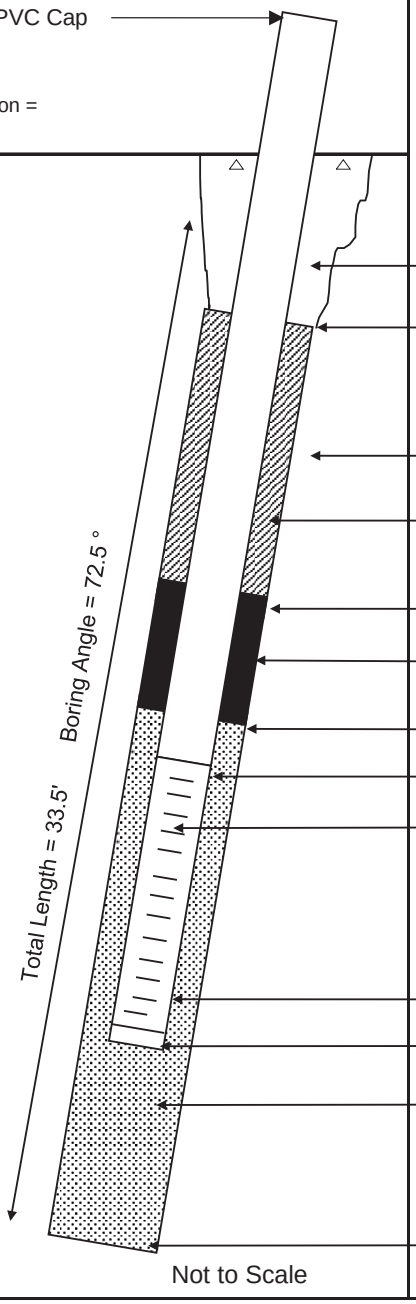
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 28.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 31.5'
Elevation / Depth of Top of Screen:		/ 32.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 34.0'
Elevation / Depth of Bottom of Filter Pack:		/ 34.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0019

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0019
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



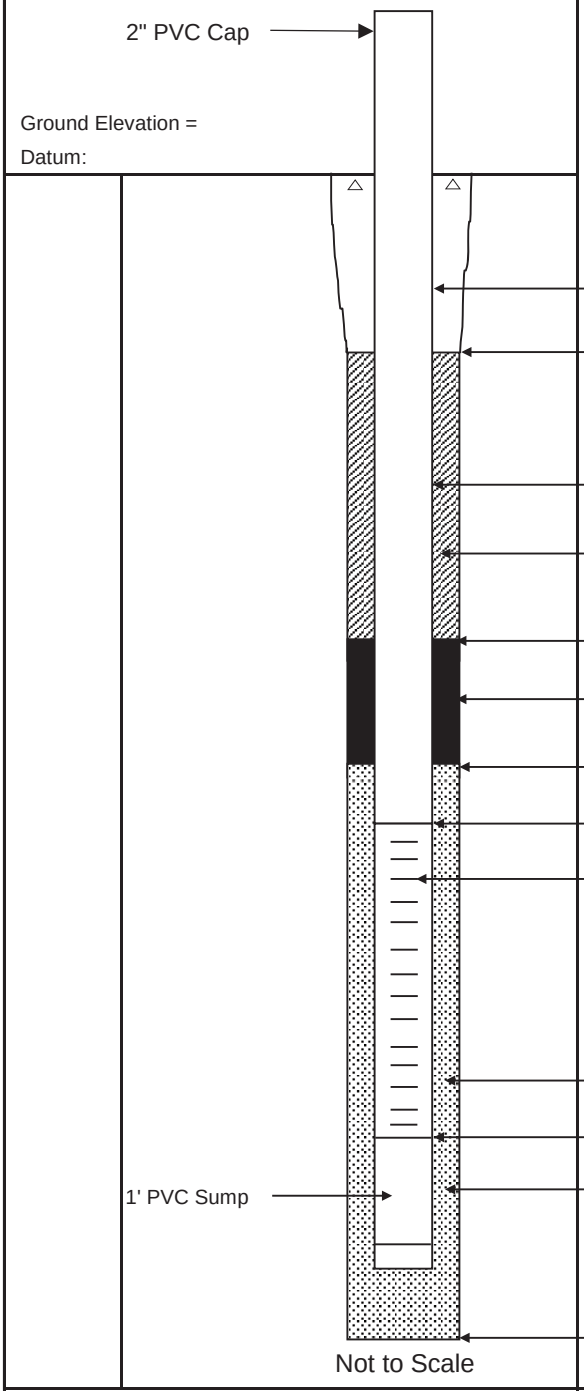
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:		
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0066

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0066
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



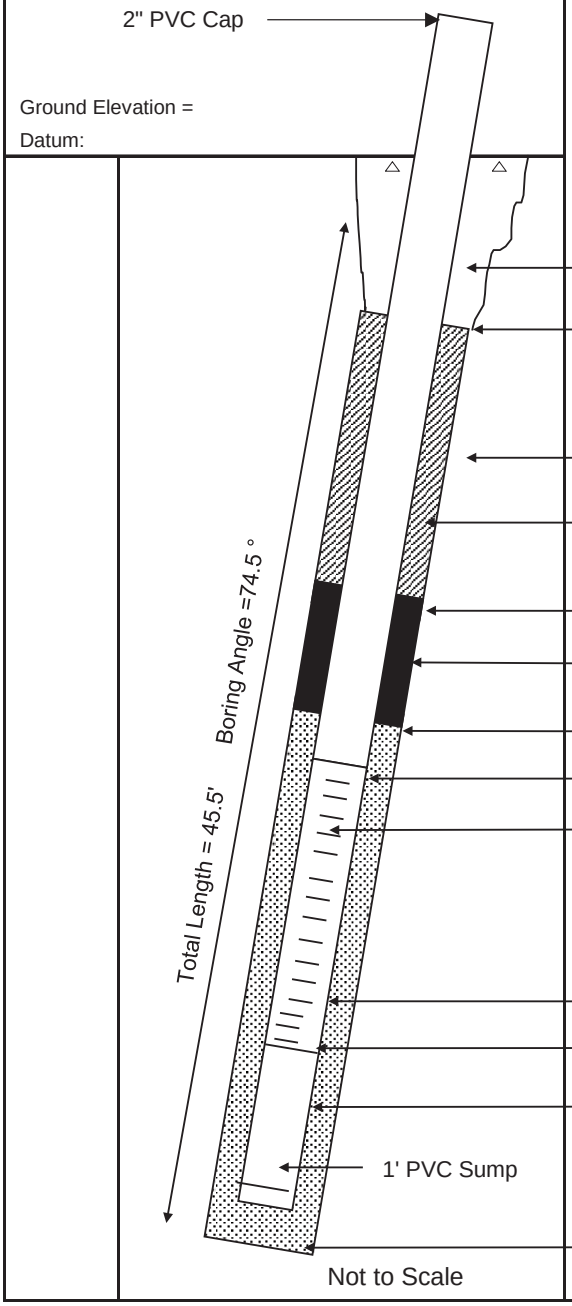
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 41.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 44.5'
Elevation / Depth of Top of Screen:		/ 45.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 47.0'
Elevation / Depth of Bottom of Filter Pack:		/ 48.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0172

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0172
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



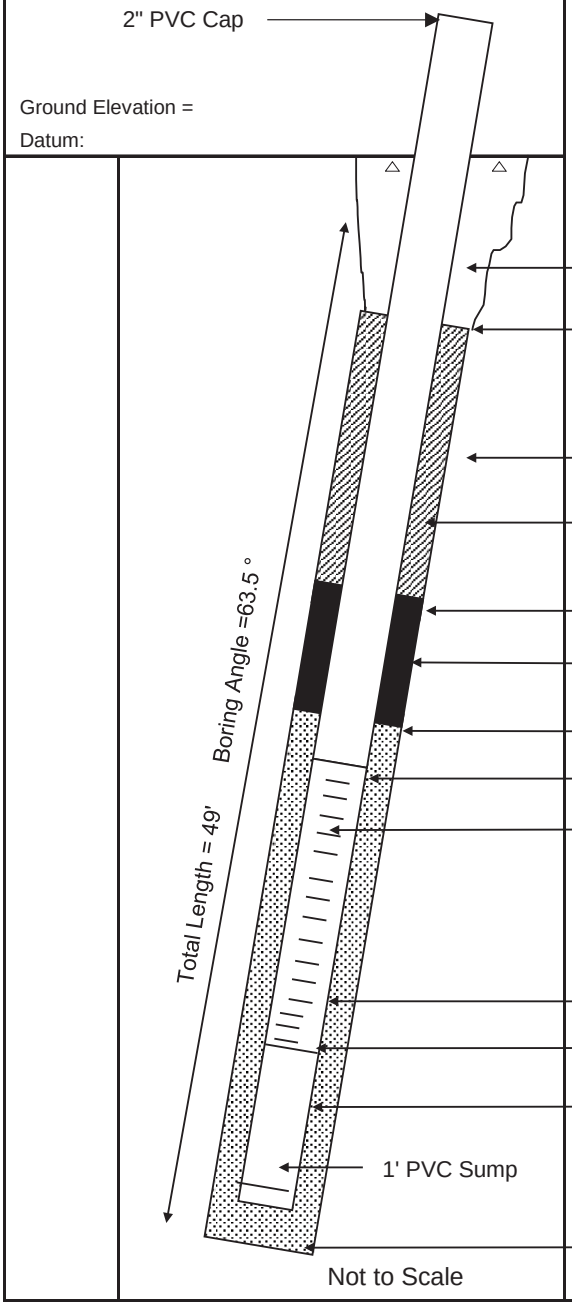
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0176

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0176
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



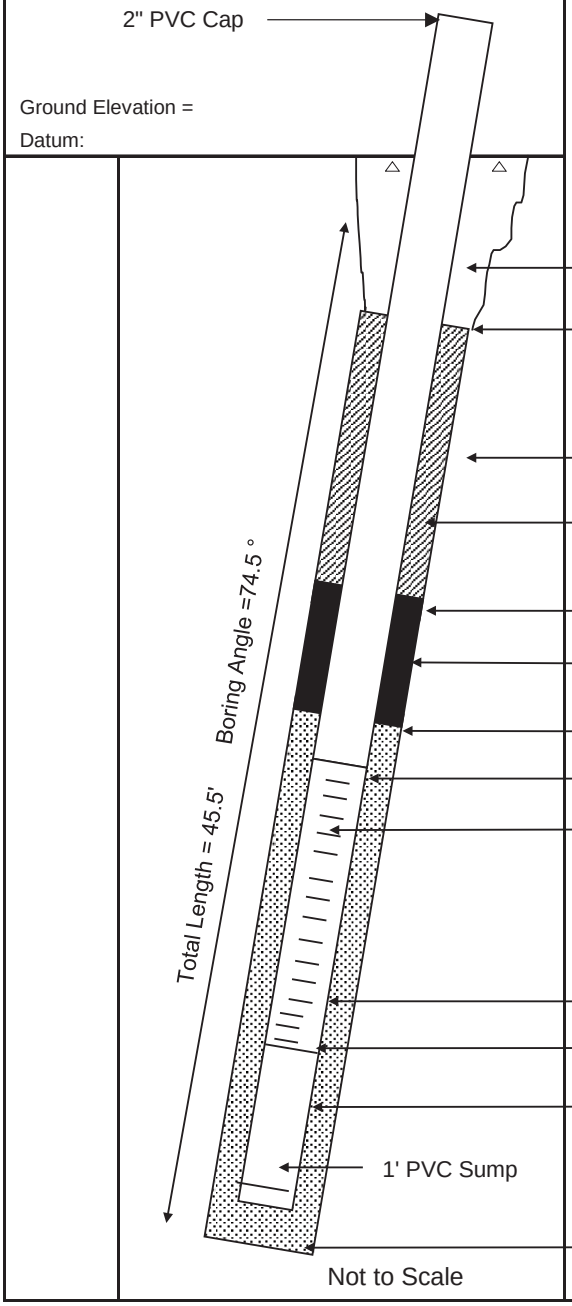
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0175

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0175
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



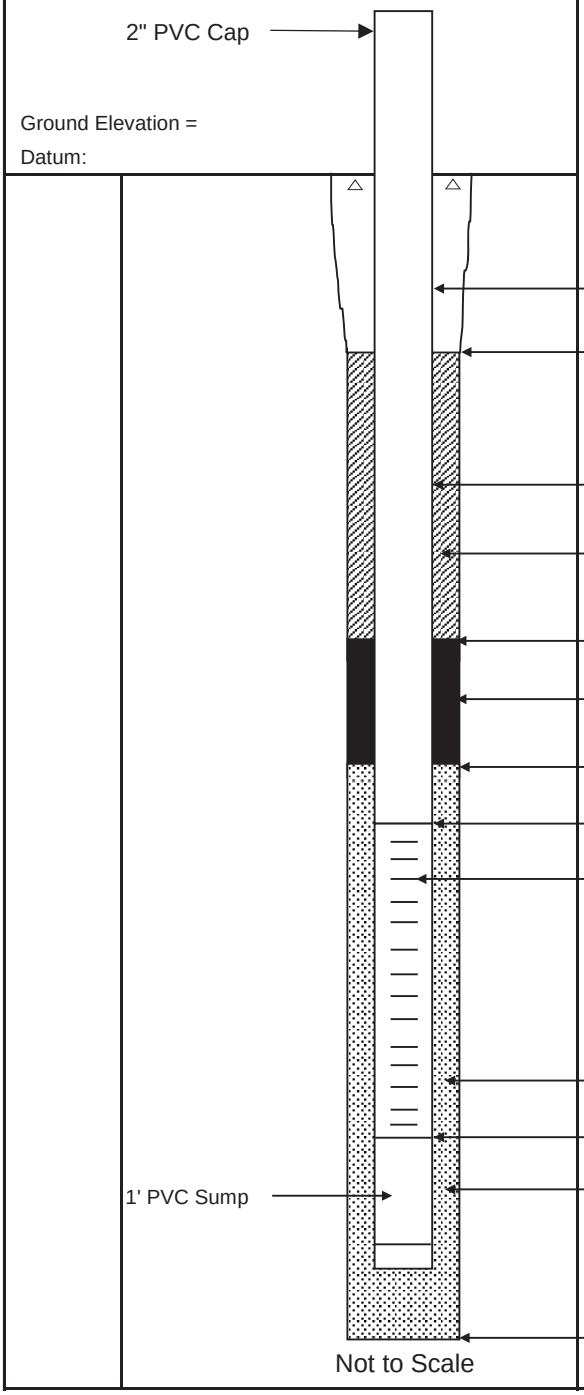
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0170

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0170
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



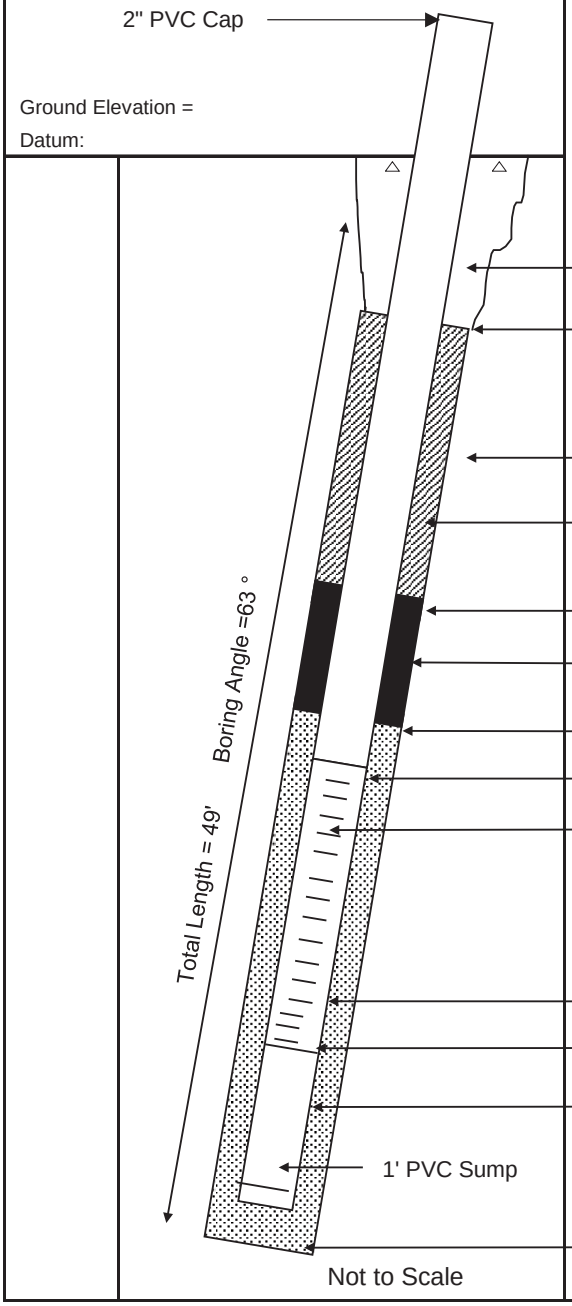
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0179

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0179
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



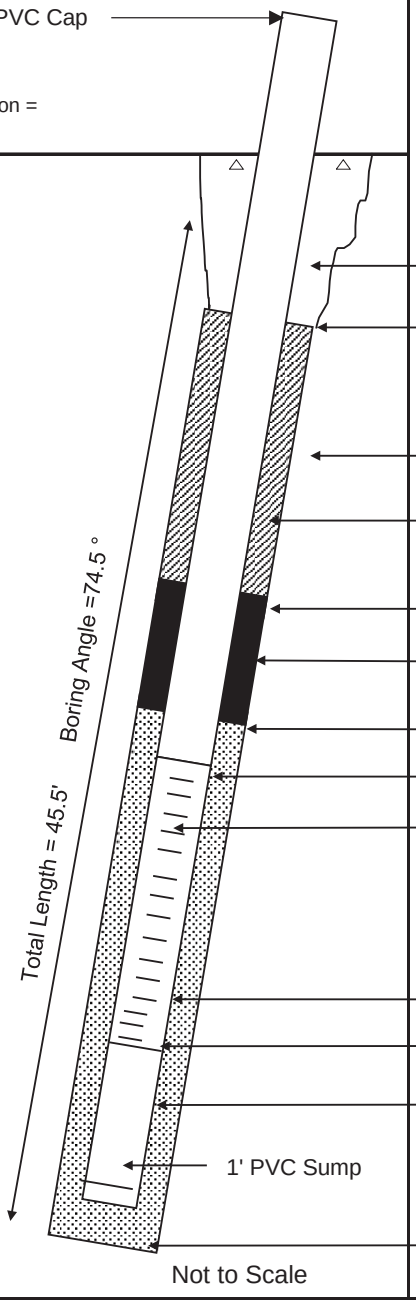
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0178

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0178
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



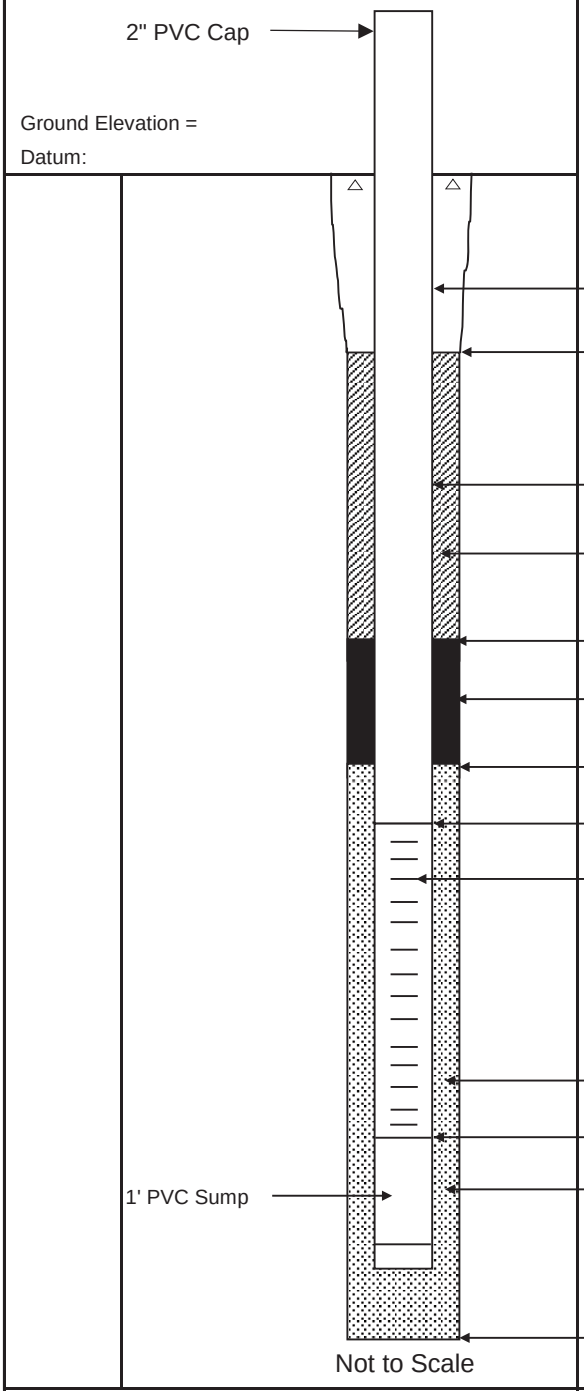
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0174

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0174
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



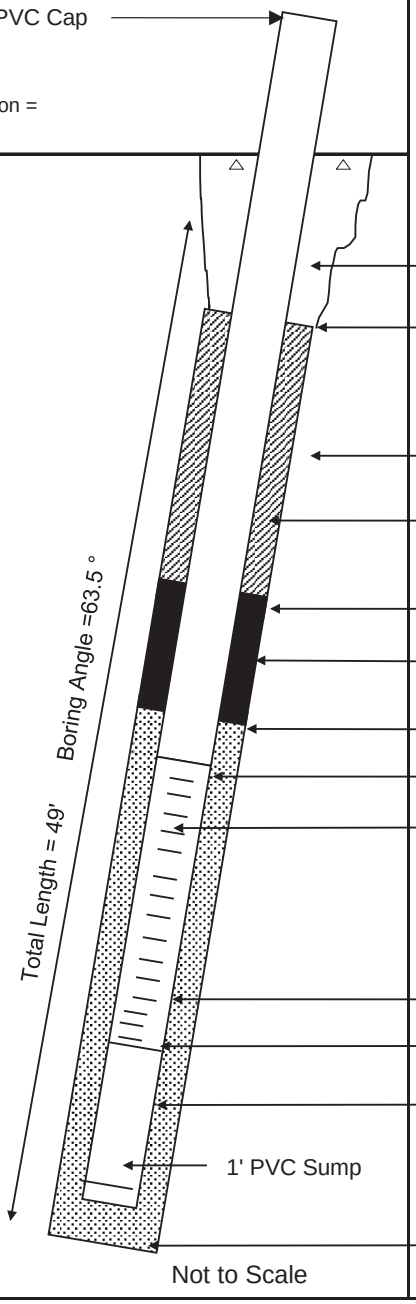
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0182

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0182
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



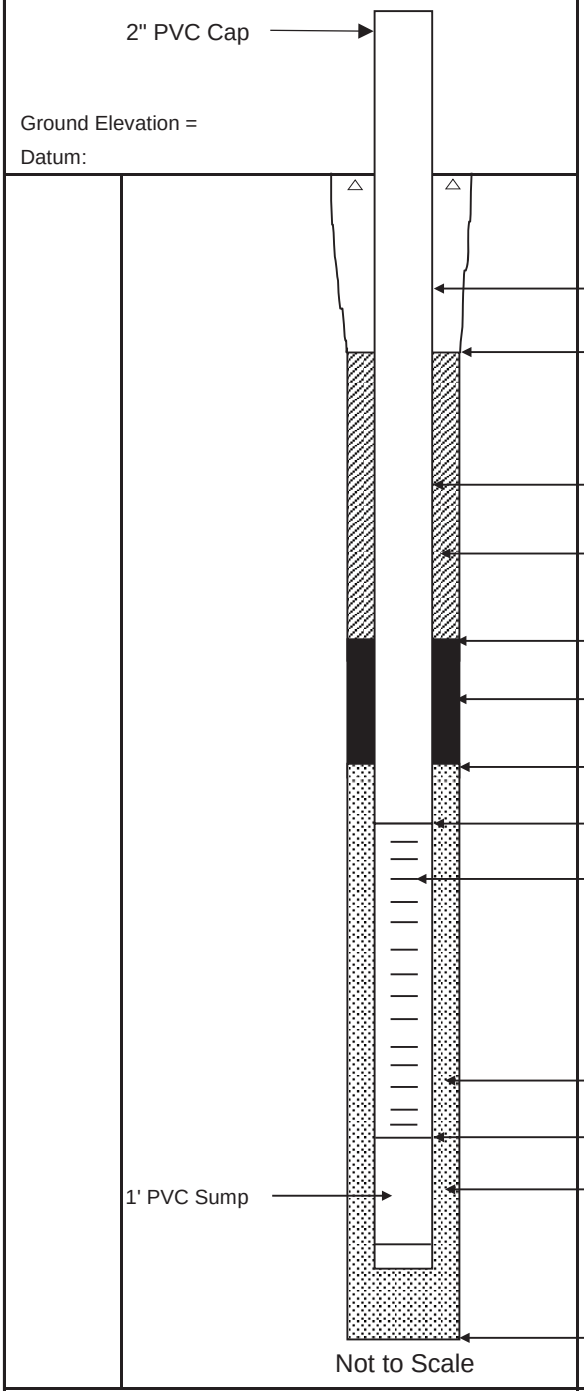
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0054

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0054
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



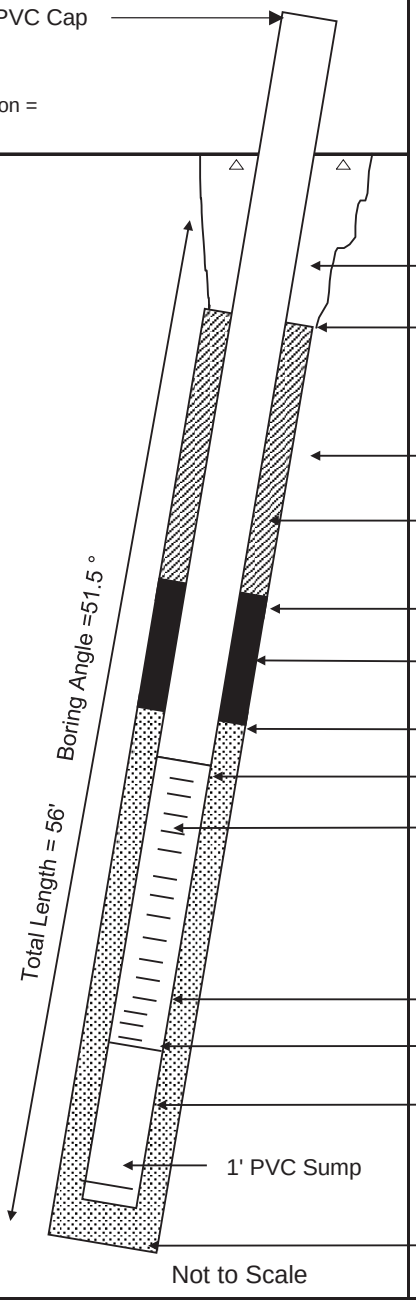
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0208

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0208
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



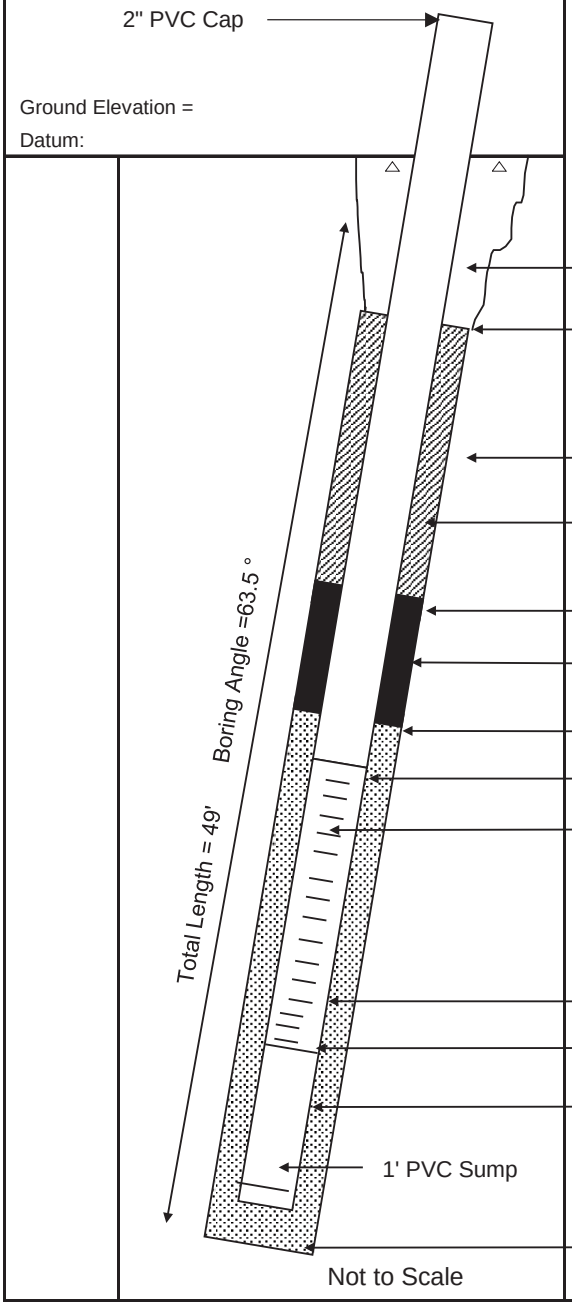
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0207

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0207
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



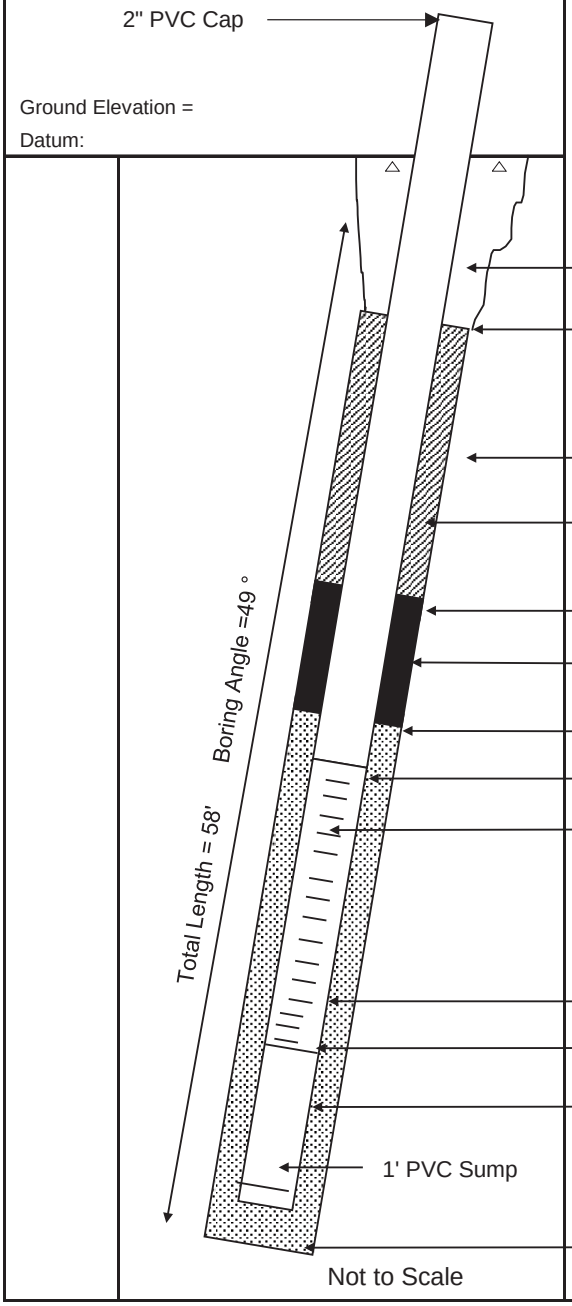
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0209

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0209
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



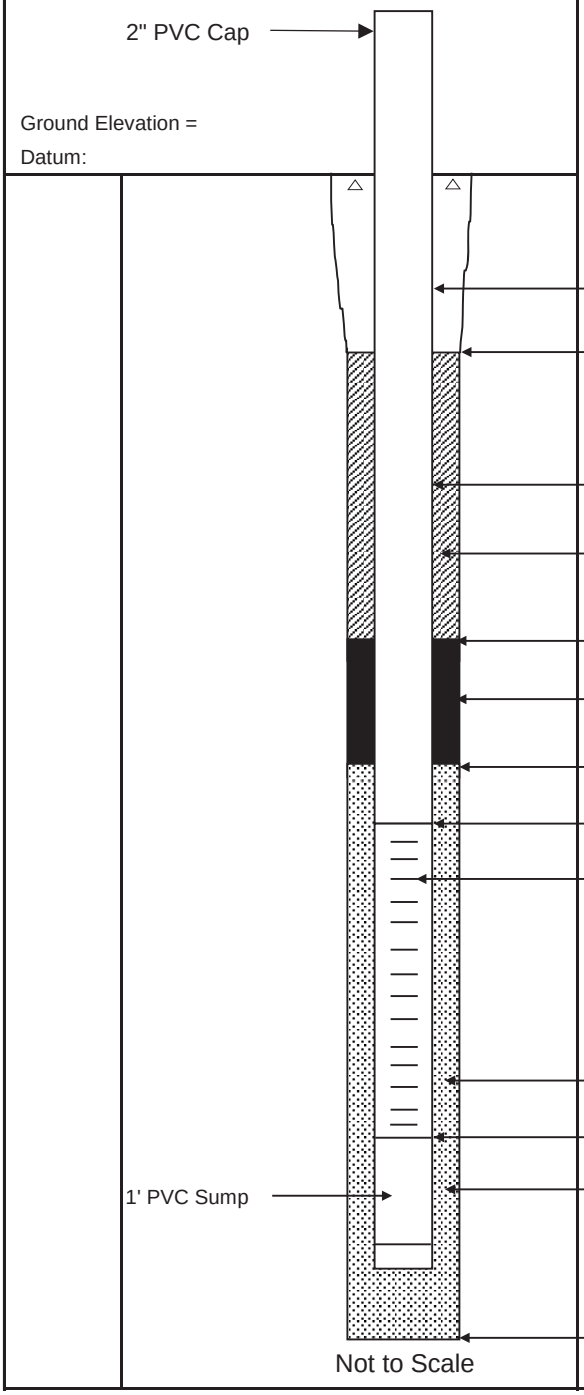
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0203

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0203
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



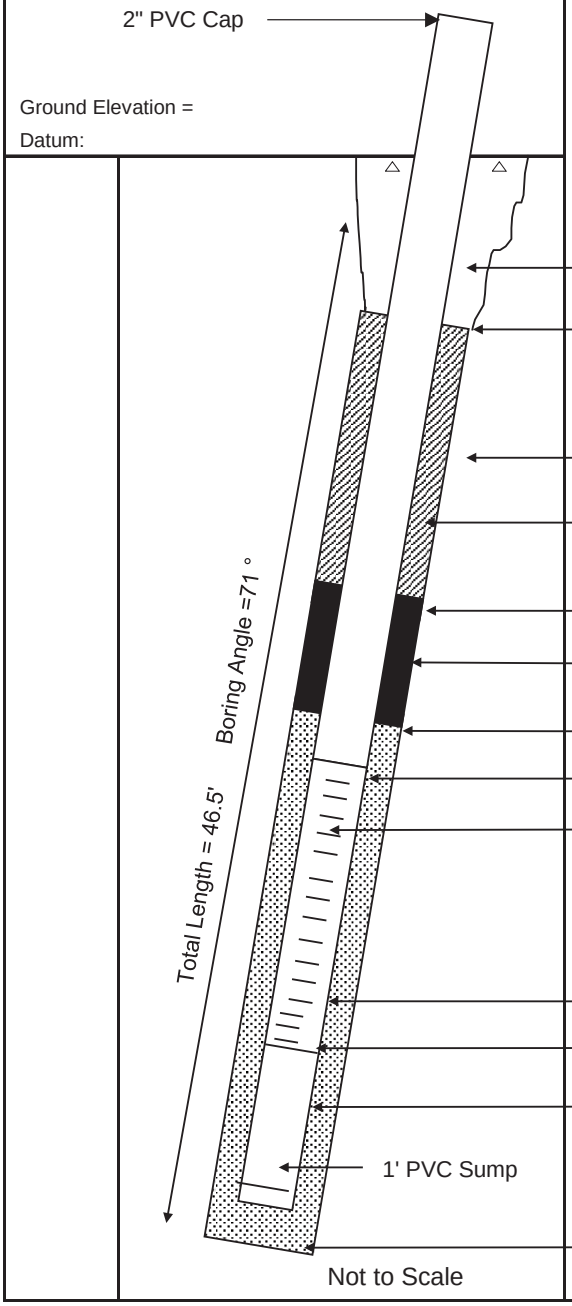
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0140

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0140
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



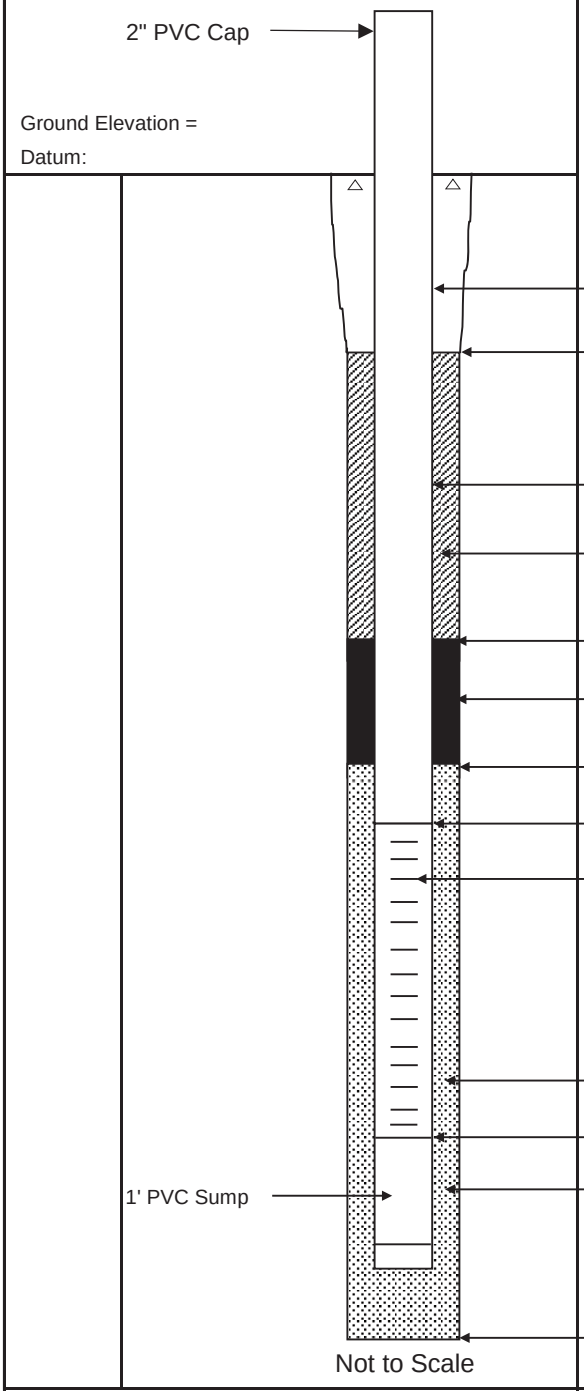
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0071

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0071
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/10/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



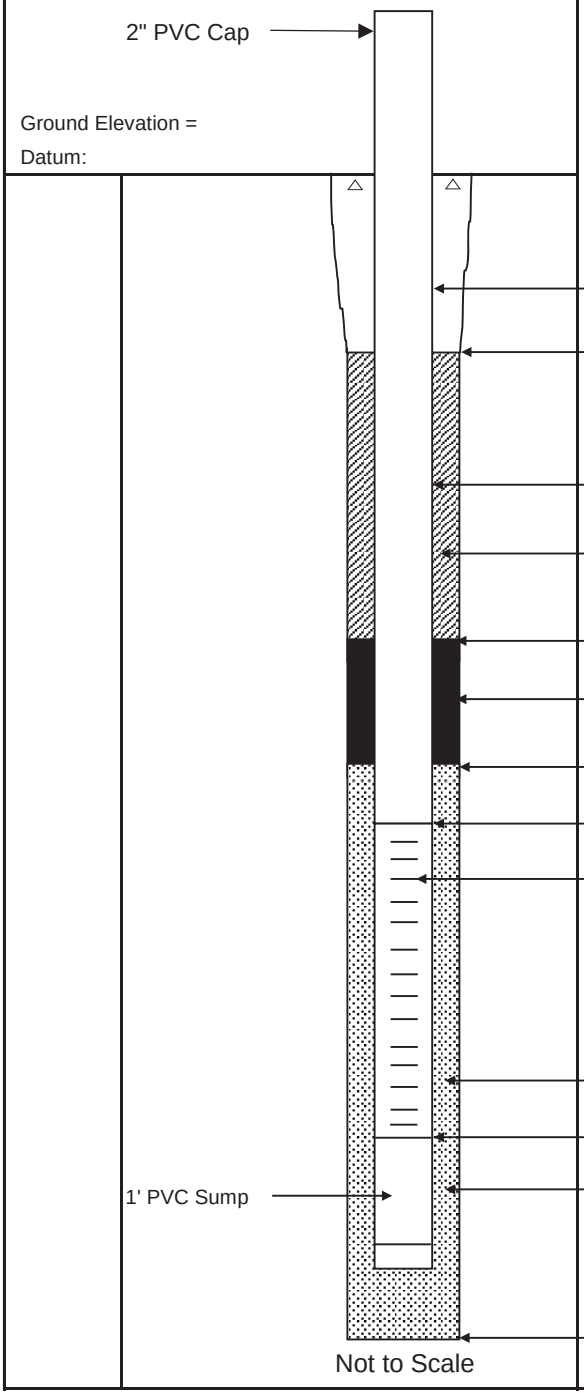
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0079

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0079
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/10/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



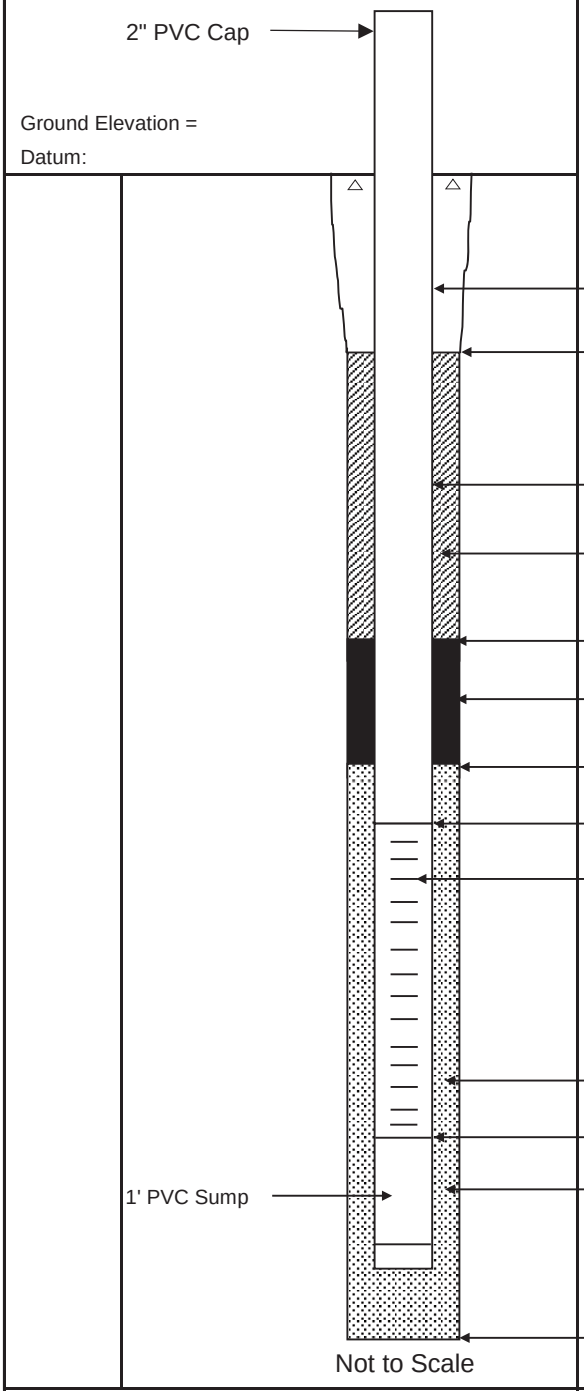
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 40.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 43.0'
Elevation / Depth of Top of Screen:		/ 43.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.5'
Elevation / Depth of Bottom of Filter Pack:		/ 46.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0080

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0080
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/10/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



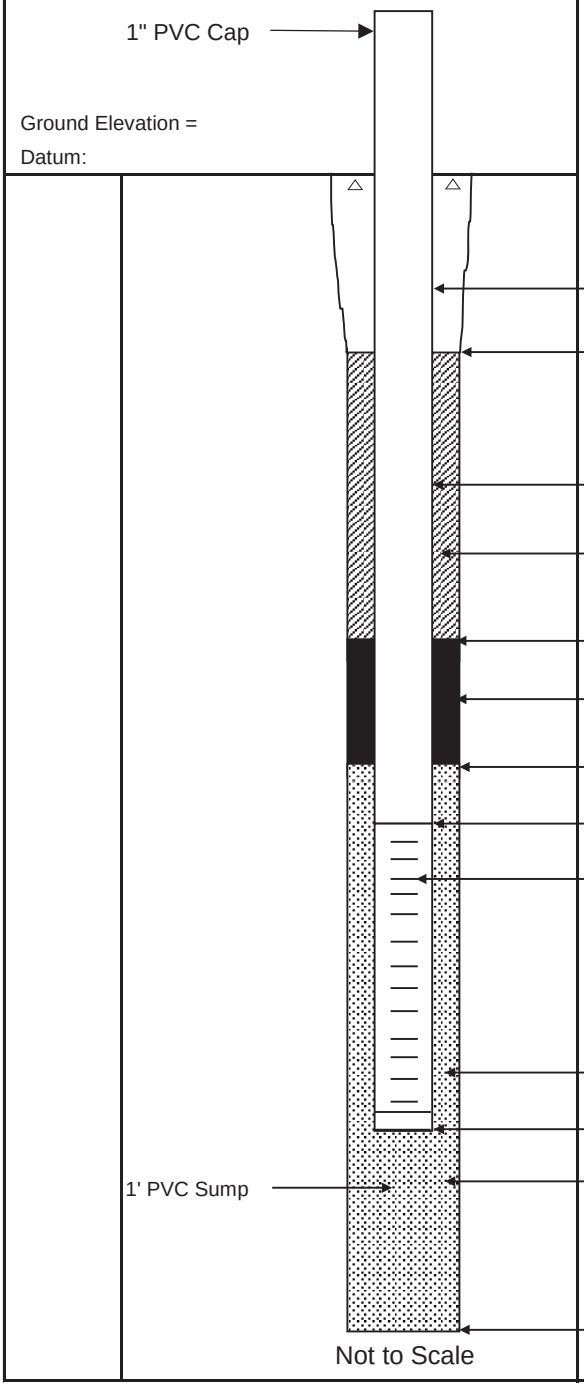
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 40.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 43.0'
Elevation / Depth of Top of Screen:		/ 43.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.5'
Elevation / Depth of Bottom of Filter Pack:		/ 46.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0022

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0022
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/13/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



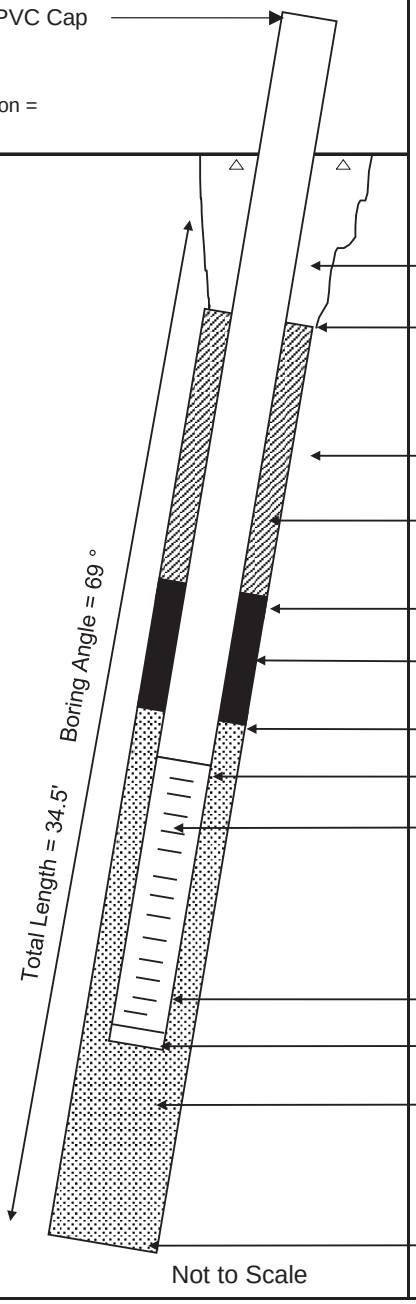
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 29.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 32.5'
Elevation / Depth of Top of Screen:		/ 33.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 35.0'
Elevation / Depth of Bottom of Filter Pack:		/ 35.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0021

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0021
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/13/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



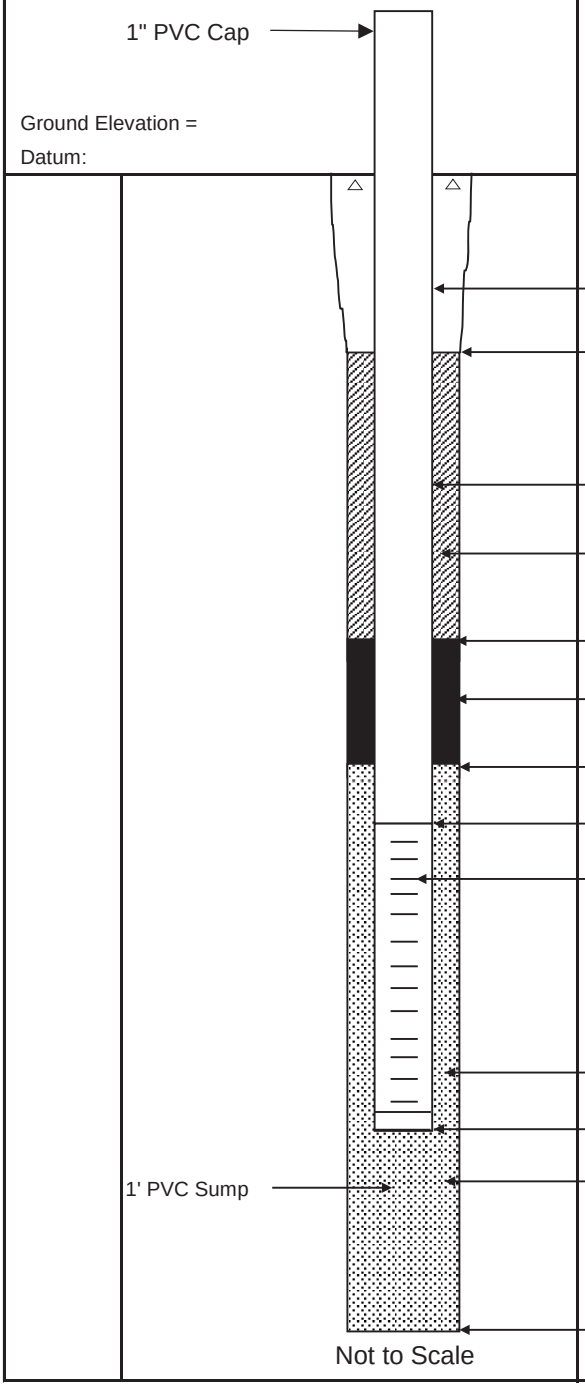
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0028

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0028
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/13/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



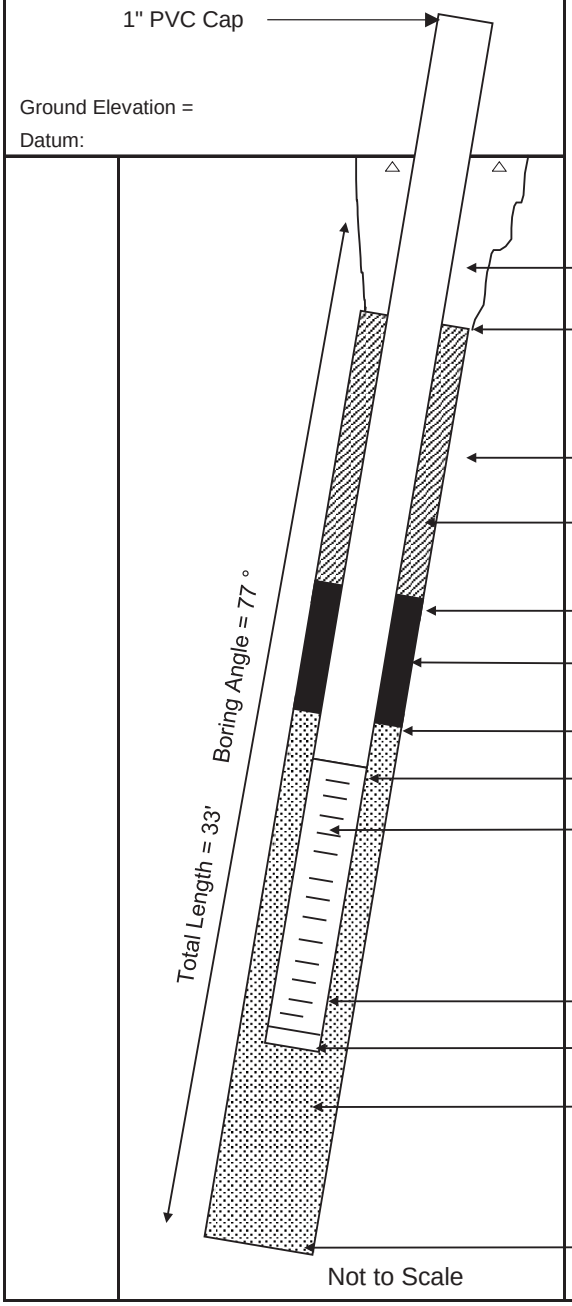
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0023

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0023
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/13/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



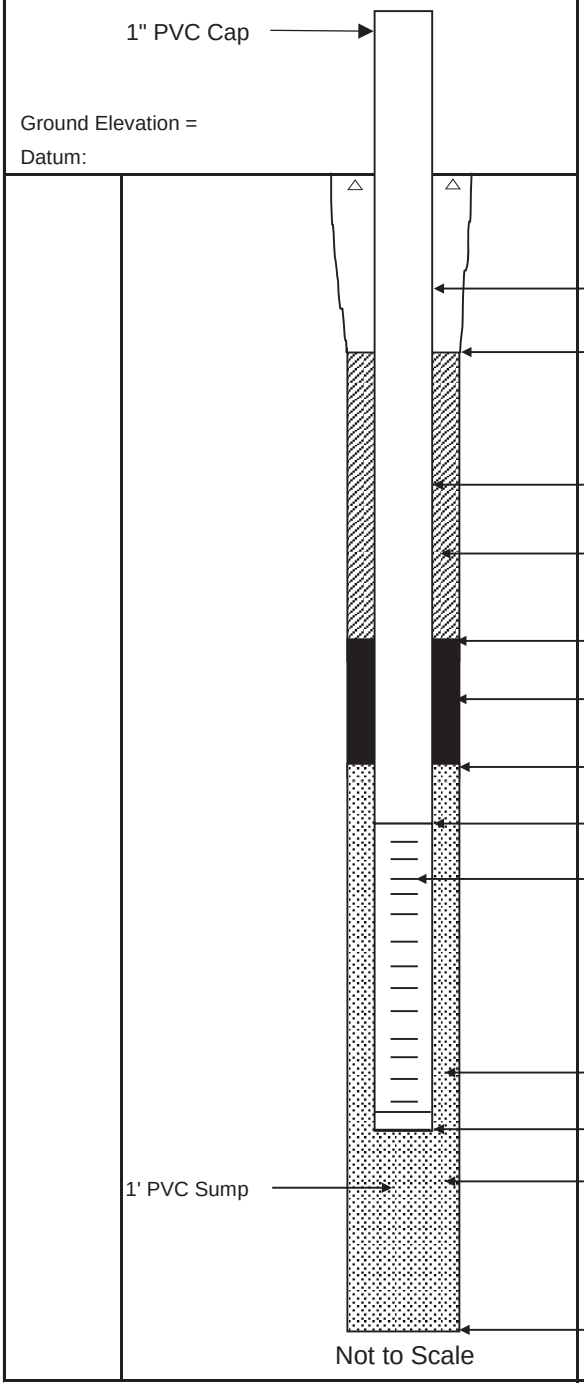
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0026

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0026
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



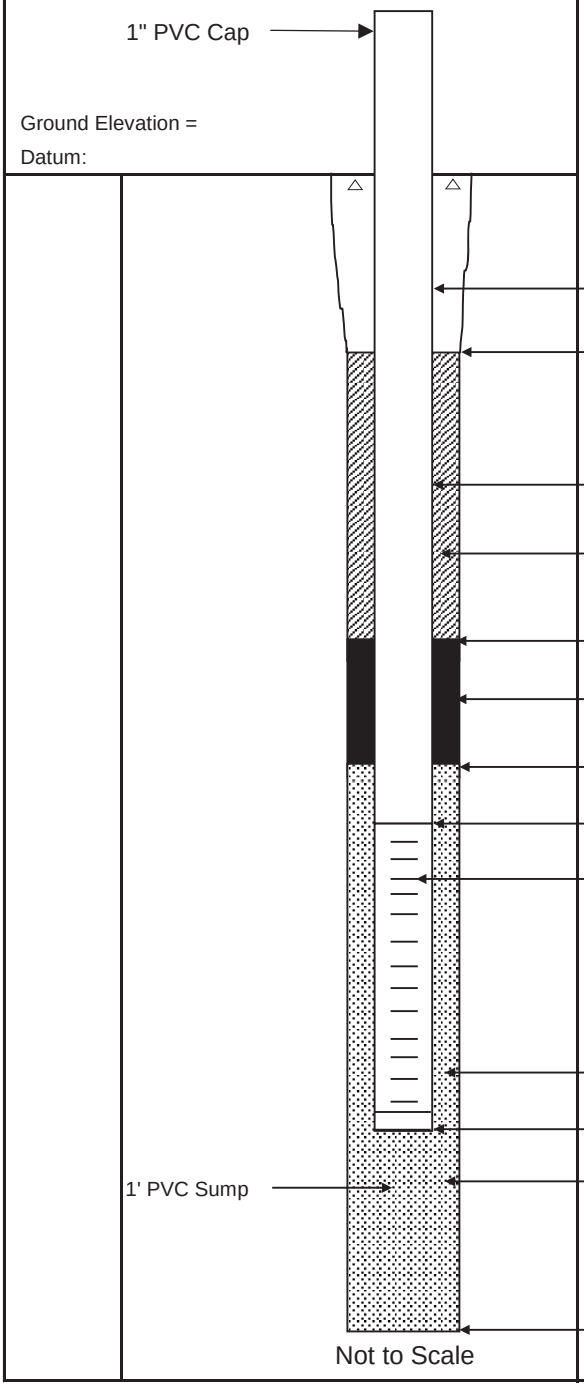
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 29.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 32.0'
Elevation / Depth of Top of Screen:		/ 32.5'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 34.5'
Elevation / Depth of Bottom of Filter Pack:		/ 34.5'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0025

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0025
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



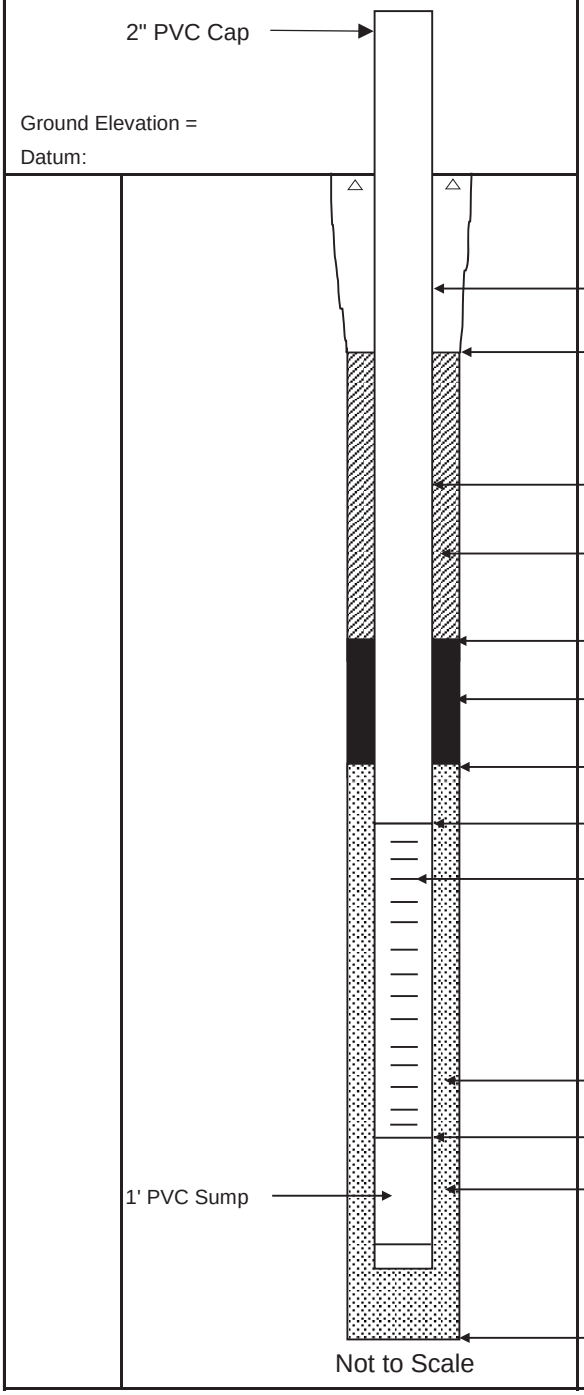
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 28.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 31.5'
Elevation / Depth of Top of Screen:		/ 32.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 34.0'
Elevation / Depth of Bottom of Filter Pack:		/ 34.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0129

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0129
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



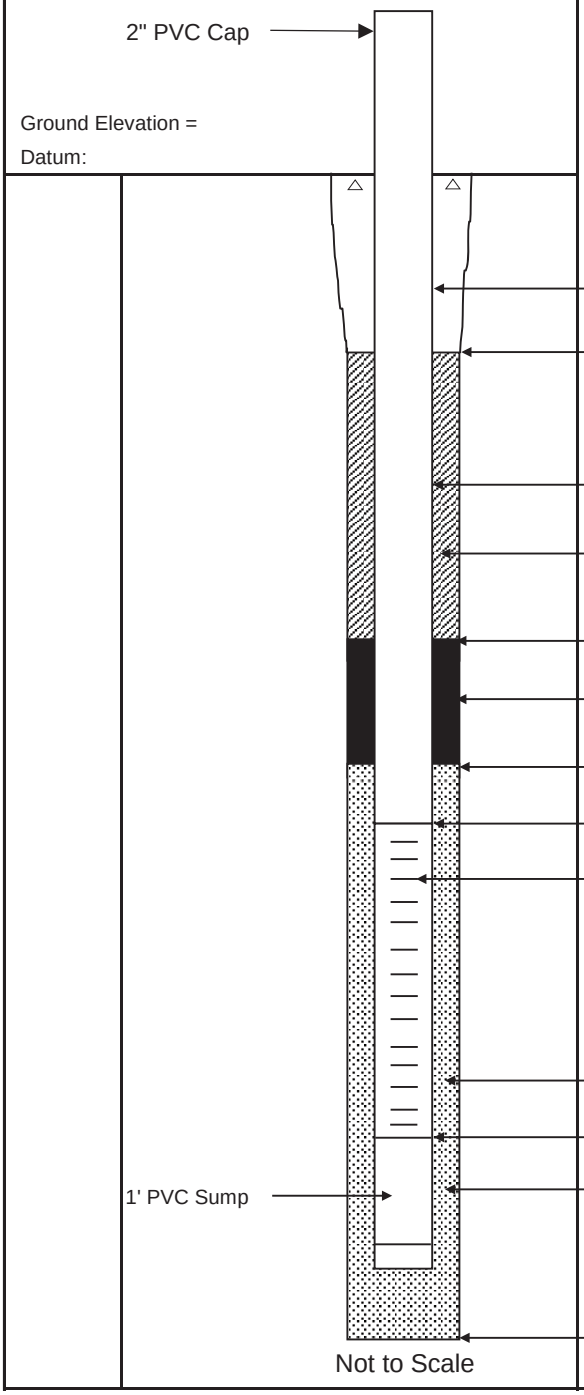
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0127

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0127
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



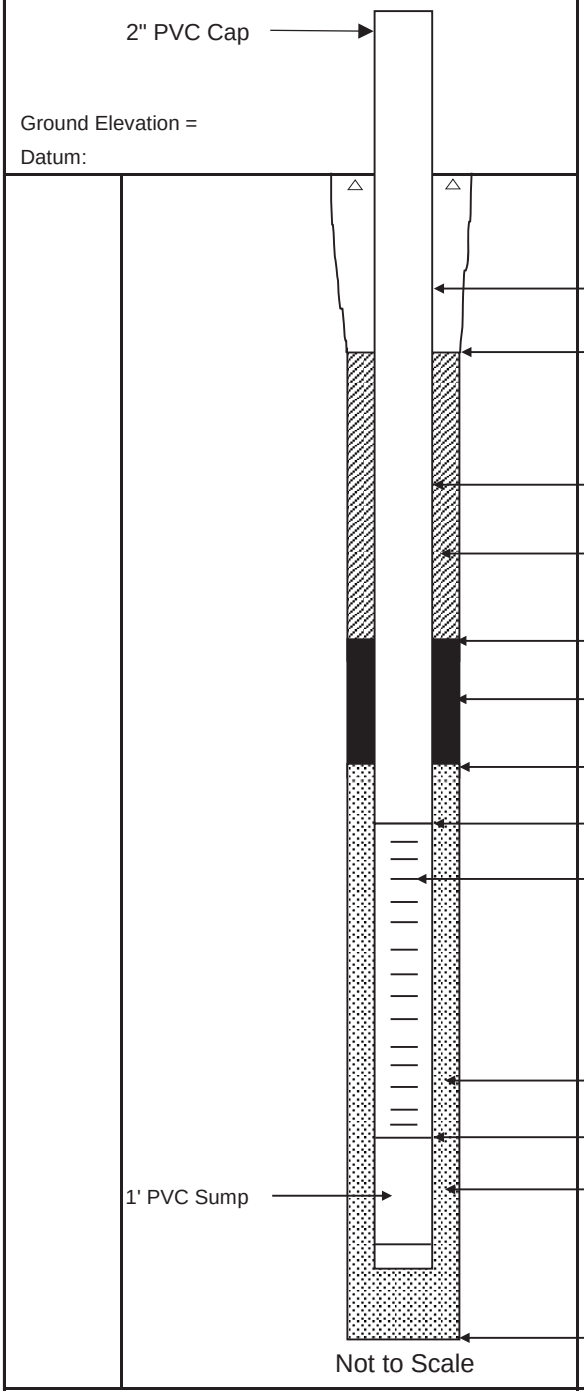
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0194

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0194
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/15/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



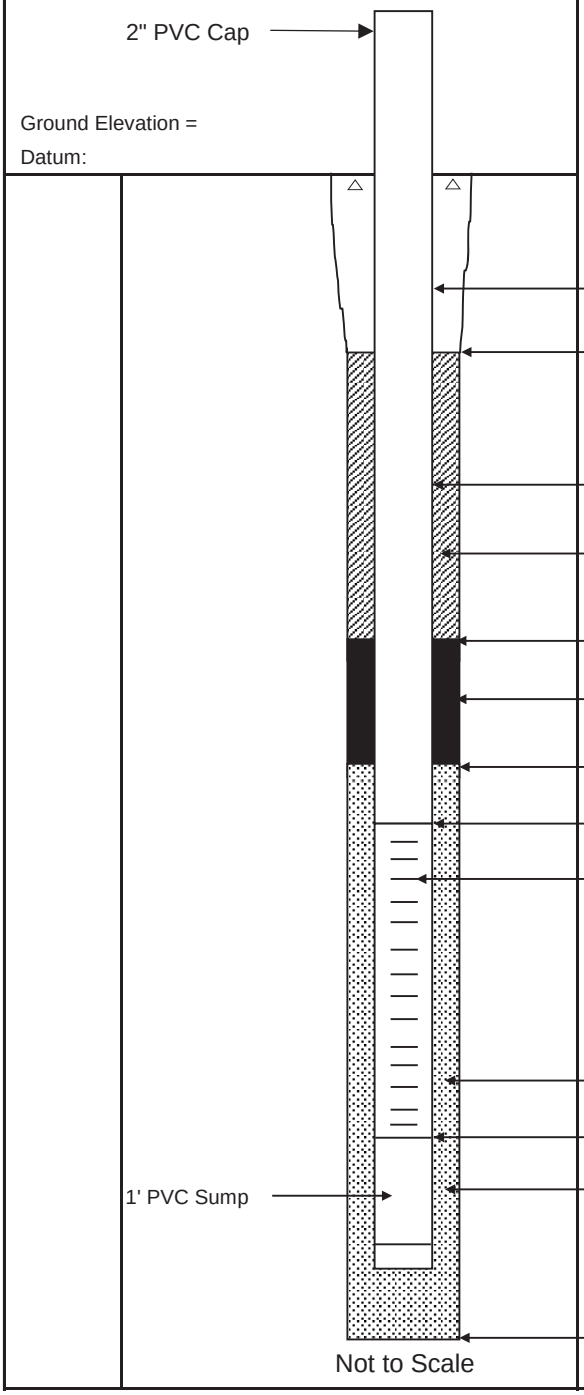
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0087

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0087
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



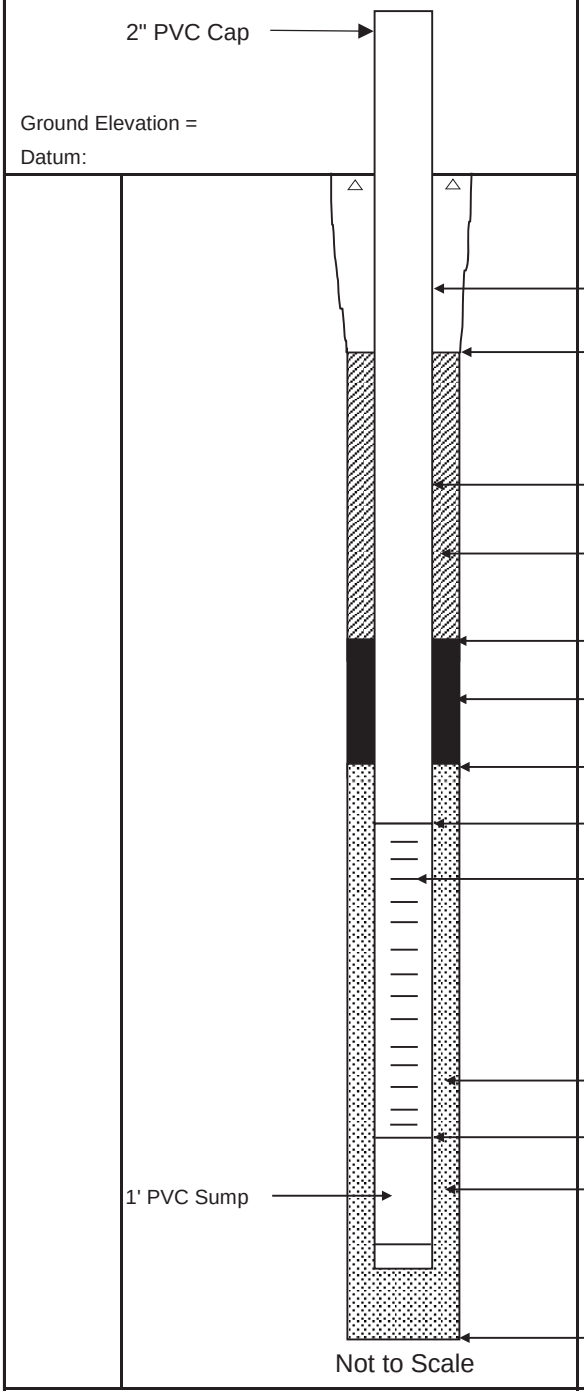
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0075

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0075
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



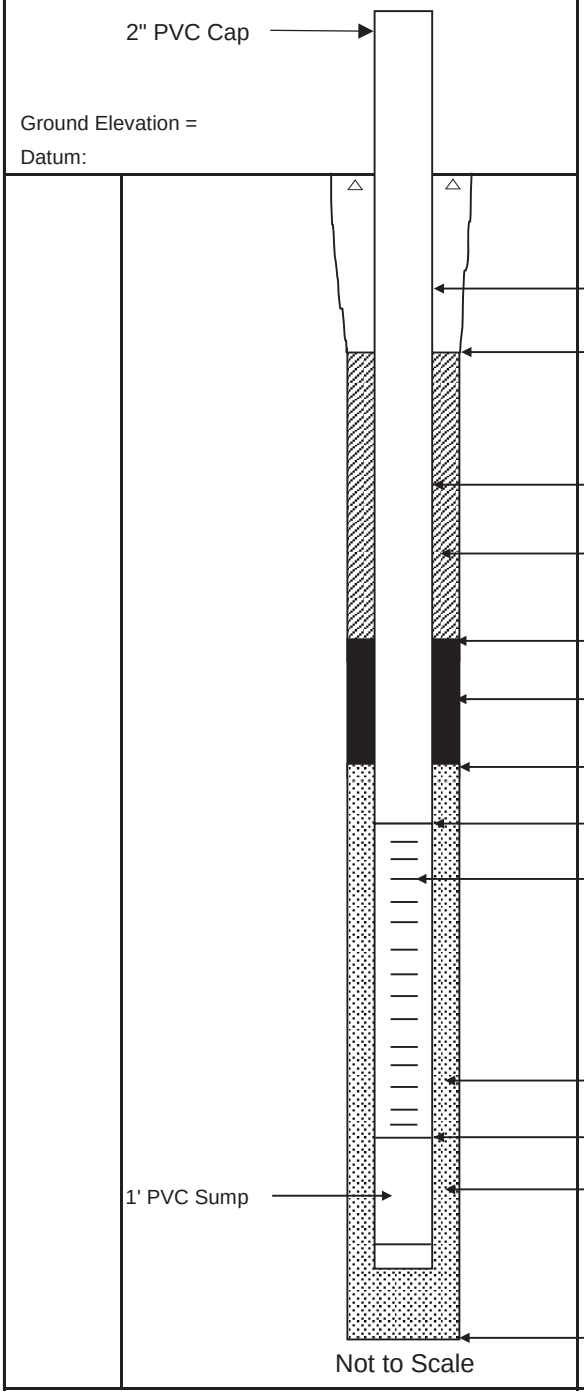
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 40.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 43.0'
Elevation / Depth of Top of Screen:		/ 43.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.5'
Elevation / Depth of Bottom of Filter Pack:		/ 46.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0106

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0106
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



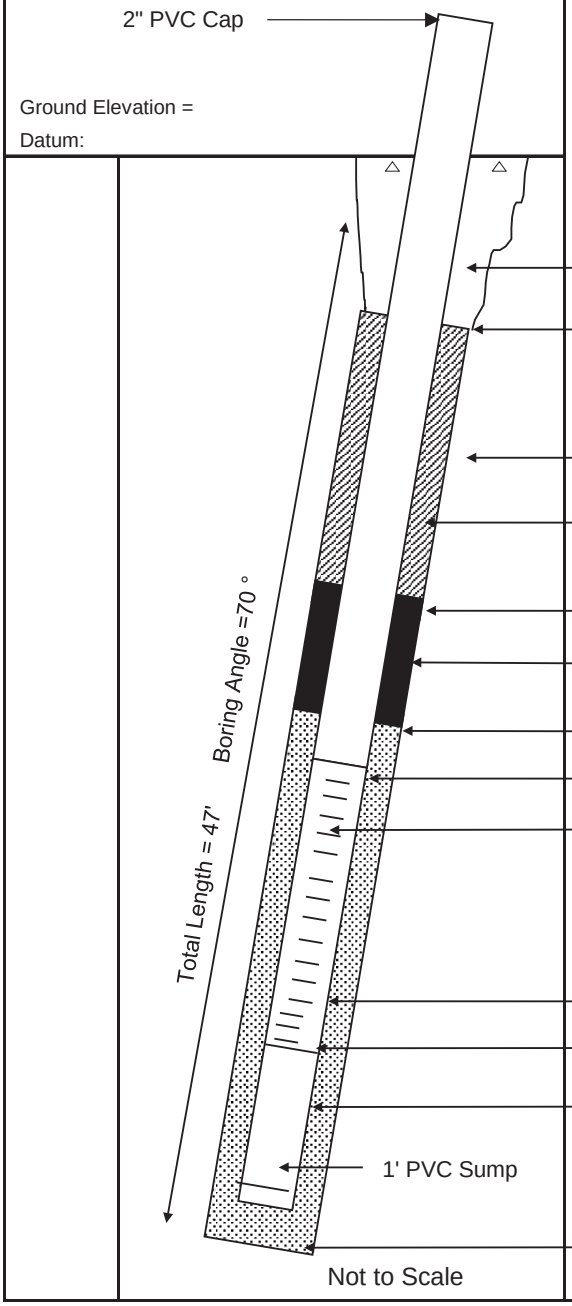
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0210

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0210
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



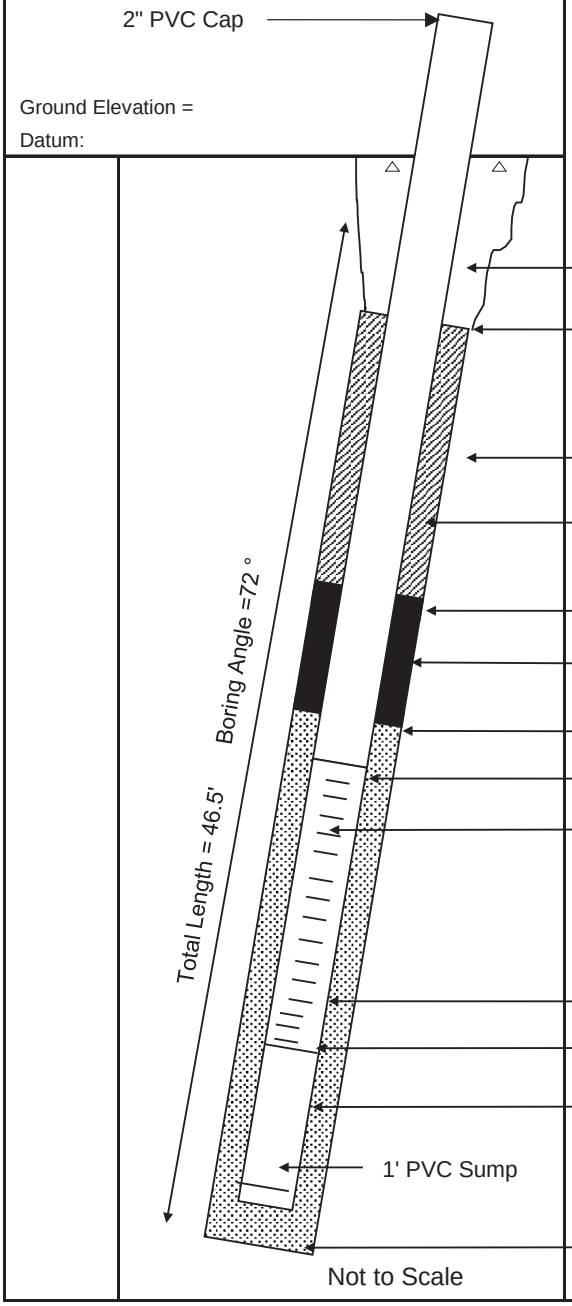
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0187

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0187
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



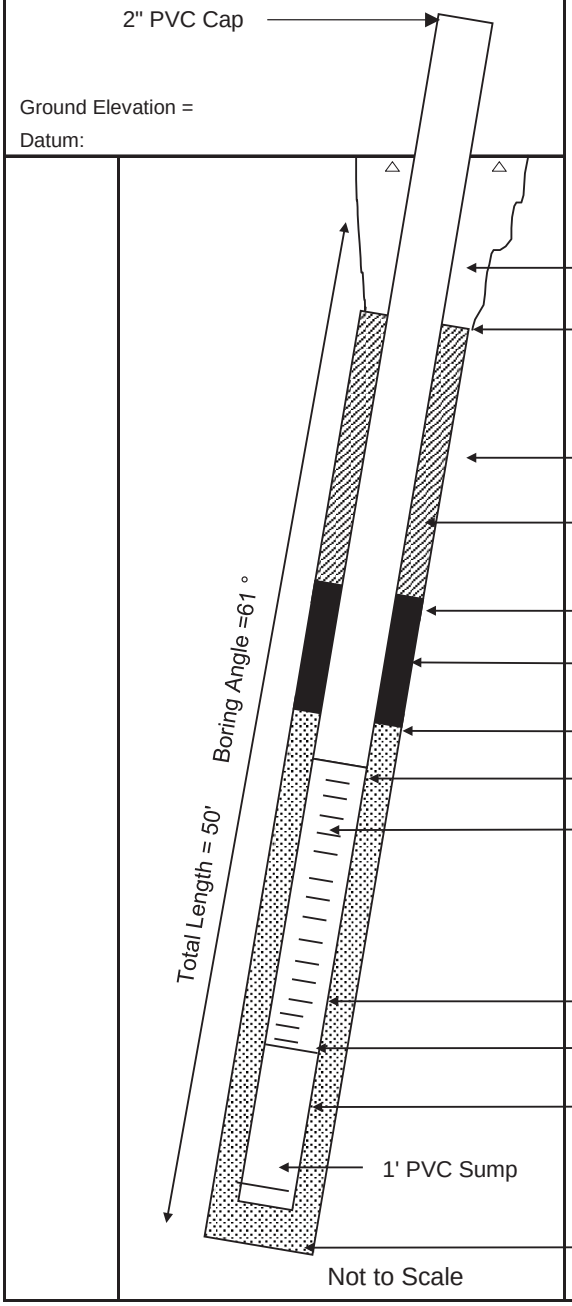
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0183

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0183
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



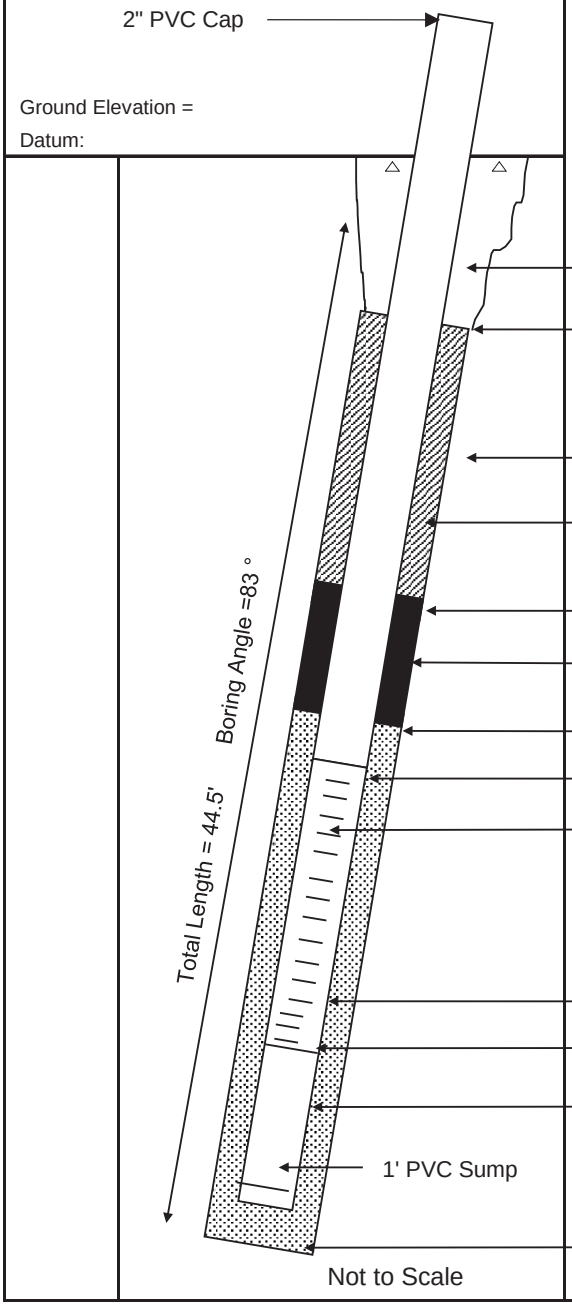
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0188

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0188
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



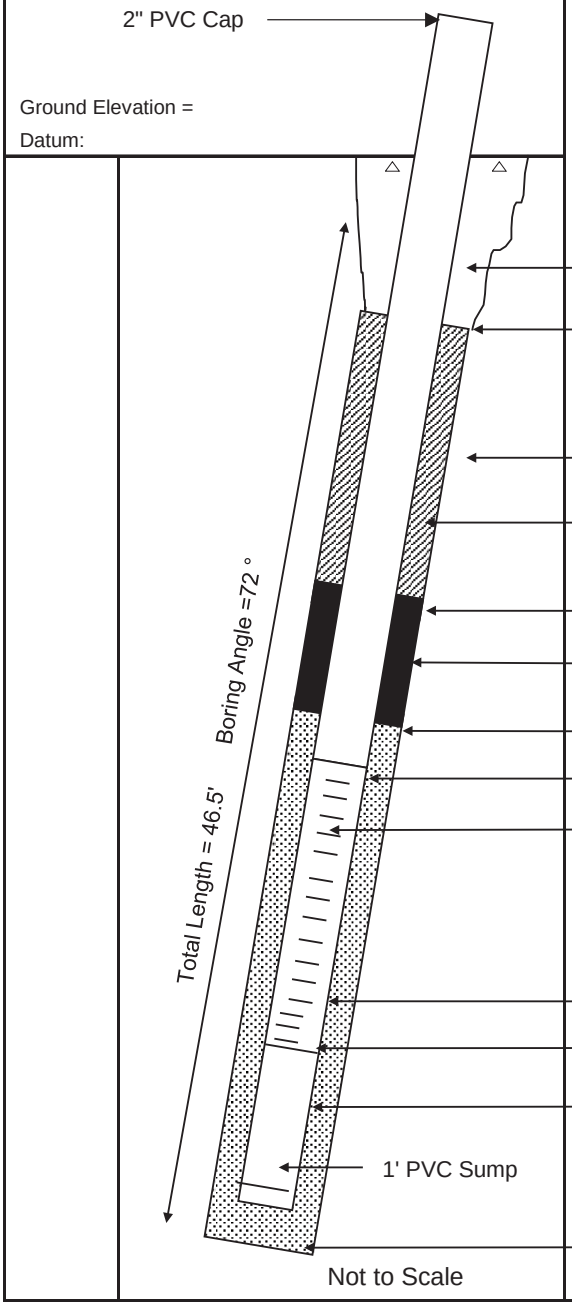
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0184

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0184
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



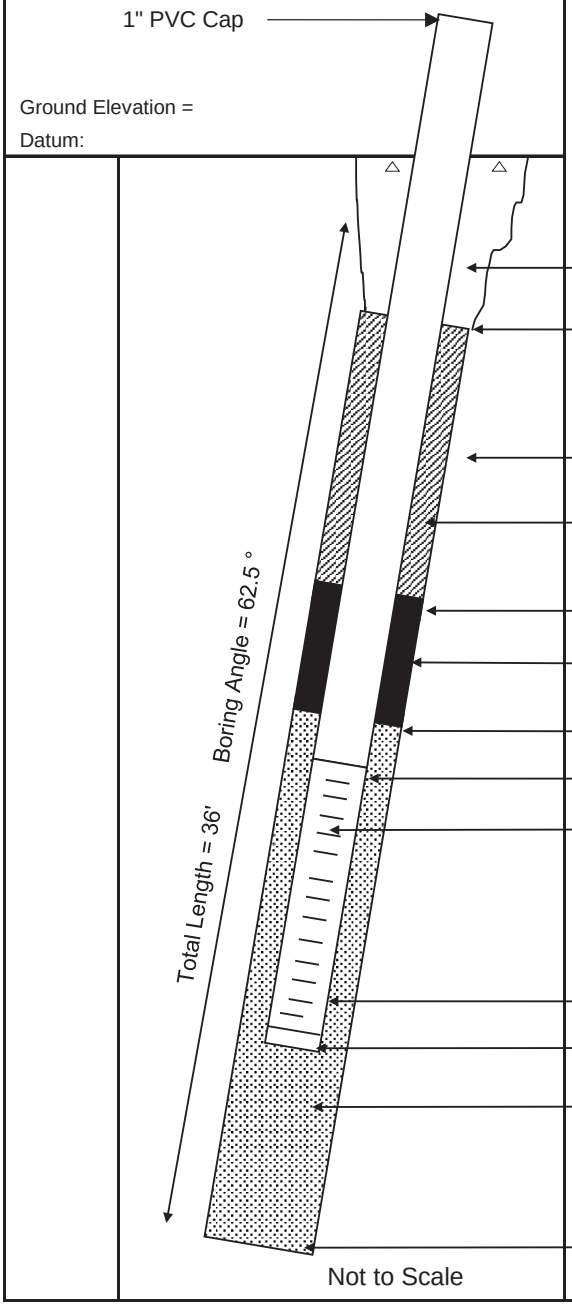
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0030

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0030
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



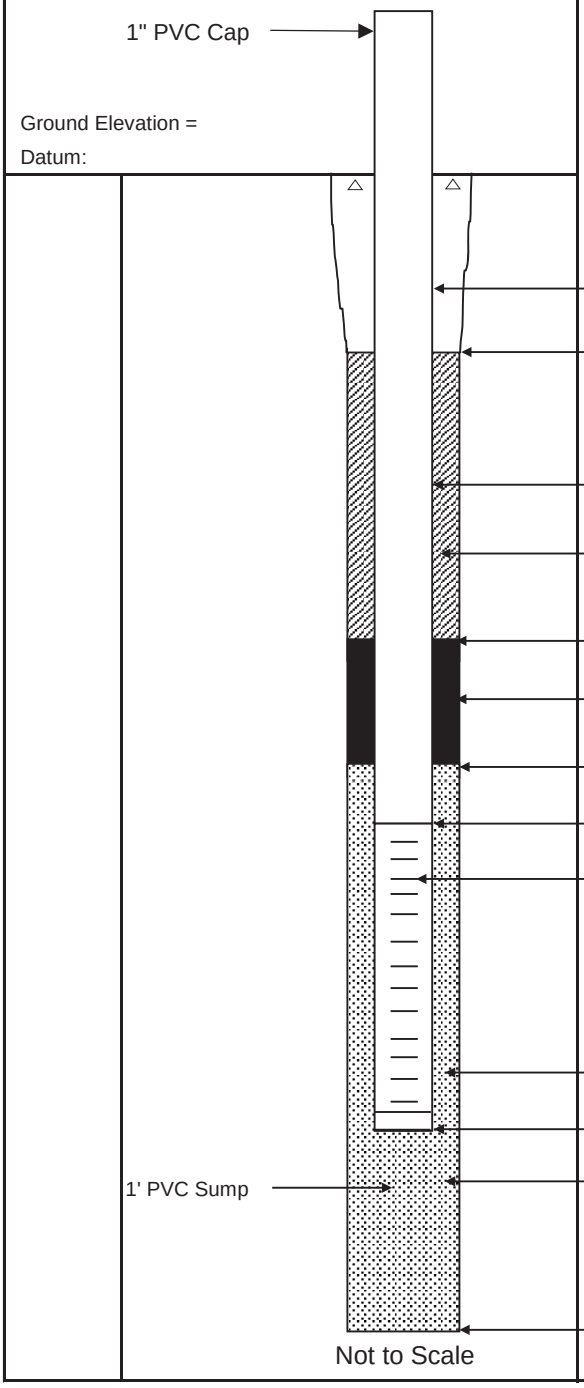
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0032

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0032
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



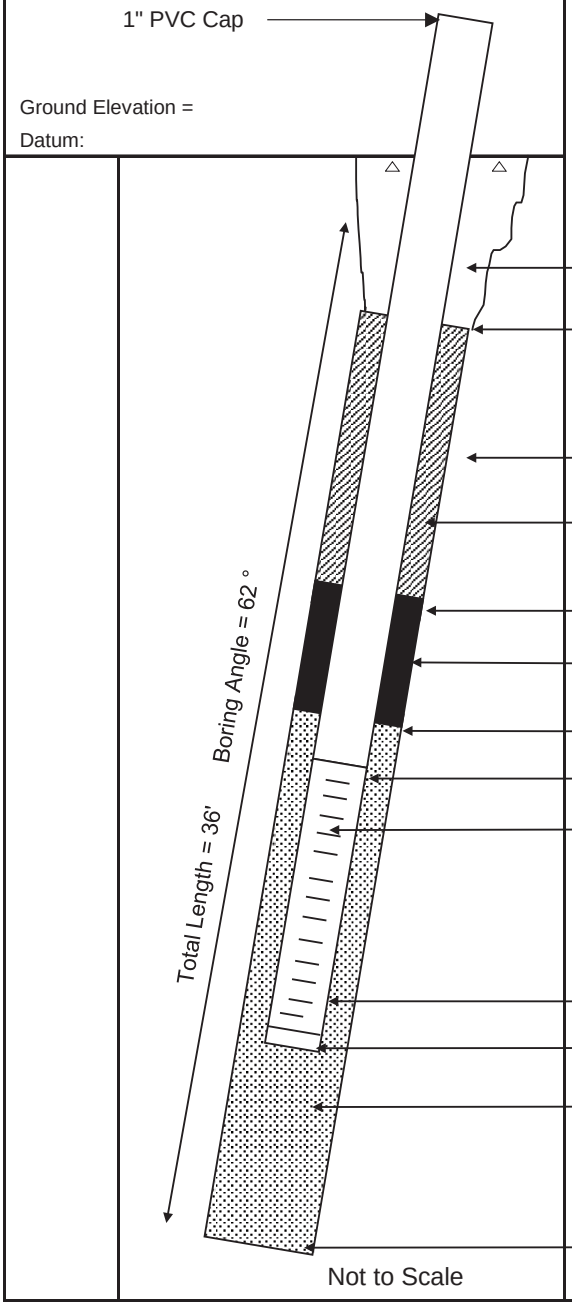
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 23.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 26.5'
Elevation / Depth of Top of Screen:		/ 27.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 29.0'
Elevation / Depth of Bottom of Filter Pack:		/ 29.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0031

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0031
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



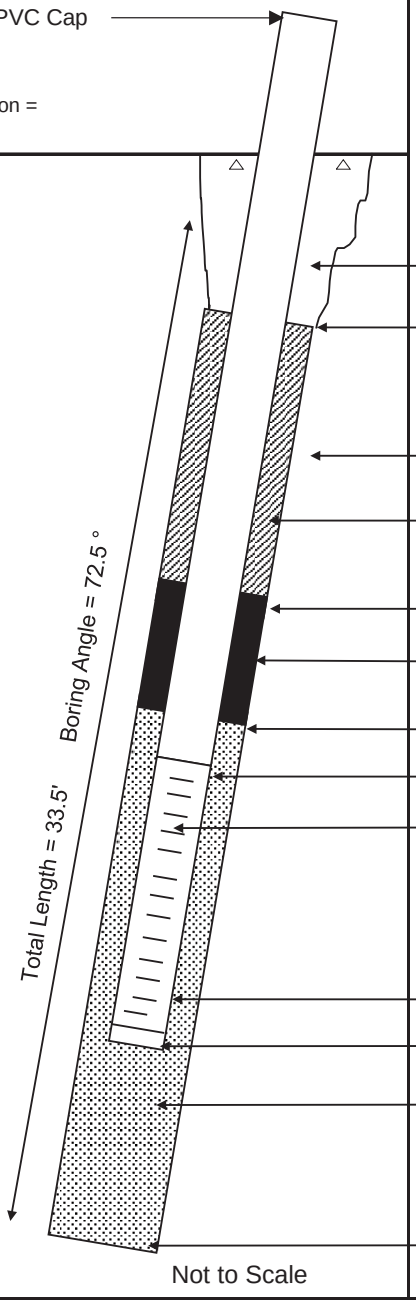
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0043

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0043
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



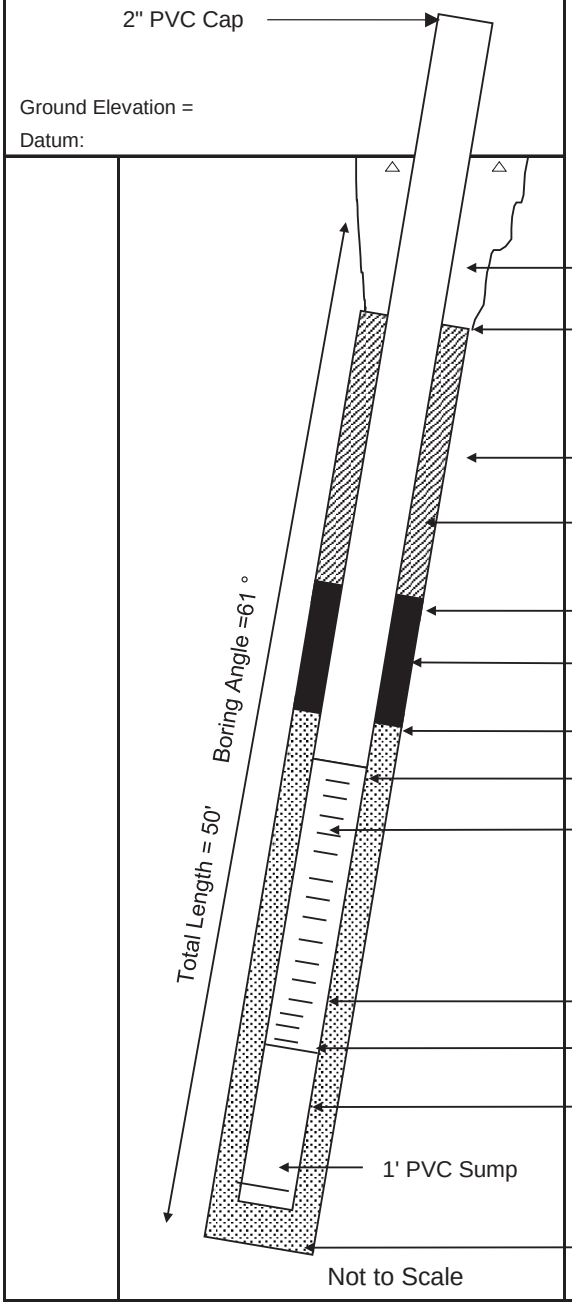
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 32.0'

Tetra Tech, Inc.

BORING No.: AS0180

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0180
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/23/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



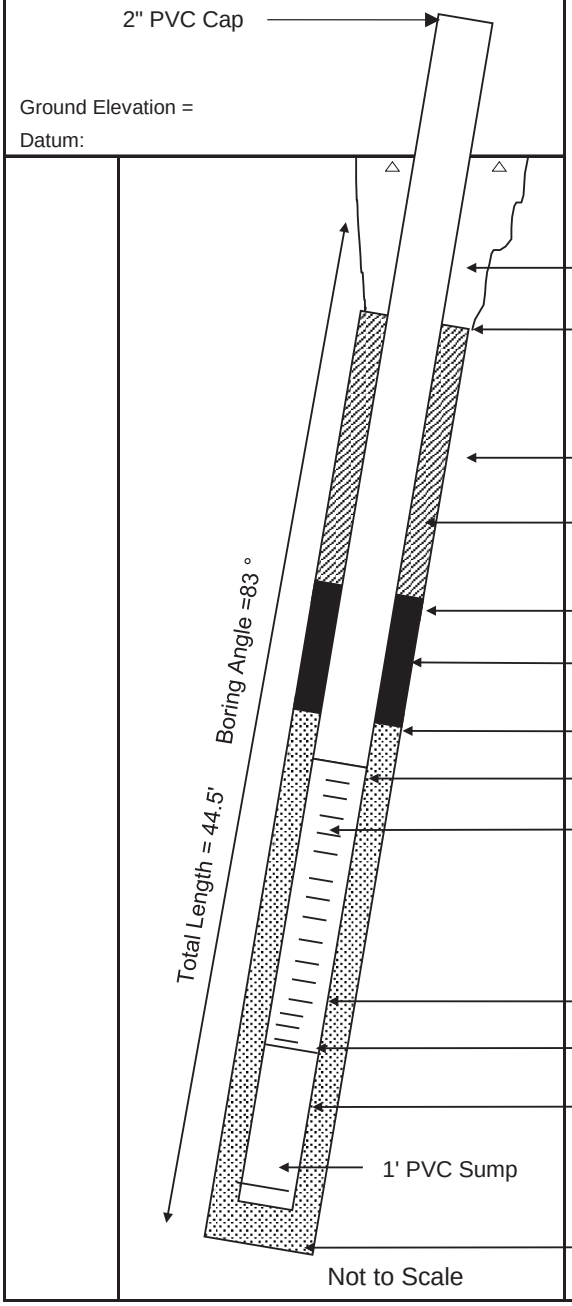
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0185

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0185
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/23/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



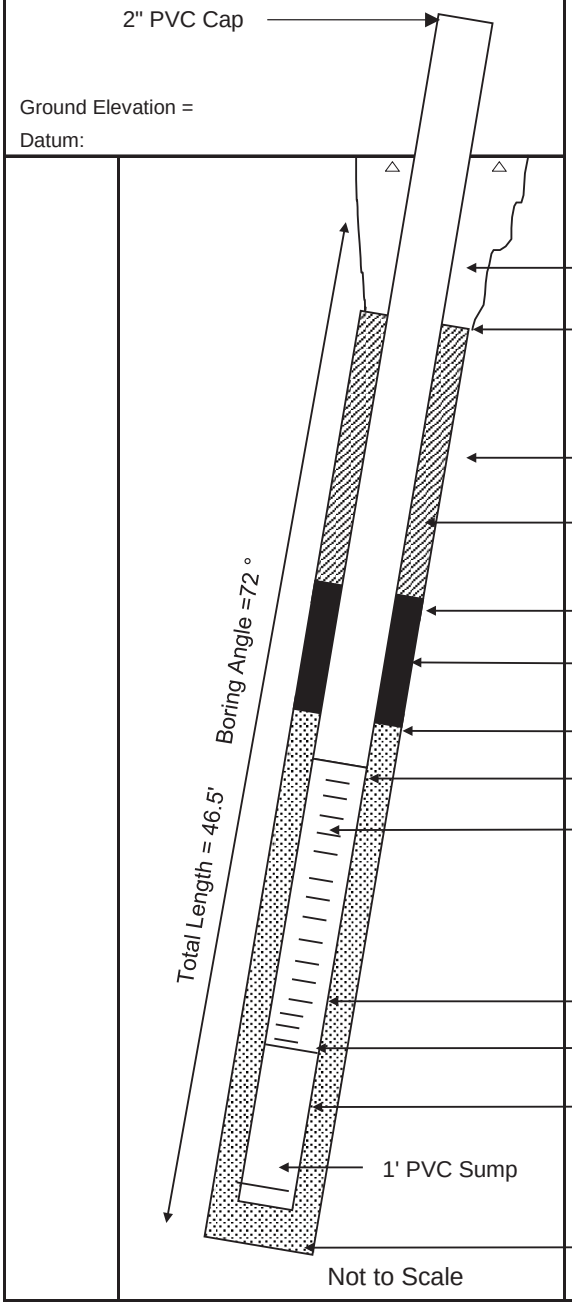
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0181

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0181
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/23/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



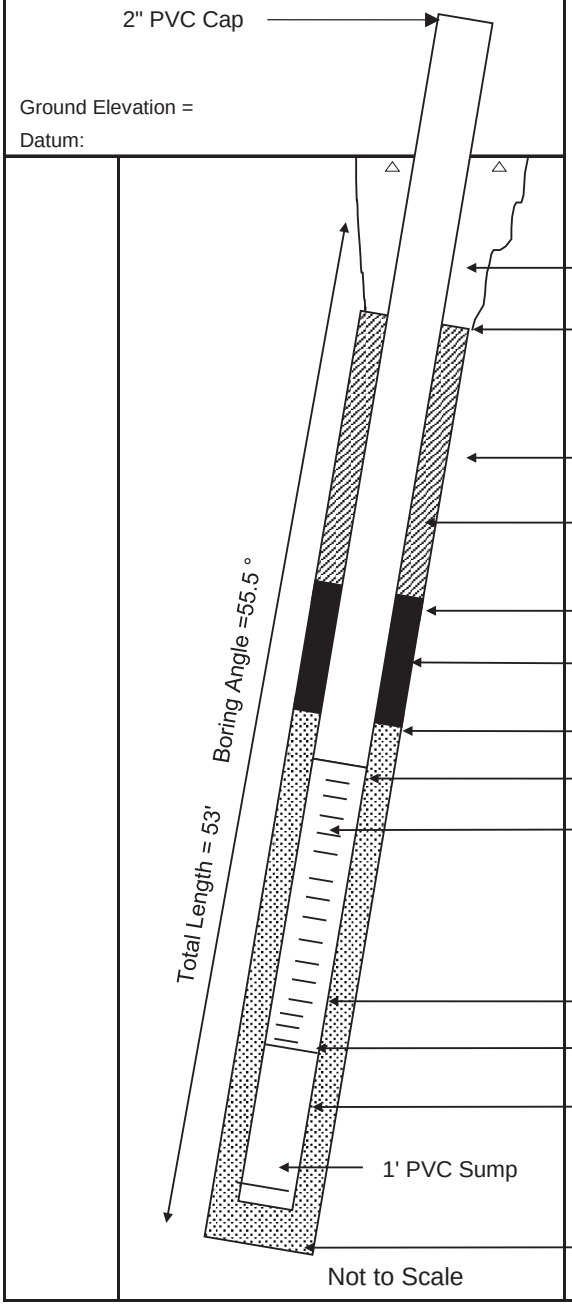
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0177

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0177
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/23/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



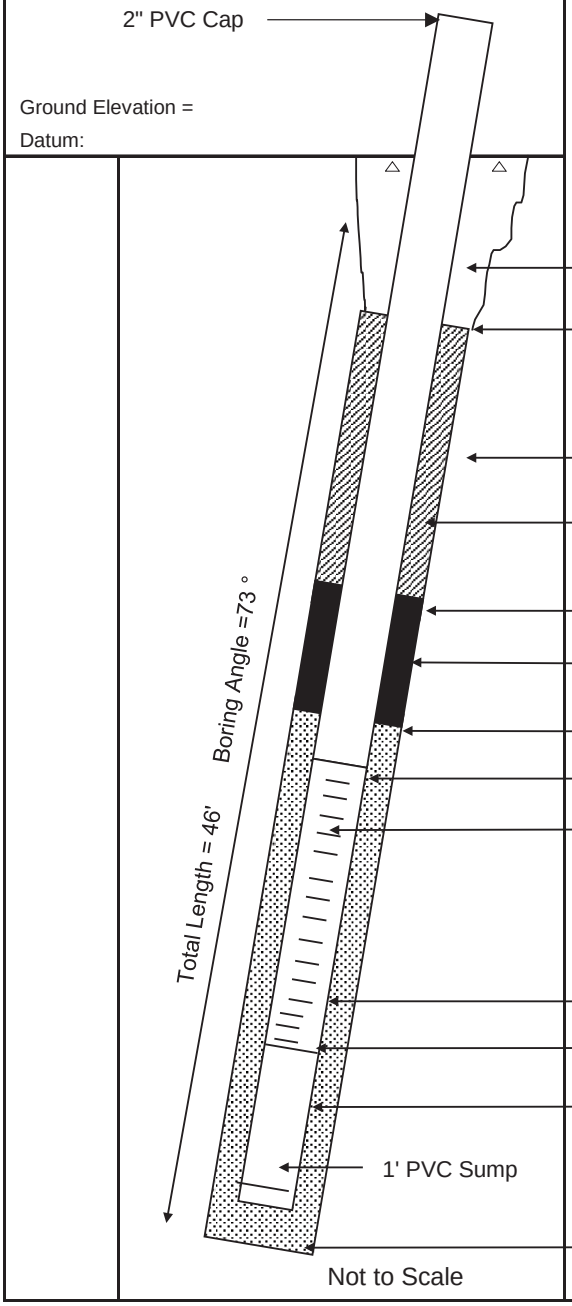
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0193

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0193
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/27/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



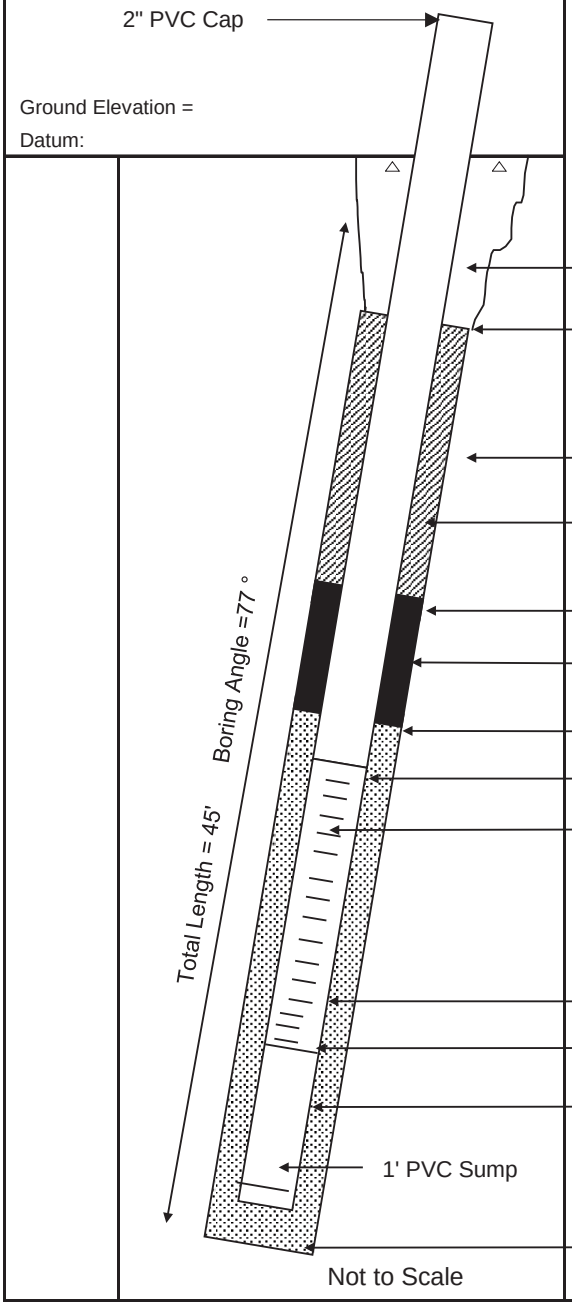
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING No.: AS0213

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0213
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/29/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	2" Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Undisturbed Native Soil	
Elevation / Total Depth of Borehole:		/ 44.0'

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0002
DATE: 12/2/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0002

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0003
DATE: 12/2/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments, trace silt	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0003

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0004
DATE: 12/3/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		2/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		2/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Gray	SAND - FINE TO VERY FINE; trace medium shell fragments	SP	Limited samples due to wash-out	0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0004

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0005
DATE: 12/3/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0005

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0006
DATE: 12/3/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5						PID Readings:	0			
	21.0								0.0 ppm at all 1-foot intervals	0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0		5/5							0			
	27.0									0			
	28.0									0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0006

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0008
DATE: 12/3/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0008

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0010
DATE: 12/3/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0010

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0012
DATE: 12/3/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0									0			
	21.0									0			
	22.0									0			
	23.0		5/5	20.0-22.5	Soft	Lt. Brn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0			22.5-27.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP	color change	0			
	28.0		5/5							0			
	29.0									0			
	30.0			27.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments, trace to some silt	SM	silt diminishing with depth	0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0012

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0007
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5	20.0-28.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	29.0									0			
	30.0			28.0-30.0	Soft	Grn. Gray	SAND - FINE; trace coarse to medium shell fragments	SP	Like beach sand	0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0007

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0009
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0			20.0-27.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	28.0									0			
	29.0									0			
	30.0		5/5	27.0-30.0	Soft	Gray	SAND - FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0009

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0011
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0			20.0-27.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	28.0									0			
	29.0									0			
	30.0		5/5	27.0-30.0	Soft	Gray	SAND - FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0011

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0014
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn.Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0014

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0017
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0									0			
	21.0									0			
	22.0									0			
	23.0		5/5	20.0-23.0	Soft	Reddish Brown	SAND - FINE TO VERY FINE	SP	no shell	0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5	23.0-28.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	29.0									0			
	30.0			28.0-30.0	Soft	Grn. Gray	SAND - FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0017

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0016
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0									0			
	21.0									0			
	22.0									0			
	23.0		5/5							0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0			20.0-27.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	28.0		5/5							0			
	29.0									0			
	30.0			27.0-30.0	Soft	Grn. Gray	SAND - FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0016

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0013
DATE: 12/4/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	20.0		5/5							0			
	21.0									0			
	22.0									0			
	23.0									0			
	24.0									0			
	25.0									0			
	26.0									0			
	27.0									0			
	28.0		5/5							0			
	29.0									0			
	30.0			20.0-30.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
							BORING TERMINATED 30'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No _____ Well I.D. #: AS0013

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0147
DATE: 12/5/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	41.0				Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell	SP		0			
	42.0			40.0-41.0			fragments			0			
	43.0		5/5							0			
	44.0			41.0-43.5	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM;	GP	1/4-inch shells	0			
	45.0						and fine to very fine sand, some intact shells			0			
	46.0									0			
	47.0			43.5-46.5	Firm	Gray	CLAY; little granular to medium shell fragments,	CL	trace intact shells up to two	0			
	48.0		5/5				trace silt		inches	0			
	49.0									0			
	50.0			46.5-50.0	Firm	Gray	CLAY; and silt, little very coarse to medium shell fragments	CL	1/4" intact shells	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0147

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0135
DATE: 12/5/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	41.0				Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	42.0			40.0-42.0						0			
	43.0		2/5										
	44.0												
	45.0												
	46.0												
	47.0												
	48.0		0/5										
	49.0												
	50.0			42.0-50.0			No recovery from 42.0-50.0 feet below land surface		Very poor recovery				
							presumed clayey layers from 43.5 to 50.0 foot depths like nearby HMPN-AS0147						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0135

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0124
DATE: 12/5/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	41.0				Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	42.0			40.0-42.0						0			
	43.0		2/5										
	44.0												
	45.0												
	46.0												
	47.0												
	48.0		0/5										
	49.0												
	50.0			42.0-50.0			No recovery from 42.0-50.0 feet below land surface		Very poor recovery				
							presumed clayey layers from 43.5 to 50.0 foot depths like nearby HMPN-AS0147						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0124

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0113
DATE: 12/5/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	41.0									0			
	42.0									0			
	43.0		5/5	40.0-43.0	Soft	Gray	SHELL FRAGMENTS, GRANULAR TO MEDIUM, little	GP		0			
	44.0						to some fine sand, trace silt			0			
	45.0									0			
	46.0									0			
	47.0			43.5-47.5	Firm	Gray	CLAY; little medium to very coarse shell fragments, trace	CL		0			
	48.0		5/5				intact up to 2", trace silt, more shell at depth			0			
	49.0									0			
	50.0			47.5-50.0	Firm	Gray	SILT AND CLAY; little fine to very fine sand	ML		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0113

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0102
DATE: 12/6/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	41.0									0			
	42.0									0			
	43.0		5/5							0			
	44.0			40.0-44.0	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM;	GP		0			
	45.0						some fine to very fine sand, trace silt			0			
	46.0									0			
	47.0									0			
	48.0		5/5	44.0-48.0	Firm	Gray	CLAY; little medium to very coarse shell fragments, trace	CL		0			
	49.0						to little sand, silt			0			
	50.0			48.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay, some silt; trace to	ML	full-sized oyster shell recovered	0			
							little granular to medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0102

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0101
DATE: 12/6/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP					
	43.0									0			
	43.5												
	44.0			42.0-44.0	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO COARSE; some fine to very fine sand	GP		0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			44.0-48.0	Firm	Gray	CLAY; some fine to very fine sand and trace to little coarse to	CL		0			
	48.5						to medium shell fragments, trace silt						
	49.0									0			
	49.5												
	50.0			48.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay, little to trace coarse	ML		0			
							to medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0101

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0112
DATE: 12/6/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some coarse to medium shell fragments, trace silt	SP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			41.5-44.0	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO COARSE; and fine to very fine sand	GP		0			
	44.5												
	45.0			44.0-45.0	Firm	Gray	SAND, SILT, AND CLAY, some coarse to medium shell fragments	ML		0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.0-50.0	Soft	Gray	SAND - FINE TO VERY FINE	SP		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0112

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0123
DATE: 12/6/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some coarse to medium shell fragments	SP	trace 1/4" intact shells				
	42.0									0			
	42.5		5/5										
	43.0									12			
	43.5			41.5-43.5	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO TO COARSE; and fine to very fine sand	GP					
	44.0									0			
	44.5												
	45.0				Firm	Gray	SAND, SILT, AND CLAY, some coarse to medium shell fragments	ML		1			
	45.5												
	46.0			43.5-46.0	Firm	Gray	CLAY - trace fine to very fine sand and silt, trace coarse to medium shell fragments	CL		0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.0-50.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay and silt, trace coarse to medium shell fragments	ML		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0123

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0134
DATE: 12/9/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):	0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	41.5												
	42.0								0.1 ppm @ 42.0'	0			
	42.5		5/5										
	43.0									7			
	43.5			41.0-43.5	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO COARSE;	GP					
	44.0						and fine to very fine sand, some intact small (1/4") shells			4			
	44.5												
	45.0				Firm	Gray	SAND, SILT, AND CLAY; some coarse to medium shell fragments	ML		0			
	45.5												
	46.0									0			
	46.5												
	47.0			43.5-47.0	Firm	Gray	CLAY; trace fine to very fine sand and silt, trace medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay and silt, trace coarse to medium shell fragments	ML	0.4 ppm @ 50'	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0134

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0145
DATE: 12/9/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; some silt, trace coarse to medium shell fragments	SM					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0			41.5-45.0	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM; some very fine sand, silt	GP	0.5" intact shells	0			
	45.5												
	46.0									0			
	46.5			45.0-46.5	Firm	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM; some very fine sand, silt, clay	ML					
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.5-50.0	Firm	Gray	CLAY; some very fine sand, silt, little to some coarse to medium shell fragments	ML		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0145

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0111
DATE: 12/9/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):				
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; some silt, trace to some coarse to medium shell fragments	SP	0.1 @ 41'	0			
	41.5												
	42.0								0.6 @ 42'	0			
	42.5		5/5	41.0-42.5	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM; some and very fine sand, some silt	GP	some intact 1/4" shells				
	43.0								4.8 @ 43'	5			
	43.5												
	44.0								3.3 @ 44'	3			
	44.5												
	45.0								1.8 @ 45'	2			
	45.5												
	46.0								0.9 @ 46'	1			
	46.5												
	47.0			42.5-47.0	Firm	Gray	CLAY; trace to little very fine sand, coarse to medium shell fragments	CL	0.6 @ 47'	1			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.5-50.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to some clay, silt, coarse to medium shell fragments	ML		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0111

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0100
DATE: 12/10/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; some silt, trace to little very	SM		0			
	41.5						coarse to medium shell fragments						
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0			41.0-45.0	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM;	GP	Intact small shells (1/4")	0			
	45.5						little to some fine to very fine sand, trace silt						
	46.0									0			
	46.5												
	47.0									0			
	47.5		0/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.0-50.0			NO RECOVERY; presumed clayey layers like AS0101			0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0100

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0083
DATE: 12/10/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.0	Soft	Gray	SHELL FRAGMENTS - GRANULAR TO MEDIUM;	GP		0			
	42.5		5/5				little to some gray fine to very fine sand						
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			42.0-46.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to little coarse	CL		0			
	46.5						to medium shell fragments, trace silt						
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.0-50.0	Firm	Gray	CLAY; and fine to very fine sand, trace to some coarse	CL		0			
							to medium shell fragments, trace silt						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0083

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0075
DATE: 12/10/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to some coarse to	SP					
	42.0						medium shell fragments, trace silt			0			
	42.5		5/5										
	43.0			41.5-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and sand*	GP	*fine to very fine sand	0			
	43.5			43.0-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and sand*, trace	GP					
	44.0						to some clay, silt			0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	43.5-47.5	Firm	Gray	CLAY; and very fine sand, trace coarse to medium shell	CL	intact 1/4' shells				
	48.0						fragments			0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.5-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse	SC		0			
							to medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X | No | Well I.D. #: AS0075

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0146
DATE: 12/10/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace medium to fine shell fragments,	SP		0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			41.0-44.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; little to some fine to very fine sand, trace silt	GP		0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5			44.0-46.5	Firm	Gray	CLAY; and very fine sand, trace coarse to medium shell fragments	CL					
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.5-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to some coarse to medium shell fragments, trace silt	SC	random large conch shell pieces	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0146

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0158
DATE: 12/10/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to some medium to fine shell fragments, trace silt	SP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			41.5-43.75	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP					
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			43.75-47.0	Firm	Gray	CLAY; some very fine sand, trace to little coarse to medium shell fragments	CL	trace intact shells	0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0158

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0163
DATE: 12/11/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-40.75	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP		0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			40.75-46.0	Firm	Gray	CLAY; some fine to very fine sand, trace to little coarse to medium shell fragments	CL	some intact shells	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0163

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0162
DATE: 12/11/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			40.50-46.0	Firm	Gray	CLAY; some fine to very fine sand, trace to little coarse to medium shell fragments	CL	trace intact shells	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0162

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0157
DATE: 12/11/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.25	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP		0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			42.25-46.0	Firm	Gray	CLAY; some fine to very fine sand, trace to little coarse to medium shell fragments	CL	trace intact shells	0			
	46.5												
	47.0			46.0-47.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little coarse to medium shell fragments	SC	trace intact shells	0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, clay lenses, trace to	SC		0			
							to none coarse to medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0157

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0133
DATE: 12/11/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):	0			
	40.5												
	41.0									0			
	41.5												
	42.0								0.9	1			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP					
	43.0								3.8	4			
	43.5												
	44.0								2.4	2			
	44.5												
	45.0								0.4	0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.5-47.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to little coarse to	CL		0			
	47.5		5/5				to medium shell fragments						
	48.0									0			
	48.5												
	49.0			47.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay, trace coarse to	SC		0			
	49.5						medium shell fragments, trace silt						
	50.0			49.0-50.0	Firm	Gray	CLAY; some fine to very fine sand, trace to some coarse to	CL	random > 2" shell fragments	0			
							medium shell fragments, trace silt						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0133

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0122
DATE: 12/11/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to some coarse to	SP		0			
	42.5		5/5				medium shell fragments, trace silt						
	43.0									0			
	43.5			41.5-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; fine to very fine sand,	GP					
	44.0						trace silt			0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5			43.5-46.5	Firm	Gray	CLAY; little to some fine to very fine sand, trace to little coarse to	CL	trace intact shells				
	47.0						to medium shell fragments			0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			46.5-49.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay, trace coarse	SC	trace intact shells	0			
	49.5						to medium shell fragments						
	50.0			49.0-50.0	Firm	Gray	CLAY; some fine to very fine sand, trace coarse to	CL		0			
							medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0122

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0110
DATE: 12/12/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):	0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	41.5												
	42.0								0.1	0			
	42.5		5/5	41.0-42.5			SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	43.0								1.5	0			
	43.5			42.5-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, some clay	GP					
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			43.0-46.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to some coarse to medium shell fragments	CL	trace intact shells	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			46.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay, trace coarse to medium shell fragments	SC		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	CLAY; some fine to very fine sand, trace coarse to medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0110

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0099
DATE: 12/12/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):	0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	41.5												
	42.0								0.1	0			
	42.5		5/5	41.0-42.5			SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	43.0								1.5	2			
	43.5			42.5-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, little clay	GP					
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			43.0-46.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to some coarse to medium shell fragments	CL	trace intact shells	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			46.0-49.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace coarse to medium shell fragments	SC		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	CLAY; some fine to very fine sand, trace coarse to medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0099

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0091
DATE: 12/12/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.3	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP	trace intact shells	0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0			41.3-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and sand*	GP	*fine to very fine sand	0			
	43.5			43.0-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and sand*, some clay	GP					
	44.0									0			
	44.5			43.5-44.6	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			44.6-48.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to some coarse to medium shell fragments	CL		0			
	48.5												
	49.0			46.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; some clay, trace coarse to medium shell fragments	SC		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	CLAY; some fine to very fine sand, trace coarse to medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0099

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0074
DATE: 12/13/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0												
	40.5												
	41.0												
	41.5								No PID readings taken due to rain				
	42.0			40.0-42.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to some coarse to medium shell fragments	SP	trace intact shells				
	42.5		5/5										
	43.0												
	43.5												
	44.0			42.0-44.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	44.5												
	45.0												
	45.5												
	46.0												
	46.5												
	47.0												
	47.5		5/5										
	48.0												
	48.5												
	49.0												
	49.5												
	50.0			44.0-50.0	Firm	Gray	CLAY; some fine to very fine sand, trace to little coarse to medium shell fragments	CL	shell fragments decreasing with depth				
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0074

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0082
DATE: 12/13/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.3	Soft	Gray	SAND - FINE TO VERY FINE; trace to some coarse to	SP					
	41.0						medium shell fragments, some small intact, trace larger pieces			0			
	41.5												
	42.0			40.3-42.4	Soft	Gray	SHELL - COARSE TO MEDIUM; and sand; fine to	GP		0			
	42.5		5/5				very fine						
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.4-47.0	Firm	Gray	CLAY; little to some very fine sand, and trace to little	CL		0			
	47.5		5/5				granular to medium shell fragments						
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace to little	SC	clay lenses	0			
							coarse to medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0082

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0090
DATE: 12/13/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):	0			
	40.5												
	41.0			40.0-40.8	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP	10.8	11			
	41.5												
	42.0								2.8	3			
	42.5		5/5										
	43.0								0.5	1			
	43.5			40.8-43.4	Soft	Gray	SHELL - COARSE TO MEDIUM; and fine to very fine	GP					
	44.0						sand, some clay at 43.4 to 43.8		0.7	1			
	44.5												
	45.0								0.3	0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			43.4-48.0	Firm	Gray	CLAY; some fine to very fine sand, trace to some coarse	CL		0			
	48.5						to medium shell fragments						
	49.0									0			
	49.5												
	50.0			48.0-50.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace to little	SC		0			
							coarse to medium shell fragments, clay lenses						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0090

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0098
DATE: 12/13/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Lt. Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			41.0-43.5	Soft	Gray	SHELL - COARSE TO MEDIUM; and fine to very fine sand	GP	trace intact 1/4" shells				
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	43.5-47.3	Firm	Gray	CLAY; some very fine sand, trace to some coarse to medium shell fragments	CL					
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.3-50.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace coarse to medium shell fragments	SC	clay lenses	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0098

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0109
DATE: 12/13/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40-41.3	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP					
	42.0									0			
	42.5		5/5	41.3-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.5-47.0	Firm	Gray	CLAY; some very fine sand, trace to little coarse to medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Soft	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0109

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0121
DATE: 12/17/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40-41	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5	41.0-42.7	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP					
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	42.5-47.5	Firm	Gray	CLAY; some very fine sand, trace to little coarse to medium shell fragments	CL	trace large fragments to 3"				
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.5-50.0	Soft	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC	some clay lenses, shell markedly de-creases w/ depth	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0121

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0132
DATE: 12/17/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.6	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP					
	42.0									0			
	42.5		5/5										
	43.0			41.6-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very sand	GP		0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5			43.0-46.5	Firm	Gray	CLAY; and very fine sand, trace to some coarse to medium shell fragments	CL					
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			46.5-48.8	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little medium to coarse shell fragments	SC		0			
	49.5												
	50.0			48.8-50.0	Soft	Gray	CLAY; some fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0132

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0144
DATE: 12/18/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some coarse to medium shell fragments	SP					
	42.0									0			
	42.5		5/5	41.5-42.6	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.6-47.0	Firm	Gray	CLAY; and very fine sand, trace to some coarse to medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			47-49	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little coarse to medium shell fragments	SC		0			
	49.5												
	50.0			49-50	Soft	Gray	CLAY; trace very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0144

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0156
DATE: 12/18/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									1			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, little clay	GP	clay from 42.25' to 42.50'				
	43.0									0			
	43.5												
	44.0			42.5-44.0	Firm	Gray	CLAY; little fine to very fine sand, trace to some coarse to medium shell fragments	CL	shell fragments increase at 44'	0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	44.5-47.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little coarse to medium shell fragments	SC					
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			49-50	Firm	Gray	CLAY; and trace very fine sand, trace shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0156

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0161
DATE: 12/18/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									1			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	43.0									0			
	43.5												
	44.0						CLAY; little fine to very fine sand, trace to some coarse to medium shell fragments	CL		0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.5-47.0	Firm	Gray	CLAY; trace to little very fine sand, trace to little coarse to medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5			47.0-48.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC	shell decreasing with depth				
	49.0									0			
	49.5												
	50.0			49-50	Firm	Gray	CLAY; trace very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0161

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0167
DATE: 12/18/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP	some intact large shells				
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.5-47.0	Firm	Gray	CLAY; some very fine sand, trace to little medium to coarse shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			47.0-49.3	Soft	Gray	SAND - FINE TO VERY FINE; and clay, trace to little shell	SC					
	50.0			49.3-50.0	Firm	Gray	CLAY; some very fine sand, trace medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0167

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0166
DATE: 12/18/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.5	Soft	Gray	SAND - FINE TO VERY FINE; little to some coarse to medium shell fragments	SP					
	41.0									0			
	41.5												
	42.0			40.5-42.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP		0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.0-47.0	Firm	Gray	CLAY; some very fine sand, trace to little coarse to medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			47.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little shell	SC		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	CLAY; some very fine sand, trace medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0166

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0165
DATE: 12/18/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0								Positive PID Readings (ppm):	0			
	40.5												
	41.0								0.2 ppm @ 41'	0			
	41.5			40.0-41.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			41.5-47.0	Firm	Gray	CLAY; some fine to very fine sand, trace to little coarse to medium shell fragments	CL	some up to 4" intact shells	0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0								some oyster fragments	0			
	49.5			47.0-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little shell	SC	coarse to medium shell				
	50.0			49.5-50.0	Firm	Gray	CLAY; some very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0165

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0160
DATE: 12/19/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, some clay	GP	clay from 40.5' to 41.0'	0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			41.0-44.0	Firm	Gray	CLAY; and fine to very fine sand, trace to little coarse to to medium shell fragments	CL	intact clam shells up to 1"	0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			44.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace shell	SC		0			
	49.5												
	50.0			49.5-50.0	Firm	Gray	CLAY; and very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0160

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0155
DATE: 12/19/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			41.5-44.0	Firm	Gray	CLAY; and fine to very fine sand, trace to little coarse to	CL		0			
	44.5						to medium shell fragments						
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			44.0-48.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to	SC	Random large shell pieces	0			
	48.5						medium shell fragments						
	49.0									0			
	49.5												
	50.0			48.0-50.0	Firm	Gray	CLAY; and very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0155

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0143
DATE: 12/19/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP		0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0			42.0-45.0	Firm	Gray	CLAY; and fine to very fine sand, trace to little coarse to	CL		0			
	45.5						to medium shell fragments						
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			45.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to	SC	random large shell pieces	0			
	49.5						to medium shell fragments						
	50.0			48.0-50.0	Firm	Gray	CLAY; trace very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0143

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0131
DATE: 12/19/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine	GP		0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			42.0-46.0	Firm	Gray	CLAY; and fine to very fine sand, trace to little coarse to	CL	shell decreasing with depth	0			
	46.5						to medium shell fragments						
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			46.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to	SC	random large shell pieces	0			
	49.5						medium shell fragments		shell decreasing with depth				
	50.0			49.0-50.0	Firm	Gray	CLAY; trace very fine sand, trace medium to coarse shell	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0131

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0120
DATE: 12/19/2019
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.5	Soft	Gray	SAND - FINE TO VERY FINE; and granular to medium shell fragments	SP	trace 1/4" intact clam shells				
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.5-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP	some 1/4" intact clam shells				
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			42.5-47.0	Firm	Gray	CLAY; some fine to very fine sand, trace to some coarse to medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			47.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments,	SC		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	CLAY; and very fine sand, trace medium to coarse shell	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0120

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0097
DATE: 1/6/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SAND - FINE TO VERY FINE; granular to medium shell fragments	SP					
	43.0									0			
	43.5												
	44.0									0			
	44.5			42.5-44.5	Soft	Gray	SAND - FINE TO VERY FINE; and coarse to medium shell fragments, trace silt	SP	trace 1/4" intact shells				
	45.0									0			
	45.5			44.5-45.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, granular to medium shell fragments	SC	2-Inch oyster shell				
	46.0								trace 1/4" intact shells	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			45.5-48.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to little coarse to medium shell fragments	CL		0			
	48.5												
	49.0									0			
	49.5												
	50.0			48.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, some coarse shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0097

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0067
DATE: 1/6/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		3/5										
	43.0									0			
	43.5												
	44.0			40.0-43.8	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP	shell fragments up to 1-inch	0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5			43.8-46.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM, and fine to very fine sand, some clay, trace silt	GP	shell fragments up to 1-inch				
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			46.5-50.0	Firm	Gray	SAND - FINE TO VERY FINE; trace to some granular to medium shell	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0067

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0108
DATE: 1/6/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									5			
	42.5		5/5										
	43.0			40.0-43.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP		1			
	43.5								like beach sand				
	44.0									0			
	44.5												
	45.0									1			
	45.5			43.0-45.2	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand	GP	some intact 1/2-inch shells				
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.2-50.0	Firm	Gray	CLAY; little to some very fine sand, trace to little granular to medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0108

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0089
DATE: 1/6/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									7			
	40.5												
	41.0									4			
	41.5												
	42.0									8			
	42.5		5/5	40.0-42.5	Soft	Gray	SAND - FINE TO VERY FINE; trace granular to medium shell fragments	SP					
	43.0									13			
	43.5												
	44.0									4			
	44.5												
	45.0			42.5-45.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM	GP	some intact shells up to	6			
	45.5								2-inches across				
	46.0			45.0-46.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM, some clay	GP	some intact shells up to	1			
	46.5								2-inches across				
	47.0									2			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			46.0-49.0	Firm	Gray	CLAY; little to some sand, little to some granular to medium shell fragments	CL		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little granular to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0089

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0088
DATE: 1/7/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									1			
	41.5												
	42.0									2			
	42.5		5/5										
	43.0									6			
	43.5												
	44.0			40.0-44.0	Soft	Gray	SAND - FINE TO VERY FINE; and coarse to medium shell fragments	SP		21			
	44.5												
	45.0									33			
	45.5												
	46.0									0			
	46.5			44.0-46.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM, and fine to very fine sand, trace silt	GP	trace 1/4" intact shells				
	47.0									2			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0												
	49.5												
	50.0			49.0-50.0	Firm	Gray	CLAY; little to some sand, little to some granular to medium shell fragments	CL					
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0088

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0096
DATE: 1/7/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									5			
	40.5												
	41.0									1			
	41.5												
	42.0												
	42.5		5/5										
	43.0									1			
	43.5												
	44.0			40.0-44.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP		17			
	44.5												
	45.0									3			
	45.5												
	46.0			44.0-46.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM, some small intact; and fine to very fine sand, trace silt	GP		4			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	SAND - VERY FINE; and clay, trace to little granular to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0096

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0107
DATE: 1/7/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									1			
	40.5												
	41.0									0			
	41.5												
	42.0									1			
	42.5		5/5										
	43.0			40.0-43.0	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell	SP		0			
	43.5						fragments, some tiny intact clam shells, 1' clay lens at 41'						
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			43.0-46.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM, some 2"-3" intact;	GP		0			
	46.5						some fine to very fine sand, some silt, trace clay						
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5			46.5-48.5	Firm	Gray	CLAY; little to some fine to very fine sand, trace to little very	CL					
	49.0						coarse to medium shell fragments, one 3" piece			0			
	49.5												
	50.0			48.5-50.0	Soft	Gray	SAND - VERY FINE; and clay, trace to little granular to	SC		0			
							medium shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0107

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0130
DATE: 1/8/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									1			
	40.5												
	41.0									3			
	41.5												
	42.0			40.0-42.0	Soft	Gray	SHELL - COARSE TO MEDIUM; some fine to very	GP	1"-2" intact snail shells	0			
	42.5		5/5				fine sand, trace silt,						
	43.0			42.0-43.0	Soft	Gray	SHELL - COARSE TO MEDIUM; some fine to very		clay lenses	0			
	43.5						fine sand, little clay,trace silt						
	44.0									0			
	44.5												
	45.0									0			
	45.5			43.0-45.5	Firm	Gray	CLAY; trace to little very fine sand, trace silt, trace coarse	CL					
	46.0						to medium shell fragments			0			
	46.5												
	47.0			45.5-47.0	Firm	Gray	CLAY; little to some fine to very fine sand, trace to little coarse	CL	trace 1/4" intact clam shells	0			
	47.5		5/5				to medium shell fragments						
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Soft	Gray	SAND - VERY FINE; and clay, trace medium shell fragments,	SC		0			
							trace silt						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0130

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0142
DATE: 1/8/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine	GP	1/4" intact shells, fragments up				
	42.0						sand, trace to some silt, clay lenses from 41.0'-41.5'		to 2-inches	0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0			41.5-45.0	Firm	Gray	CLAY; and fine to very fine sand, trace to some coarse to	CL	random 1-inch shell fragments	0			
	45.5						medium shell fragments						
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5			45.0-48.5	Soft	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to	SC					
	49.0						medium shell fragments, clay lenses			0			
	49.5												
	50.0			48.5-50.0	Soft	Gray	CLAY; some very fine sand, trace coarse to medium	CL		0			
							shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0142

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0154
DATE: 1/8/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.25	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP	trace intact 1/4" clam shells				
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0			44.0-45.0	Soft	Gray	SAND -FINE TO VERY FINE; some granular to medium	SP	clay pieces up to 1", trace intact	0			
	45.5						shell fragments, some clay, trace silt		1/4" shells				
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			45.0-48.0	Firm	Gray	CLAY; some very fine sand, trace coarse to medium shell	CL	shell increasing with depth, trace	0			
	48.5						fragments		1/4" intact shells				
	49.0									0			
	49.5			48.0-49.5	Soft	Gray	SAND - FINE TO VERY FINE; and clay, some shell fragments	SC	shell decreasing with depth				
	50.0			49.5-50.0	Soft	Gray	CLAY; little very fine sand, trace silt, trace medium shell	CL		0			
							fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0154

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0159
DATE: 1/8/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little granular to medium shell fragments	SP		0			
	42.5		5/5										
	43.0			42.0-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP		0			
	43.5												
	44.0			43.0-44.0	Firm	Gray	CLAY; and fine to very fine sand	CL		0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			44.0-47.0	Firm	Gray	CLAY; some fine to very fine sand, trace to some granular medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			47.0-49.5	Firm	Gray	SAND - FINE TO VERY FINE; some clay, trace shell, silt	SC	coarse to medium shell				
	50.0			49.5-50.0	Soft	Gray	CLAY; some fine to very fine sand, trace coarse to medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0159

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0164
DATE: 1/8/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0			40.0-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM	GP		0			
	43.5			43.0-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some fine to very fine,	GP					
	44.0						fine sand			0			
	44.5												
	45.0				Soft	Gray	SAND -FINE TO VERY FINE; some granular to medium	SP	clay pieces up to 1"	0			
	45.5						shell fragments, some clay, trace silt		trace 1/4" intact shells				
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5			43.5-48.5	Firm	Gray	CLAY; some very fine sand, trace to little coarse to medium	CL					
	49.0						shell fragments			0			
	49.5			48.5-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little shell	SC	coarse to medium shell				
	50.0			49.5-50.0	Soft	Gray	CLAY; little fine to very fine sand, trace coarse to medium	CL	fragments	0			
							shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0164

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0173
DATE: 1/9/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some fine to very fine sand, some silt	GP					
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5			40.5-45.5	Firm	Gray	CLAY; some fine to very fine sand, some silt, trace to little granular to medium shell fragments	ML					
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			45.5-48.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace shell	SC	shell fragments absent past 47'	0			
	48.5												
	49.0									0			
	49.5			48.0-49.5	Firm	Gray	CLAY	CL					
	50.0			49.5-50.0	Firm	Gray	CLAY; trace fine to very fine sand	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0173

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0169
DATE: 1/9/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some fine to very fine sand, little clay	GP					
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			40.5-49.0	Firm	Gray	CLAY; some fine to very fine sand, trace to no shell	CL	shell decreasing with depth	0			
	49.5			49.0-49.5	Firm	Gray	CLAY	CL					
	50.0			49.5-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0169

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0168
DATE: 1/9/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; and granular to medium shell fragments, trace silt, trace clay	SP	2" oyster shell				
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5			41.5-44.5	Firm	Gray	CLAY; little to some fine to coarse sand, trace to some granular to medium shell fragments	CL					
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5			44.5-48.5	Soft	Gray	SAND - VERY FINE; and clay, trace coarse to medium shell fragments, trace silt	SC	some clay in lenses				
	49.0									0			
	49.5												
	50.0			48.5-50.0	Firm	Gray	CLAY; little very fine sand, little silt	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0168

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0201
DATE: 1/9/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some very fine sand, some silt	GP	2" intact clam and snail shells				
	43.0									0			
	43.5			42.5-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some very fine sand, little clay	GP	intact oyster shell				
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0			43.5-46.0	Firm	Gray	CLAY; little to some very fine sand, trace medium shell fragments, trace silt	CL	clay easily rolled	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			46.0-49.5	Firm	Gray	SAND - VERY FINE; and clay, little to some medium shell*	SC	*fragments				
	50.0			49.5-50.0	Firm	Gray	CLAY; little very fine sand, trace medium shell	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0201

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0200
DATE: 1/10/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; trace to some coarse to medium shell fragments	SP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			41.5-44.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; trace silt	GP	intact 1/4" to 1/2" shells	0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5			44.0-46.5	Firm	Gray	CLAY; and fine to very fine sand, little to some granular to medium shell fragments	CL	1" shell fragments				
	47.0								decreasing with depth	0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			46.5-49.5	Firm	Gray	SAND - VERY FINE; and clay, trace coarse shell fragments	SC					
	50.0			49.5-50.0	Firm	Gray	CLAY; and fine to very fine sand, trace coarse to medium shell fragments	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0200

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0197
DATE: 1/10/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP	some small intact shells				
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			42.5-48.0	Firm	Gray	CLAY; and fine to very fine sand, trace to little coarse to	CL	2 intact conch shells, 2.5"-4"	0			
	48.5						medium shell fragments, trace silt						
	49.0									0			
	49.5			48.0-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace shell	SC	granular to medium shell				
	50.0			49.5-50.0	Firm	Gray	CLAY; little very fine sand	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0197

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0153
DATE: 1/10/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace granular to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5	41.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP	random 1" intact clam shells				
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			42.5-48.0	Firm	Gray	CLAY; and fine to very fine sand, trace to little coarse to medium shell fragments, trace silt	CL	2 intact conch shells, 2.5"-4"	0			
	48.5												
	49.0									0			
	49.5			48.0-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace shell	SC	granular to medium shell				
	50.0			49.5-50.0	Firm	Gray	CLAY; little very fine sand	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0153

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0141
DATE: 1/13/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			40.0-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some fine to very	GP	intact shells up to 1"				
	44.0						fine sand, some clay, trace silt			0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	43.5-47.5	Firm	Gray	CLAY; little very fine sand, trace coarse to medium	CL	shell increasing from 45.5-46.5',				
	48.0						shell fragments			0			
	48.5												
	49.0									0			
	49.5			47.5-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace shell, silt	SC	granular to mediuim shell				
	50.0			49.5-50.0	Firm	Gray	CLAY; little very fine sand	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0141

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0114
DATE: 1/13/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.0	Soft	Grn.Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP		0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			42.0-44.0	Soft	Grn.Gray	SHELL - GRANULAR TO MEDIUM; some fine to very fine sand, little silt, trace clay	GP	intact shells up to 1", clay at 42'	0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			44.0-48.0	Firm	Gray	CLAY; some very fine sand, trace to some very coarse to medium shell fragments	CL		0			
	48.5												
	49.0									0			
	49.5			48.0-49.5	Soft	Gray	SAND - FINE TO VERY FINE; and clay, trace to little shell	SC	very coarse to medium shell				
	50.0			49.5-50.0	Firm	Gray	CLAY; little fine to very fine sand	CL	no shell	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0114

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0028
DATE: 1/13/2020
GEOLOGIST: Sue Rogers/Chuck Sorden
DRILLER: Jared Link

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0									0			
	29.5												
	30.0									0			
	30.5												
	31.0									0			
	31.5												
	32.0									0			
	32.5		5/5										
	33.0			25.0-33.0	Soft	Grn. Gray	SAND - FINE TO VERY FINE; trace to little coarse to medium shell fragments	SP		0			
	33.5												
	34.0									0			
	34.5												
	35.0			33.0-35.0	Firm	Gray	SAND - FINE TO VERY FINE; little clay, little silt, trace to little coarse to medium shell fragments	ML		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0028

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0125
DATE: 1/14/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0			40.0-43.0	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments, trace silt	SP		0			
	43.5												
	44.0									0			
	44.5												
	45.0			43.0-45.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; trace silt	GP	random intact 1" shells, intact	0			
	45.5								1/4" clam shells				
	46.0									0			
	46.5												
	47.0									0			
	47.5		0/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.0-50.0	N/A	N/A	No recovery of soil samples from 45'-50'	N/A		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0125

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0137
DATE: 1/14/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; trace granular to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0			41.0-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some fine to very fine sand, some silt	GP	intact shells up to 1"	0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			43.0-47.0	Firm	Gray	CLAY; little fine to very fine sand, trace to little coarse to medium shell fragments	CL	shell increasing from 45'-47'	0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell fragments	SC	shell decreasing with depth	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0137

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0149
DATE: 1/14/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5	40.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very	GP	intact very small to large shells				
	43.0						fine sand, trace silt		up to 1" across clam and snail	0			
	43.5												
	44.0									0			
	44.5												
	45.0			42.5-45.0	Firm	Gray	CLAY; little fine to very fine sand, trace to some coarse	CL		0			
	45.5						to medium shell fragments						
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			45.0-49.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little granular	SC		0			
	49.5						to medium shell fragments						
	50.0			49.0-50.0	Firm	Gray	CLAY; little fine to very fine sand, trace granular to	CL	shell decreasing with depth	0			
							shell fragments						
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0149

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0195
DATE: 1/14/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; little to some granular to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0			41.0-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some fine to very fine sand, some silt	GP	up to 1" across clam and snail	0			
	43.5								3' intact conch shell				
	44.0									0			
	44.5												
	45.0									0			
	45.5			43.0-45.5	Firm	Gray	CLAY; little fine to very fine sand, trace coarse to medium shell fragments	CL					
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			45.5-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, little shell fragments	SC	cg to mg shell, less with depth				
	50.0			49.0-50.0	Firm	Gray	CLAY; little fine to very fine sand	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0195

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0150
DATE: 1/14/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			40.0-43.5	Soft	Gray	SAND - FINE TO VERY FINE; little silt, trace to little granular	SP					
	44.0						to medium shell fragments			0			
	44.5												
	45.0			43.5-45.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and sand, some silt	GP	random 0.5" intact clam shells	0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		2/5	45.0-47.5	Gray	Firm	CLAY; little very fine sand, trace to some granular to	CL					
	48.0						coarse shell fragments			0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.5-50.0	N/A	N/A	NO SOIL SAMPLES RECOVERED, WASH-OUT	N/A		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0150

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0148
DATE: 1/15/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			41.5-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, trace silt	GP	One 2" intact clam				
	44.0									0			
	44.5												
	45.0			43.5-45.0	Firm	Gray	CLAY; and fine to very fine sand, little to some granular to medium shell fragments	CL		0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0			45.0-48.0	Firm	Gray	CLAY; some fine to very fine sand, trace to little granular to medium shell fragments	CL		0			
	48.5												
	49.0									0			
	49.5												
	50.0			48.0-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse to medium shell	SC	shell decreasing with depth	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0148

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0136
DATE: 1/15/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - FINE TO VERY FINE; little silt, trace to little granular to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5	41.0-42.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; trace silt	GP	Random 1" clam shells				
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	42.5-47.5	Firm	Gray	CLAY; some fine to very fine sand, little granular to medium shell fragments	CL	Random 1" intact clam shells				
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.5-50.0	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace coarse shell fragments	SC	clay lenses throughout	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0136

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0115
DATE: 1/15/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - FINE TO VERY FINE; little silt, trace coarse to medium shell fragments	SP	shell increasing with depth				
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5			41.5-44.5	Soft	Gray	SHELL - GRANULAR TO MEDIIUM; trace silt	GP	1" intact clam shells				
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5			44.5-48.5	Firm	Gray	CLAY; some fine to very fine sand, trace to little granular to medium shell fragments	CL	random 1" shell fragment				
	49.0									0			
	49.5												
	50.0			48.5-50.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0115

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0212
DATE: 1/16/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		3/5	40.0-42.5	Soft	Gray	SAND - MEDIUM TO FINE; some coarse to medium shell fragments, trace silt	SP					
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		0/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			42.5-50.0	N/A	N/A	NO SOIL SAMPLES RECOVERED, WASH-OUT	N/A		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0212

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0211
DATE: 1/16/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SAND - MEDIUM TO FINE; trace to little granular shell fragments	SP					
	42.0									0			
	42.5		5/5										
	43.0			41.5-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and medium to fine sand, trace silt	GP	1-2" intact clam shells	0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	43.0-47.5	Firm	Gray	CLAY; little medium to fine sand, trace to some granular to medium shell fragments	CL	random 3" intact conch shell				
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.5-50.0	Firm	Gray	SAND - MEDIUM TO FINE; and clay, trace medium to coarse shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X ___ Well I.D. #: AS0211

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0191
DATE: 1/16/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			40.0-44.0	Soft	Gray	SAND - MEDIUM TO FINE; little granular to medium shell fragments	SP		0			
	44.5												
	45.0			44.0-45.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and medium to fine	GP	random intact 1" clam shells	0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		0/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.0-50.0	N/A	N/A	NO SOIL SAMPLES RECOVERED, WASH-OUT	N/A		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0191

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0189
DATE: 1/16/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0			40.0-44.0	Soft	Gray	SAND - MEDIUM TO FINE; trace to little coarse to medium shell fragments	SP		0			
	44.5												
	45.0									0			
	45.5												
	46.0			44.0-46.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM	GP	2" intact clam shells	0			
	46.5												
	47.0			46.0-47.0	Firm	Gray	CLAY; some medium to fine sand, little to some granular to medium shell fragments	CL		0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0			47.0-49.0	Firm	Gray	CLAY; little medium to fine sand, trace granular to medium shell fragments	CL		0			
	49.5												
	50.0			49.0-50.0	Firm	Gray	SAND - MEDIUM TO FINE; and clay, trace medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0189

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0186
DATE: 1/16/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			40.0-43.5	Soft	Gray	SAND - MEDIUM TO FINE; trace granular to medium	SP	intact very small <1/4" clam shells				
	44.0						shell fragments			0			
	44.5												
	45.0			43.5-45.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM	GP	1.5" intact clam shells	0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		0/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.0-50.0	N/A	N/A	NO SOIL SAMPLES RECOVERED, WASH-OUT	N/A	assumed to be clayey soils	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0186

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0039
DATE: 1/17/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0			25.0-29.0	Soft	Gray	SAND - FINE TO VERY FINE; trace granular shell	SP	intact 'shells <1/4"	0			
	29.5						shells						
	30.0			29.0-30.0	Soft	Gray	SAND - FINE TO VERY FINE; trace silt, trace clay, trace granular shell	SP	intact shells <1/4"	0			
	30.5												
	31.0									0			
	31.5												
	32.0									0			
	32.5		0/5										
	33.0									0			
	33.5												
	34.0									0			
	34.5												
	35.0			30.0-35.0	N/A	N/A	NO SOIL SAMPLES COLLECTED, WASH-OUT	N/A		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0039

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0038
DATE: 1/17/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0			25.0-27.0	Soft	Gray	SAND-VERY FINE; trace granular shell, trace silt	SP	intact shells <1/4"	0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0									0			
	29.5			27.0-29.5	Soft	Gray	SAND- VERY FINE; trace granular shell		intact clam shells <1/4"				
	30.0			29.5-30.0	Soft	Gray	SAND- FINE TO VERY FINE; trace silt, trace to little clay, trace granular shell	SP	intact clam shells <1/4"	0			
	30.5												
	31.0									0			
	31.5												
	32.0			30.0-32.0	Soft	Gray	SAND- FINE TO VERY FINE; little granular to medium shell fragments	SP		0			
	32.5		2/5										
	33.0									0			
	33.5												
	34.0									0			
	34.5												
	35.0			32.0-35.0	N/A	N/A	NO SOIL SAMPLES COLLECTED, WASH-OUT	N/A		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0038

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0036
DATE: 1/20/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0			25.0-29.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell fragments	SP		0			
	29.5												
	30.0			29.0-30.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell fragments, trace silt	SP		0			
	30.5												
	31.0									0			
	31.5												
	32.0			30.0-32.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell	SP		0			
	32.5		5/5	32.0-32.5	Soft	Gray	SAND - VERY FINE; some silt, clay, trace granular to medium shell fragments	SC					
	33.0									0			
	33.5												
	34.0									0			
	34.5												
	35.0			34.0-35.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell fragments	SP		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0036

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0033
DATE: 1/20/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5	25.0-27.5	Soft	Gray	SAND - VERY FINE; trace to little granular to medium shell fragments	SP					
	28.0									0			
	28.5												
	29.0									0			
	29.5												
	30.0			27.0-30.25	Soft	Gray	SAND - FINE TO VERY FINE; little to some shell fragments*	SP	1" scallop shell	0			
	30.5			30.25-30.75	Soft	Gray	SAND - FINE TO VERY FINE; little to some shell fragments*, some silt, some clay	SC	* granular to medium shell				
	31.0									0			
	31.5			30.75-31.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and very fine sand	GP					
	32.0									0			
	32.5		5/5										
	33.0									0			
	33.5			31.5-33.5	Soft	Gray	SAND - FINE TO VERY FINE; trace silt, trace clay, trace shell*	SP					
	34.0			33.5-34.0	Soft	Gray	SAND- FINE ; some silt, some clay	SC		0			
	34.5												
	35.0			34.0-35.0	Soft	Gray	SAND - VERY FINE; and granular to medium shell fragments	SP		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0033

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0035
DATE: 1/20/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0			25.0-27.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell	SP	very small intact shells <1/4"	0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0									0			
	29.5			27.0-29.5	Soft	Gray	SAND - VERY FINE; some silt, trace to some shell *, trace clay	SP	*granular to medium shell				
	30.0			29.5-30.0	Firm	Gray	CLAY; little very fine sand, little silt, trace shell fragments*	CL		0			
	30.5			30.0-32.25	Firm	Gray	CLAY,SILT, VERY FINE SAND; some shell fragments*	ML					
	31.0									0			
	31.5												
	32.0									0			
	32.5		5/5										
	33.0			32.25-33.0	Soft	Gray	CLAY; and very fine sand, some silt, trace to little shell*	CL		0			
	33.5												
	34.0			33.0-34.0	Soft	Gray	SAND - FINE TO VERY FINE; trace clay, trace shell*	SC	random 2" shell fragments	0			
	34.5												
	35.0			34.0-35.0	Soft	Gray	SAND - MEDIUM; and granular to medium shell fragments	GP		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0035

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0037
DATE: 1/20/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0									0			
	29.5			25.0-29.5	Soft	Gray	SAND - FINE TO VERY FINE; trace coarse to medium shell fragments	SP					
	30.0									0			
	30.5												
	31.0			29.5-31.0	Soft	Gray	SAND - FINE TO VERY FINE; trace to little silt, trace coarse to medium shell fragments	SP		0			
	31.5												
	32.0									0			
	32.5		5/5	31.0-32.5	Firm	Gray	CLAY; and very fine sand, some silt, trace to little shell*	CL					
	33.0									0			
	33.5			32.5-33.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, some clay	GC	some intact <1/4" shells				
	34.0									0			
	34.5												
	35.0			33.5-35.0	Soft	Gray	SAND - FINE TO VERY FINE; little clay, trace to little granular to medium shell fragments	GP		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0037

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0041
DATE: 1/21/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0									0			
	29.5			25.0-29.5	Soft	Gray	SAND - VERY FINE; trace coarse to medium shell fragments	SP	some intact 1/4" clam shells					
	30.0									0			
	30.5												
	31.0			29.5-31.0	Firm	Gray	CLAY; little very fine sand, trace coarse to medium shell fragments	CL	solid clay lenses	0			
	31.5												
	32.0			31.0-32.0	Soft	Gray	SHELL- GRANULAR TO MEDIUM; and very fine sand, little clay, trace silt	GC		0			
	32.5		5/5										
	33.0									0			
	33.5												
	34.0									0			
	34.5												
	35.0			32.0-35.0	Soft	Gray	SAND - FINE TO VERY FINE; little clay, trace granular to medium shell fragments	SC		0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0041

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0040
DATE: 1/21/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0									0			
	29.5			25.0-29.5	Soft	Gray	SAND - VERY FINE; trace coarse to medium shell frag.	SP	some intact 1/4" clam shells				
	30.0			29.5-30.0	Firm	Gray	CLAY; little fine to very fine sand, trace shell fragments*	CL	*coarse to medium shell	0			
	30.5												
	31.0			30.0-31.0	Soft	Gray	SAND - VERY FINE; trace coarse to medium shell frag.	SP		0			
	31.5			31.0-31.5	Soft	Gray	SAND - VERY FINE; and shell fragments*, little clay	SC					
	32.0									0			
	32.5		5/5										
	33.0									0			
	33.5												
	34.0									0			
	34.5												
	35.0			31.5-35.0	Soft	Gray	SAND - VERY FINE; trace clay, trace to some granular to medium shell fragments	SP	Random larger shell fragments	0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X ___ Well I.D. #: AS0040

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0042
DATE: 1/21/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0									0			
	28.5												
	29.0			25.0-29.0	Soft	Gray	SAND - VERY FINE; trace coarse to medium shell fragments	SP	some intact 1/4" clam shells	0			
	29.5												
	30.0									0			
	30.5												
	31.0			29.0-31.0	Firm	Gray	CLAY; trace very fine sand, trace coarse to medium shell fragments	CL		0			
	31.5												
	32.0			31.0-32.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and very fine sand, little clay	GP		0			
	32.5		5/5										
	33.0									0			
	33.5												
	34.0			32.0-34.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace granular to medium shell fragments	SC		0			
	34.5												
	35.0			34.0-35.0	Soft	Gray	SAND - MEDIUM TO VERY FINE; little to some granular to medium shell fragments, trace clay, trace silt	SP	some intact 1/4' clams	0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X ___ Well I.D. #: AS0042

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0034
DATE: 1/21/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	25.0									0			
	25.5												
	26.0									0			
	26.5												
	27.0									0			
	27.5		5/5										
	28.0			25.0-28.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell fragments	SP	some intact 1/4" clam shells	0			
	28.5												
	29.0			28.0-29.0	Soft	Gray	SAND - VERY FINE; trace granular to medium shell, some silt, trace to little clay	SP	some intact 1/4" clam shells	0			
	29.5												
	30.0									0			
	30.5			29.0-30.5	Firm	Gray	CLAY; trace very fine sand, trace to little coarse to medium shell fragments	CL					
	31.0									0			
	31.5			30.5-31.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some very fine sand, little clay, trace to little silt	GC	some larger shell pieces				
	32.0									0			
	32.5		5/5										
	33.0									0			
	33.5												
	34.0			31.5-34.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace granular to medium shell fragments, trace silt	SC		0			
	34.5												
	35.0			34.0-35.0	Soft	Gray	SAND - MEDIUM TO FINE; and granular to medium shell fragments, trace clay, trace silt	SP	some intact 1/4' clams	0			
							BORING TERMINATED 35'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0034

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0118
DATE: 1/22/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.25	Soft	Gray	CLAY; some very fine sand, some silt, trace coarse to medium shell fragments	CL					
	41.0									0			
	41.5												
	42.0			40.25-42.0	Soft	Gray	SAND - MEDIUM TO VERY FINE; some silt, trace clay, trace to little granular to medium shell fragments	SP		0			
	42.5		5/5										
	43.0									1			
	43.5			42.0-43.5	Soft	Gray	SAND - MEDIUM TO VERY FINE; some silt, some clay	SC	large conch shell pieces				
	44.0									3			
	44.5												
	45.0			43.5-45.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and medium to very fine sand, trace silt	GP					
	45.5												
	46.0												
	46.5												
	47.0												
	47.5		5/5										
	48.0												
	48.5												
	49.0												
	49.5												
	50.0			45.0-50.0	N/A	N/A	NO SOIL SAMPLES RECOVERED, WASH-OUT	N/A	45'-50' no PID results				
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0118

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0152
DATE: 1/23/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.5	Firm	Gray	CLAY	CL					
	41.0									0			
	41.5												
	42.0			40.5-42.0	Soft	Gray	SAND - VERY FINE; some clay, trace to little silt, trace to	SP	some 1/4" intact shells	0			
	42.5		5/5				little granular to medium shell fragments						
	43.0									0			
	43.5												
	44.0			42.0-44.0	Soft	Gray	SAND - MEDIUM TO VERY FINE; and granular to medium	SP	intact 1" clam shells	0			
	44.5						shell fragments, trace silt						
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0			44.0-47.0	Firm	Gray	CLAY; little very fine sand, trace to some granular to	CL	shell increasing with depth	0			
	47.5		2/5				medium fragments, trace silt						
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.0-50.0	N/A	N/A	NO SOIL SAMPLES RECOVERED, WASH-OUT	N/A		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0152

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0205
DATE: 1/23/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5			40.0-41.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; and fine to very fine sand, some larger intact shells	GP					
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5												
	46.0									0			
	46.5												
	47.0									0			
	47.5		5/5	41.5-47.5	Firm	Gray	CLAY; little very fine sand, trace to little granular to medium shell fragments	CL	dense clay				
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			47.5-50.0	Soft	Gray	SAND - VERY FINE; and clay, trace to none granular to medium shell fragments	SC		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X ___ Well I.D. #: AS0205

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0171
DATE: 1/28/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0			40.0-41.0	Soft	Gray	SAND - MEDIUM TO VERY FINE; trace to little coarse to medium shell fragments	SP		0			
	41.5												
	42.0									0			
	42.5		5/5										
	43.0									0			
	43.5			41.0-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM	GP	intact shells up to 2"				
	44.0			43.5-44.0	Firm	Gray	SHELL - GRANULAR TO MEDIUM; and clay	GC	intact shells up to 2"	0			
	44.5												
	45.0									0			
	45.5												
	46.0			44.0-46.0	Firm	Gray	CLAY; some fine to very fine sand, little to some granular	CL	random large shell pieces	0			
	46.5						to medium shell fragments, trace silt						
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			46.0-49.5	Firm	Gray	SAND - FINE TO VERY FINE; and clay, trace to little shell**	SC	** granular to medium frag.				
	50.0			49.5-50.0	Firm	Gray	CLAY - and fine to very fine sand, trace shell **	SC	and clay lenses	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0171

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0192
DATE: 1/28/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5												
	41.0									0			
	41.5												
	42.0			40.0-42.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some medium to very fine sand	GP	up to 2" intact snail and clam	0			
	42.5		5/5										
	43.0			42.0-43.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some medium to very fine sand, some clay	GC		0			
	43.5												
	44.0									0			
	44.5												
	45.0									0			
	45.5			43.0-45.5	Firm	Gray	CLAY; little very fine sand, trace to little granular to medium shell fragments	CL	random large shell pieces				
	46.0								and up to 3" intact	0			
	46.5												
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5												
	50.0			45.5-50.0	Soft	Gray	SAND - FINE TO VERY FINE; some clay, little granular to medium shell fragments	SC	decreasing shell with depth	0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

Converted to Well: Yes X No Well I.D. #: AS0192

Tetra Tech, Inc.

BORING LOG

PROJECT NAME: Hypergol Maint. Fac. North
PROJECT NUMBER: 112G08982
DRILLING COMPANY: Groundwater Protection, Inc.
DRILLING RIG: Geoprobe Sonic Rig 8140LS

BORING No.: HMPN-AS0190
DATE: 1/28/2020
GEOLOGIST: Sue Rogers
DRILLER: Dave Longino

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	40.0									0			
	40.5			40.0-40.5	Soft	Gray	SAND - MEDIUM TO FINE; trace to little granular to	SP					
	41.0						medium shell fragments, some 1/4" intact			0			
	41.5												
	42.0			40.5-42.0	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some medium to	GP	trace intact 1/4" and larger shell	0			
	42.5		5/5				fine sand, trace silt		fragments				
	43.0									0			
	43.5			42.0-43.5	Soft	Gray	SHELL - GRANULAR TO MEDIUM; some medium to fine	GC	4" intact clam shell				
	44.0						sand, some clay, trace silt			0			
	44.5												
	45.0									0			
	45.5												
	46.0			43.5-46.0	Firm	Gray	CLAY; some fine to very fine sand, little to some granular	CL	large pieces, including 2"	0			
	46.5						to medium shell fragments		conch shell fragment				
	47.0									0			
	47.5		5/5										
	48.0									0			
	48.5												
	49.0									0			
	49.5			46.0-49.5	Soft	Gray	SAND - FINE TO VERY FINE; some clay, trace shell*	SC	*granular to medium shell				
	50.0			49.5-50.0	Firm	Gray	CLAY; some fine to very fine sand	CL		0			
							BORING TERMINATED 50'						

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: trace = 1-10 % of total sample; little = 11-20 % of total sample; some = 21-35 % of total sample; And = 36-50 % of total sample; All caps = greater than 50 % of total sample

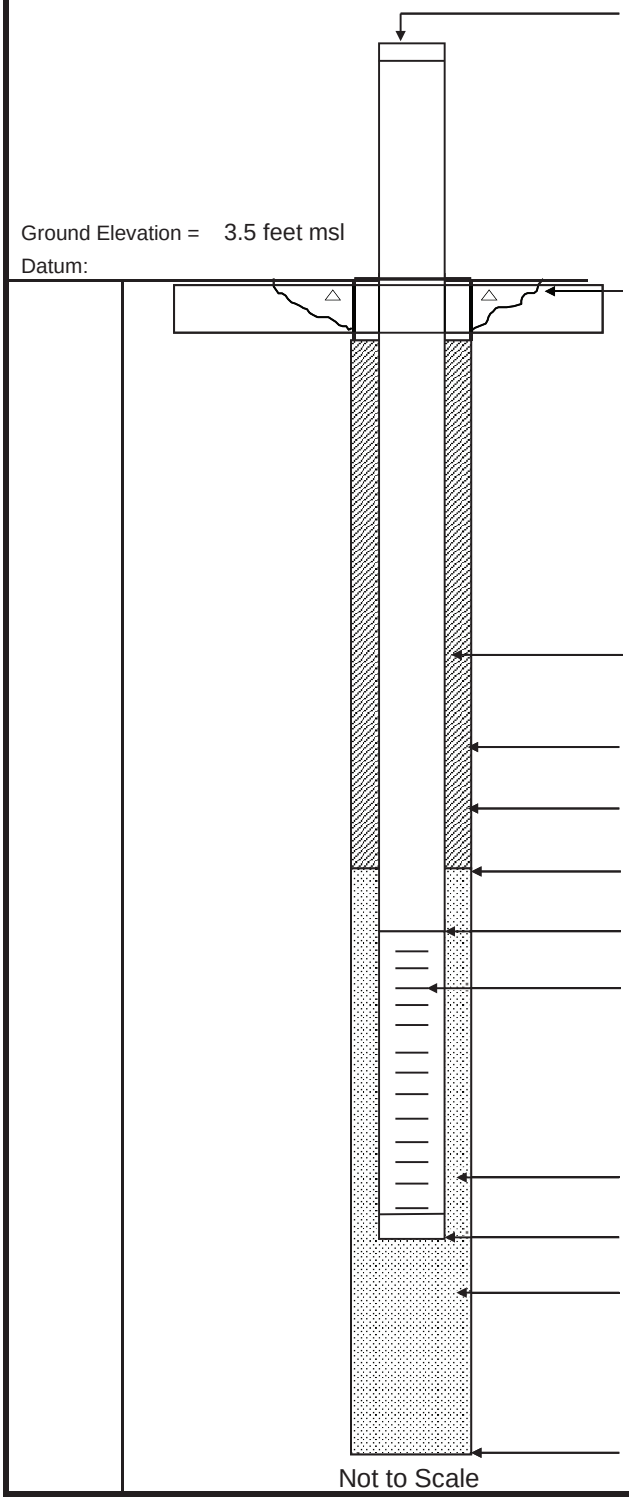
Converted to Well: Yes X No Well I.D. #: AS0190

Tetra Tech, Inc.

WELL No.: MW0045

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0045
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	C. Sorden	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 7.02 / feet msl
Above-grade completion

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 22.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 24.5'

Elevation / Depth of Top of Screen: / 25.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 35.0'

Elevation / Depth of Bottom of Filter Pack: / 35.0'

Type of Backfill Below Well:
Undisturbed Native Soil

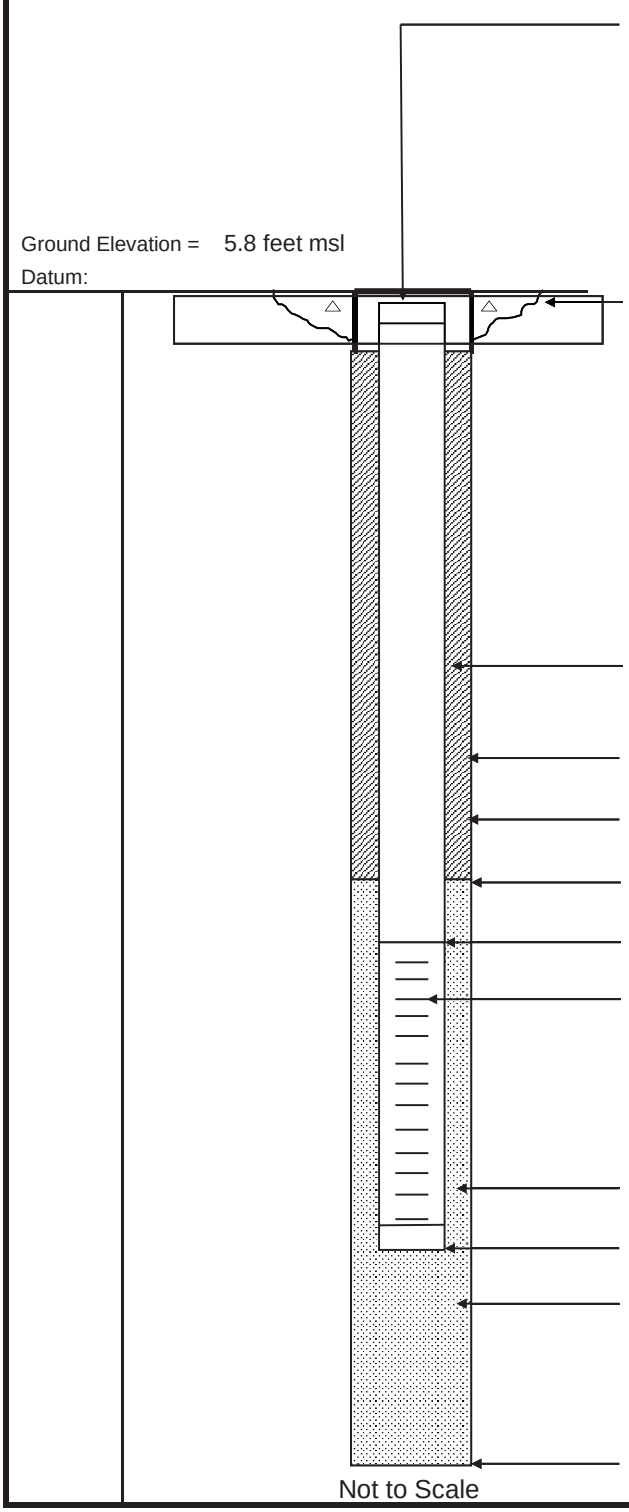
Elevation / Total Depth of Borehole: / 35.0'

Tetra Tech, Inc.

WELL No.: MW0033

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0033
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 5.61 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 42.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 44.5'

Elevation / Depth of Top of Screen: / 45.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 50.0'

Elevation / Depth of Bottom of Filter Pack: / 50.0'

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 50.0'

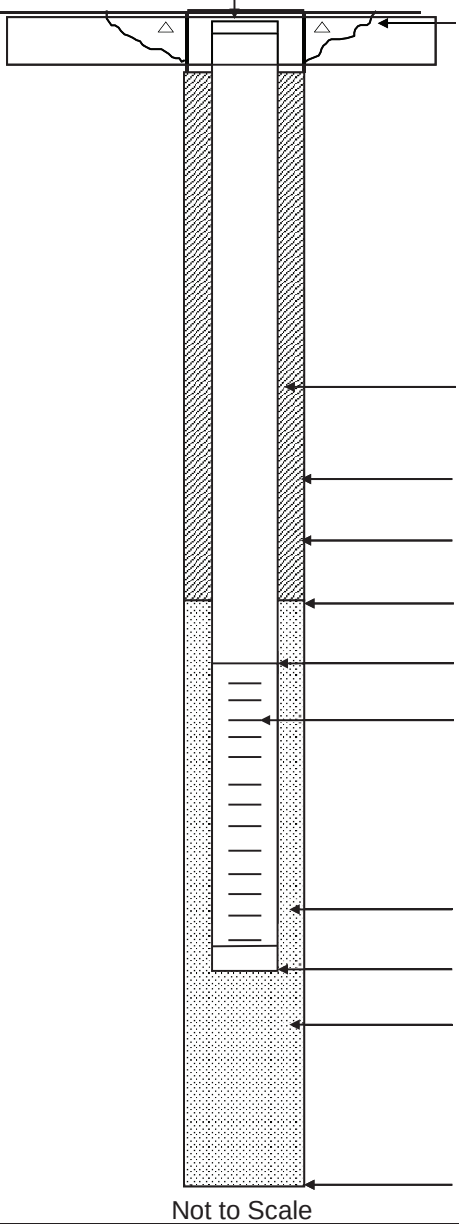
Tetra Tech, Inc.

WELL No.: MW0031

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0031
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 5.8 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 5.65 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 27.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 29.5'

Elevation / Depth of Top of Screen: / 30.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 40.0'

Elevation / Depth of Bottom of Filter Pack: / 40.0'

Type of Backfill Below Well:
Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 40.0'

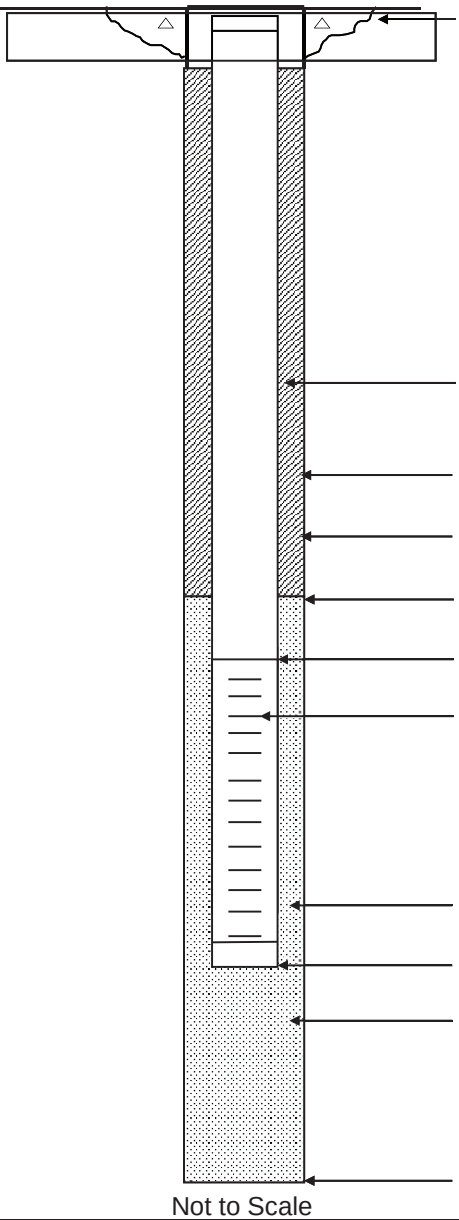
Tetra Tech, Inc.

WELL No.: MW0029

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0029
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 5.8 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 5.60 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 7.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 9.5'

Elevation / Depth of Top of Screen: / 10.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 20.0'

Elevation / Depth of Bottom of Filter Pack: / 20.0'

Type of Backfill Below Well:
Undisturbed Native Soil

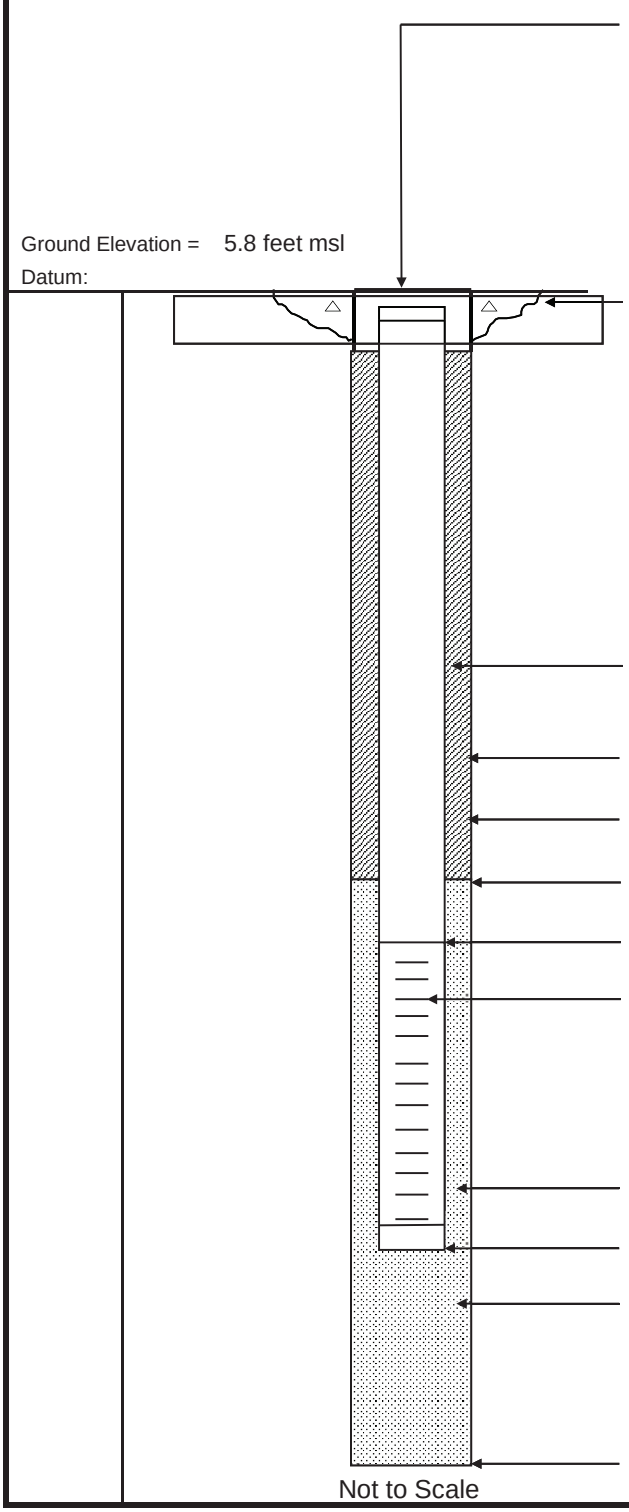
Elevation / Total Depth of Borehole: / 20.0'

Tetra Tech, Inc.

WELL No.: MW0034

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0034
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 6.12 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 7.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 9.5'

Elevation / Depth of Top of Screen: / 10.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 20.0'

Elevation / Depth of Bottom of Filter Pack: / 20.0'

Type of Backfill Below Well: Undisturbed Native Soil

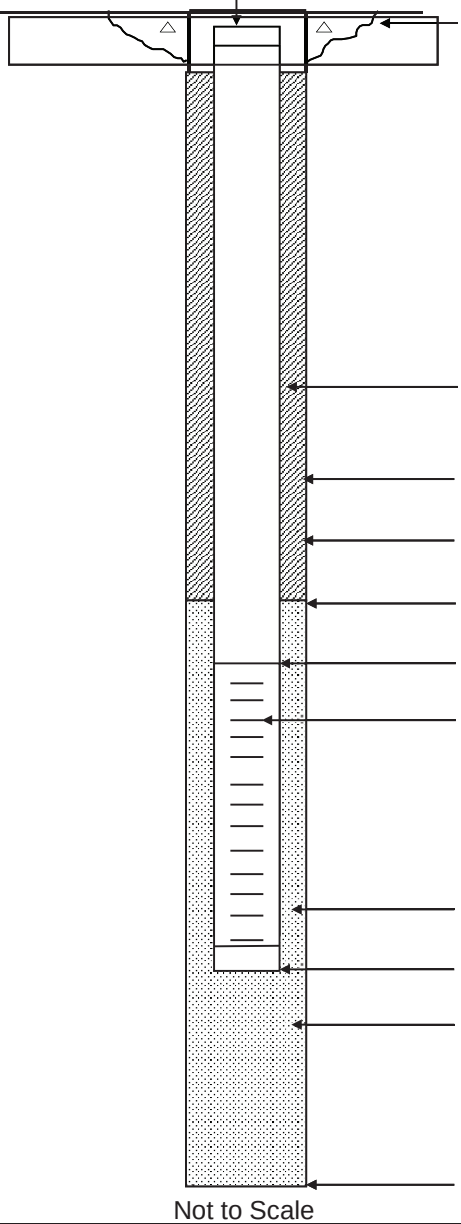
Elevation / Total Depth of Borehole: / 20.0'

Tetra Tech, Inc.

WELL No.: MW0035

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0035
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/16/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 6.09 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 27.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 29.5'

Elevation / Depth of Top of Screen: / 30.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 40.0'

Elevation / Depth of Bottom of Filter Pack: / 40.0'

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 40.0'

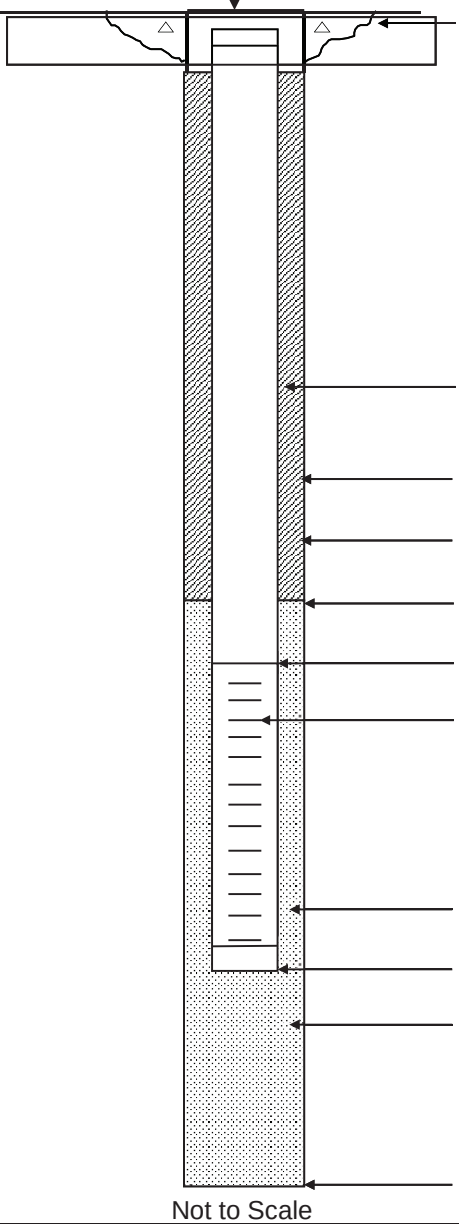
Tetra Tech, Inc.

WELL No.: MW0032

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0032
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 5.8 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 5.50 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 37.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 39.5'

Elevation / Depth of Top of Screen: / 40.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0'

Elevation / Depth of Bottom of Filter Pack: / 45.0'

Type of Backfill Below Well:
Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 45.0'

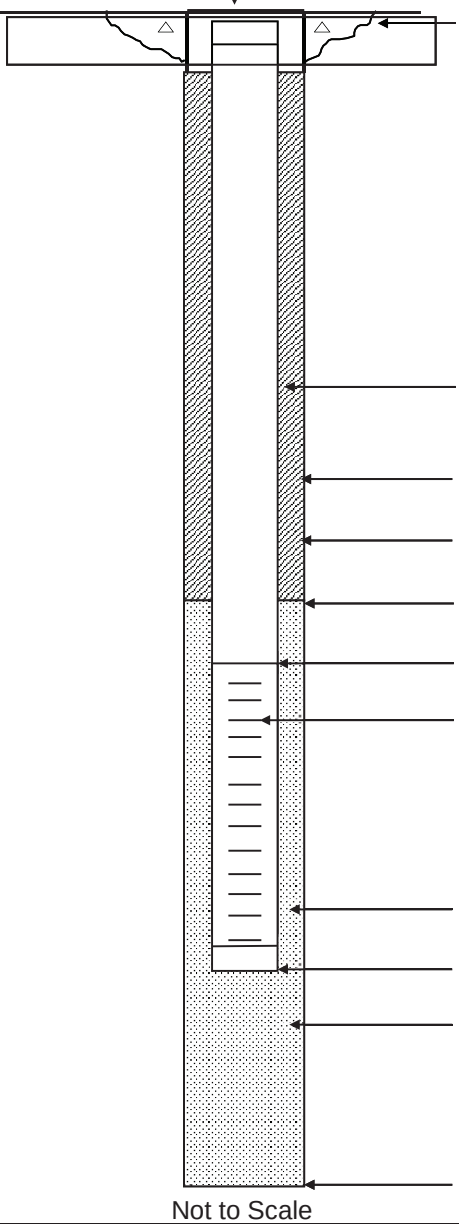
Tetra Tech, Inc.

WELL No.: MW0030

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0030
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 5.8 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 5.70 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 17.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 19.5'

Elevation / Depth of Top of Screen: / 20.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 30.0'

Elevation / Depth of Bottom of Filter Pack: / 30.0'

Type of Backfill Below Well:
Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 30.0'

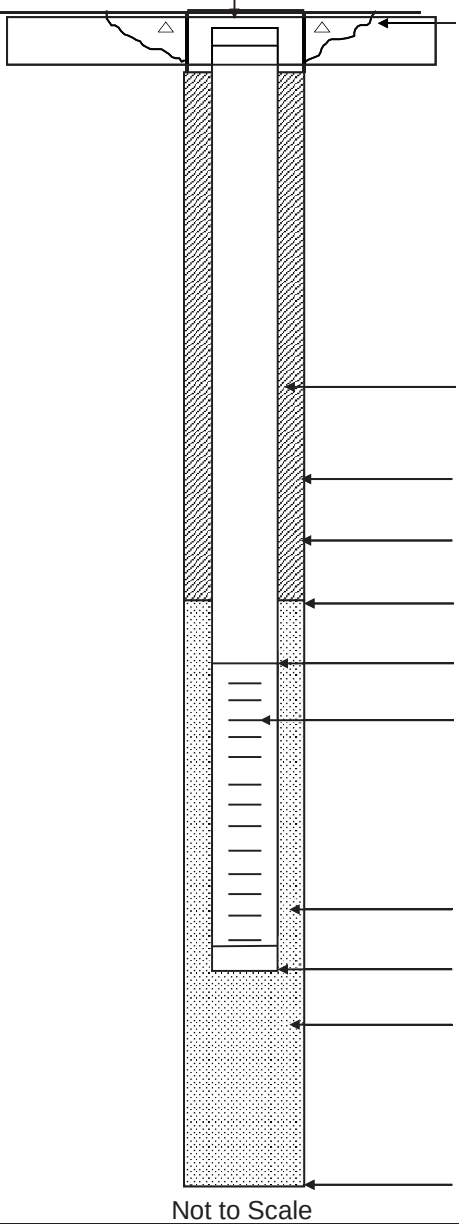
Tetra Tech, Inc.

WELL No.: MW0036

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0036
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 4.0 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 3.90 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 7.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 9.5'

Elevation / Depth of Top of Screen: / 10.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 20.0'

Elevation / Depth of Bottom of Filter Pack: / 20.0'

Type of Backfill Below Well:
Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 20.0'

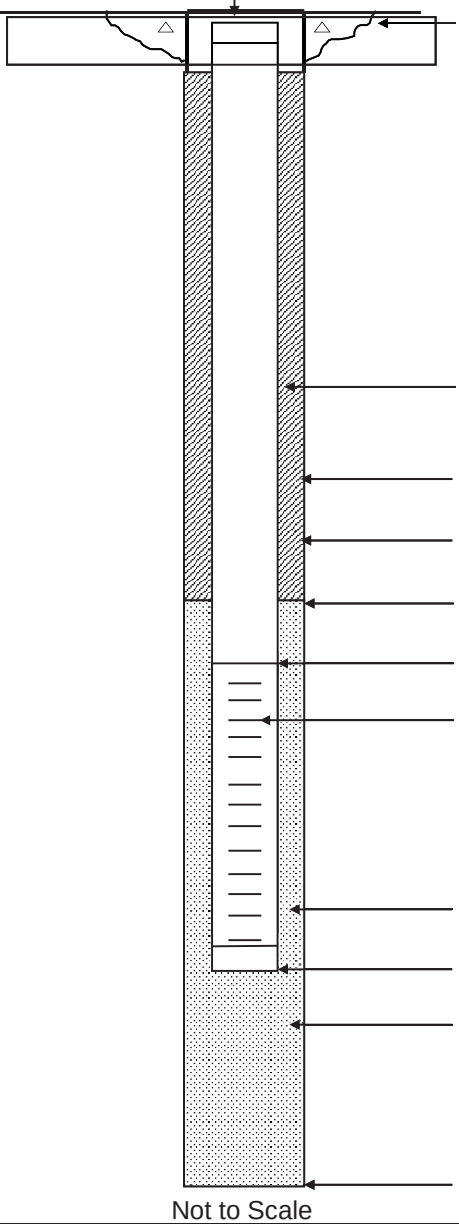
Tetra Tech, Inc.

WELL No.: MW0042

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0042
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 5.0 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 4.88 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 37.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 39.5'

Elevation / Depth of Top of Screen: / 40.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0'

Elevation / Depth of Bottom of Filter Pack: / 45.0'

Type of Backfill Below Well:
Undisturbed Native Soil

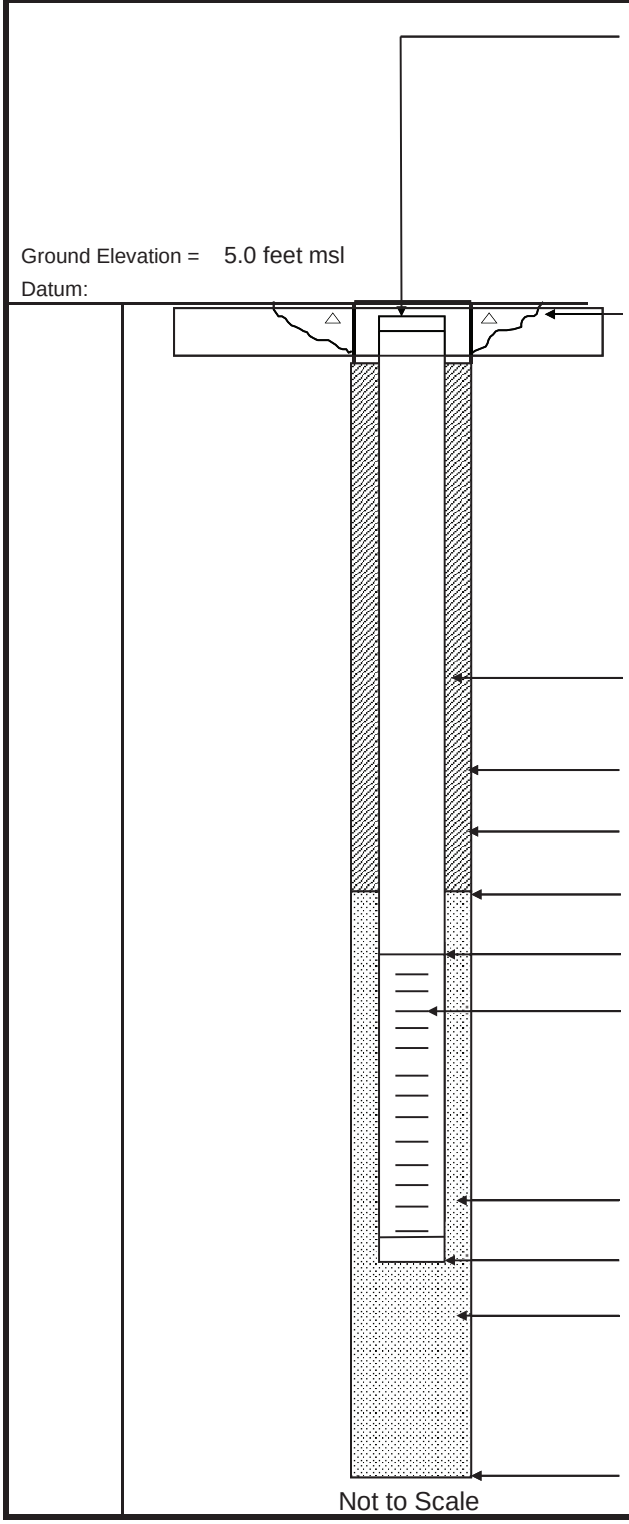
Elevation / Total Depth of Borehole: / 45.0'

Tetra Tech, Inc.

WELL No.: MW0041

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0041
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 4.89 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 27.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 29.5'

Elevation / Depth of Top of Screen: / 30.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 40.0'

Elevation / Depth of Bottom of Filter Pack: / 40.0'

Type of Backfill Below Well: Undisturbed Native Soil

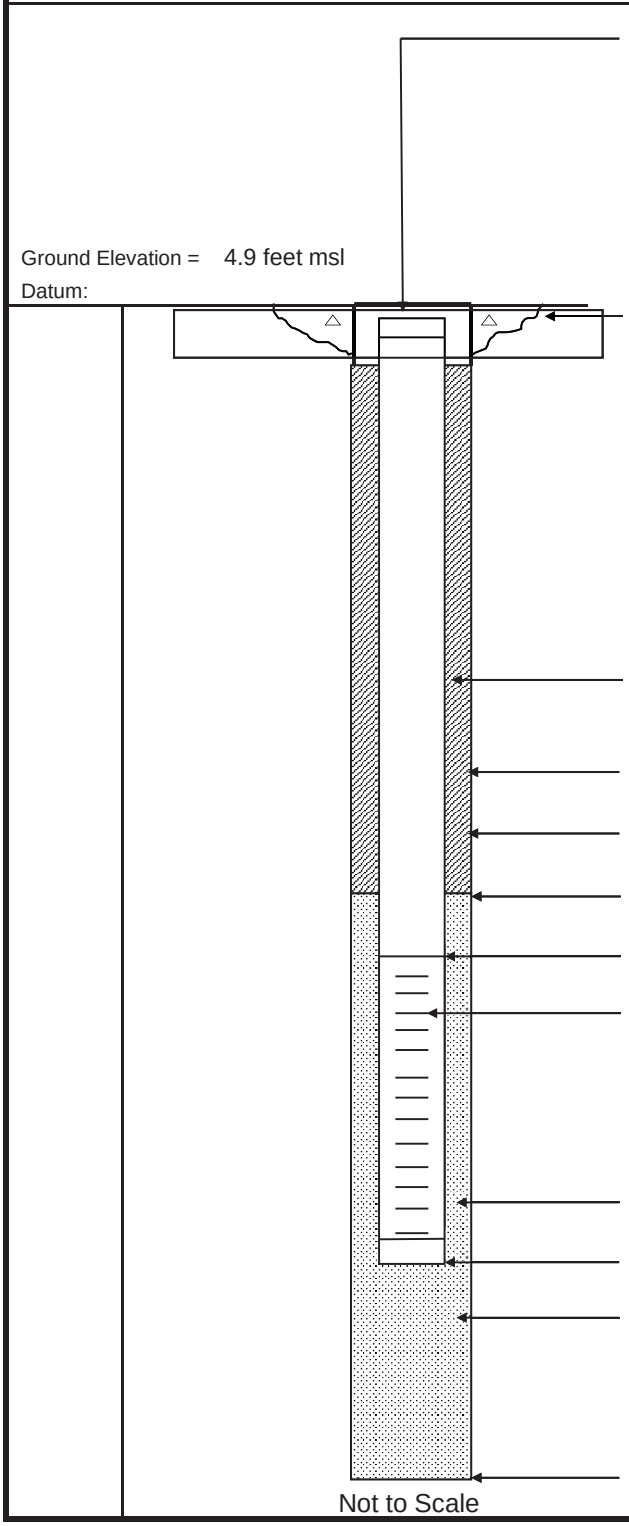
Elevation / Total Depth of Borehole: / 40.0'

Tetra Tech, Inc.

WELL No.: MW0044

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0044
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 4.77 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 37.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 39.5'

Elevation / Depth of Top of Screen: / 40.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0'

Elevation / Depth of Bottom of Filter Pack: / 45.0'

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 45.0'

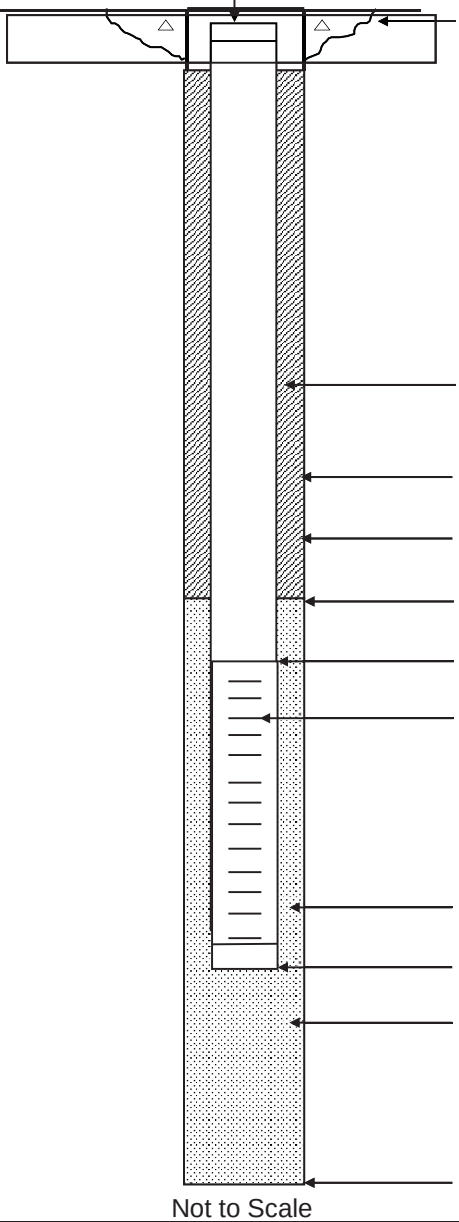
Tetra Tech, Inc.

WELL No.: MW0043

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0043
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/20/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 4.9 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 4.76 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 27.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 29.5'

Elevation / Depth of Top of Screen: / 30.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 40.0'

Elevation / Depth of Bottom of Filter Pack: / 40.0'

Type of Backfill Below Well:
Undisturbed Native Soil

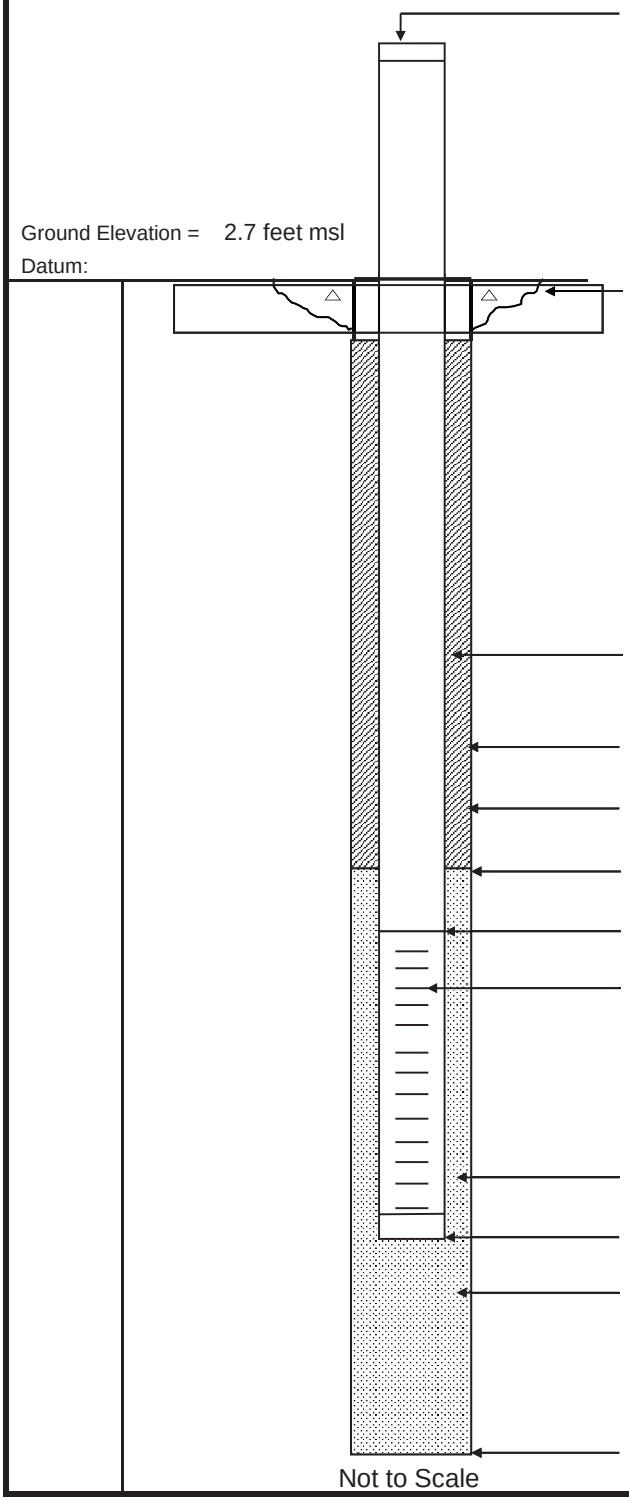
Elevation / Total Depth of Borehole: / 40.0'

Tetra Tech, Inc.

WELL No.: MW0027

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0027
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	C. Sorden	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 6.35 / feet msl

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 37.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 39.5'

Elevation / Depth of Top of Screen: / 40.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0'

Elevation / Depth of Bottom of Filter Pack: / 45.0'

Type of Backfill Below Well: Undisturbed Native Soil

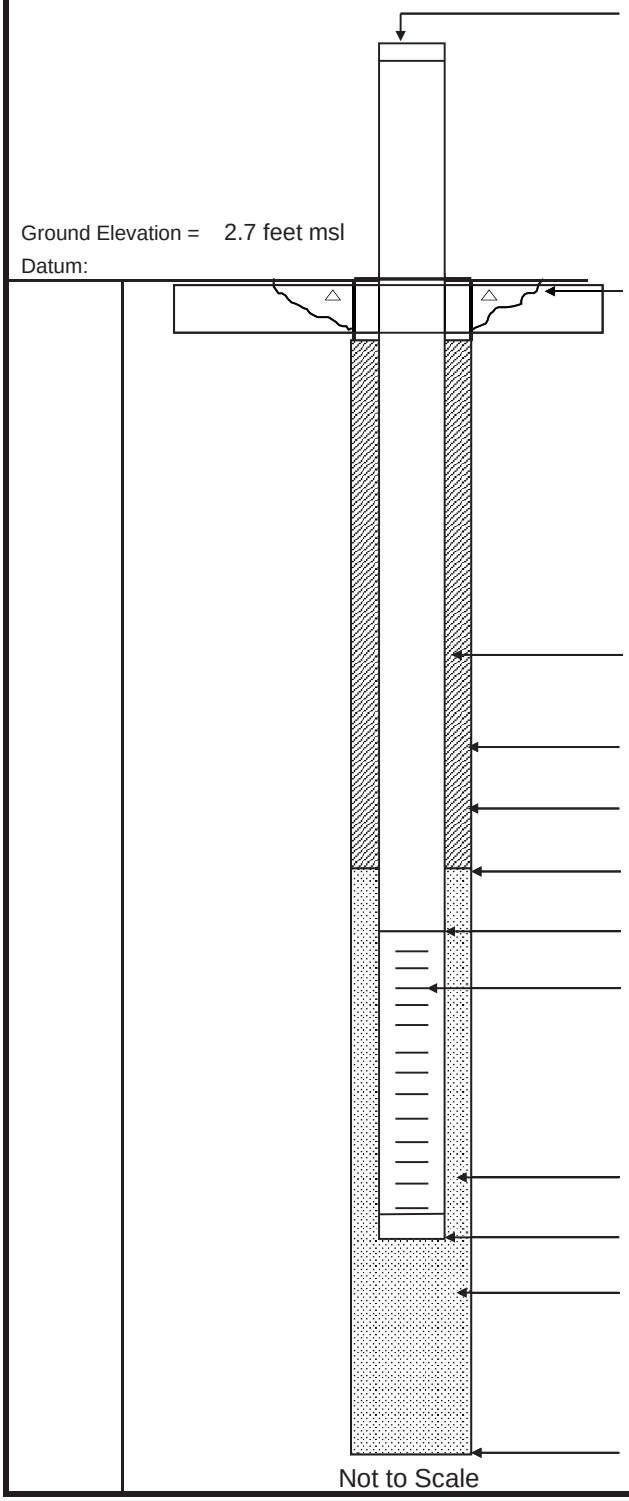
Elevation / Total Depth of Borehole: / 45.0'

Tetra Tech, Inc.

WELL No.: MW0028

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0028
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	C. Sorden	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 6.18 / feet msl

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 42.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 44.5'

Elevation / Depth of Top of Screen: / 45.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 50.0'

Elevation / Depth of Bottom of Filter Pack: / 50.0'

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 50.0'

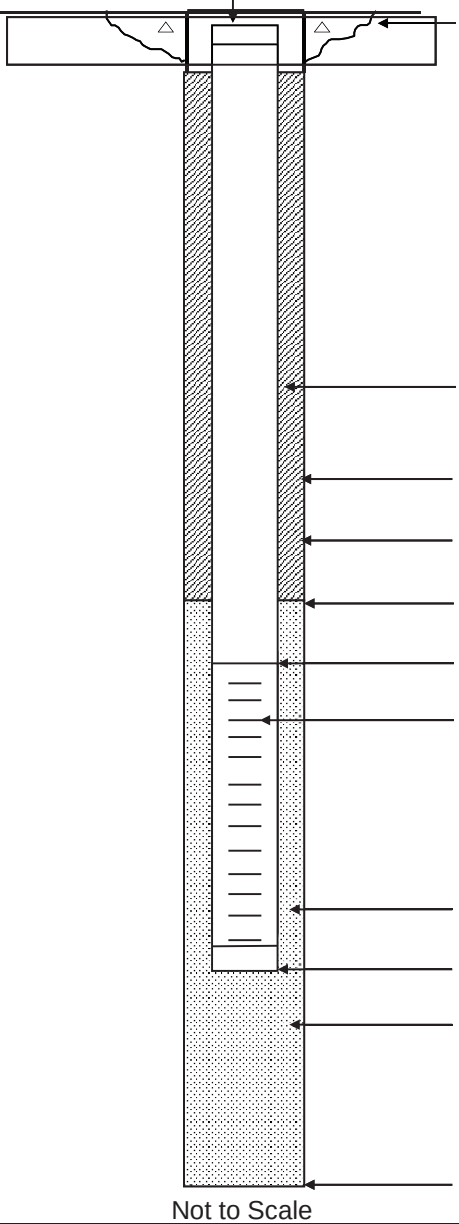
Tetra Tech, Inc.

WELL No.: MW0040

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0040
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/17/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	

Ground Elevation = 5.9 feet msl
Datum:



Not to Scale

Elevation of Top of Casing: 5.76 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 37.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 39.5'

Elevation / Depth of Top of Screen: / 40.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0'

Elevation / Depth of Bottom of Filter Pack: / 45.0'

Type of Backfill Below Well:
Undisturbed Native Soil

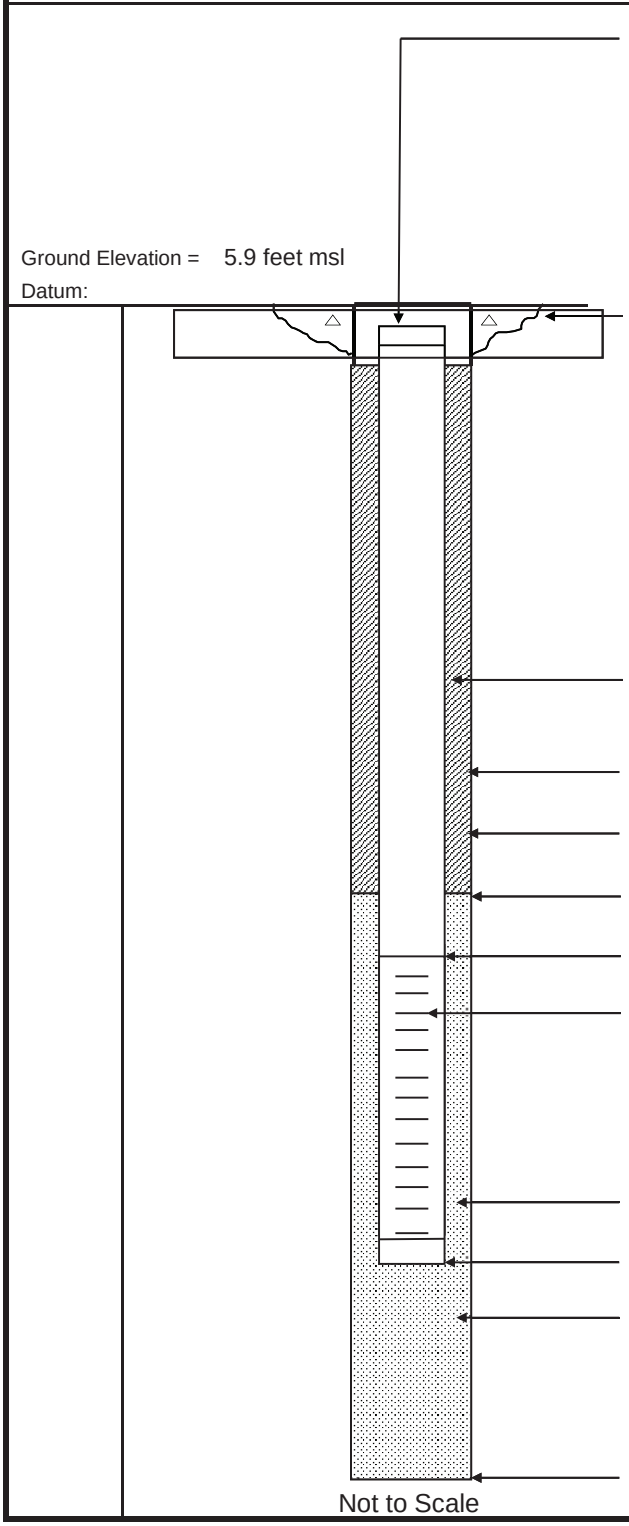
Elevation / Total Depth of Borehole: / 45.0'

Tetra Tech, Inc.

WELL No.: MW0039

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0039
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/17/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 5.69 / feet msl

Length of Riser (ft): Flush-mount

Type of Surface Casing: Concrete Pad, 8-inch Bolt-down

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 27.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 29.5'

Elevation / Depth of Top of Screen: / 30.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 40.0'

Elevation / Depth of Bottom of Filter Pack: / 40.0'

Type of Backfill Below Well: Undisturbed Native Soil

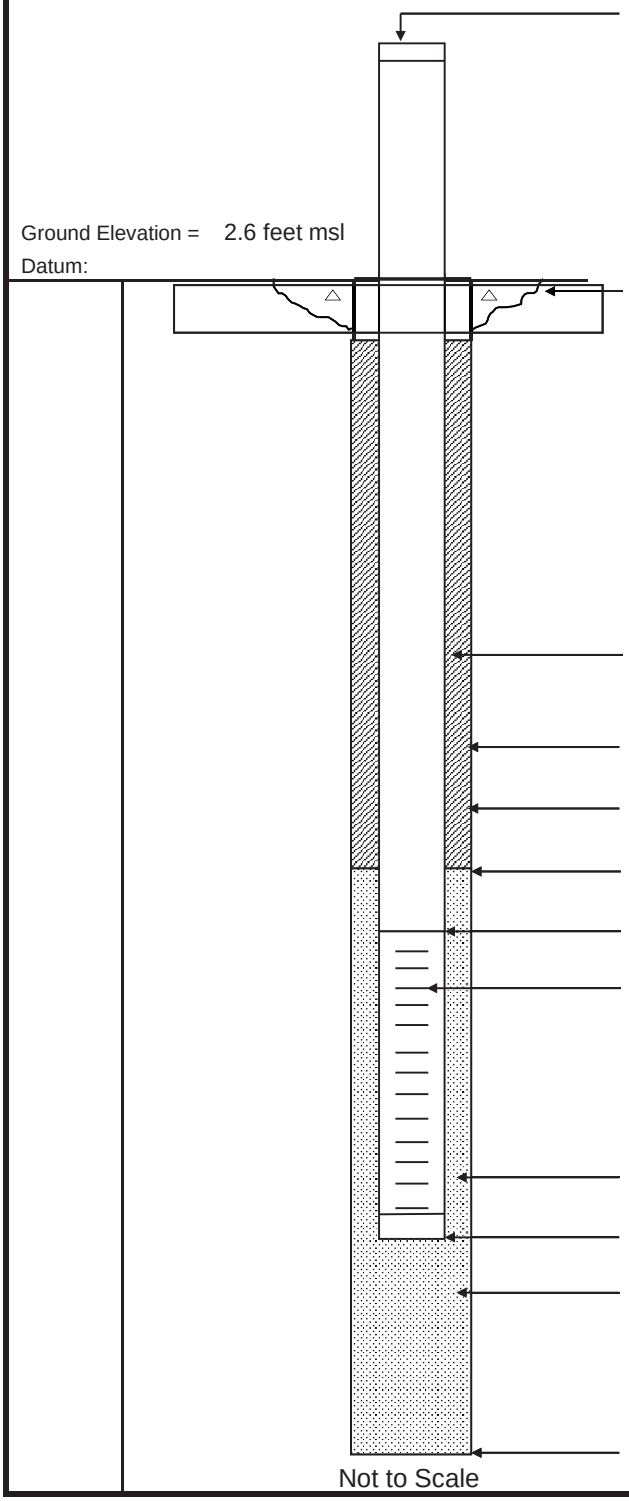
Elevation / Total Depth of Borehole: / 40.0'

Tetra Tech, Inc.

WELL No.: MW0047

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0047
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 5.95 / feet msl

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 17.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 19.5'

Elevation / Depth of Top of Screen: / 20.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 30.0'

Elevation / Depth of Bottom of Filter Pack: / 30.0'

Type of Backfill Below Well: Undisturbed Native Soil

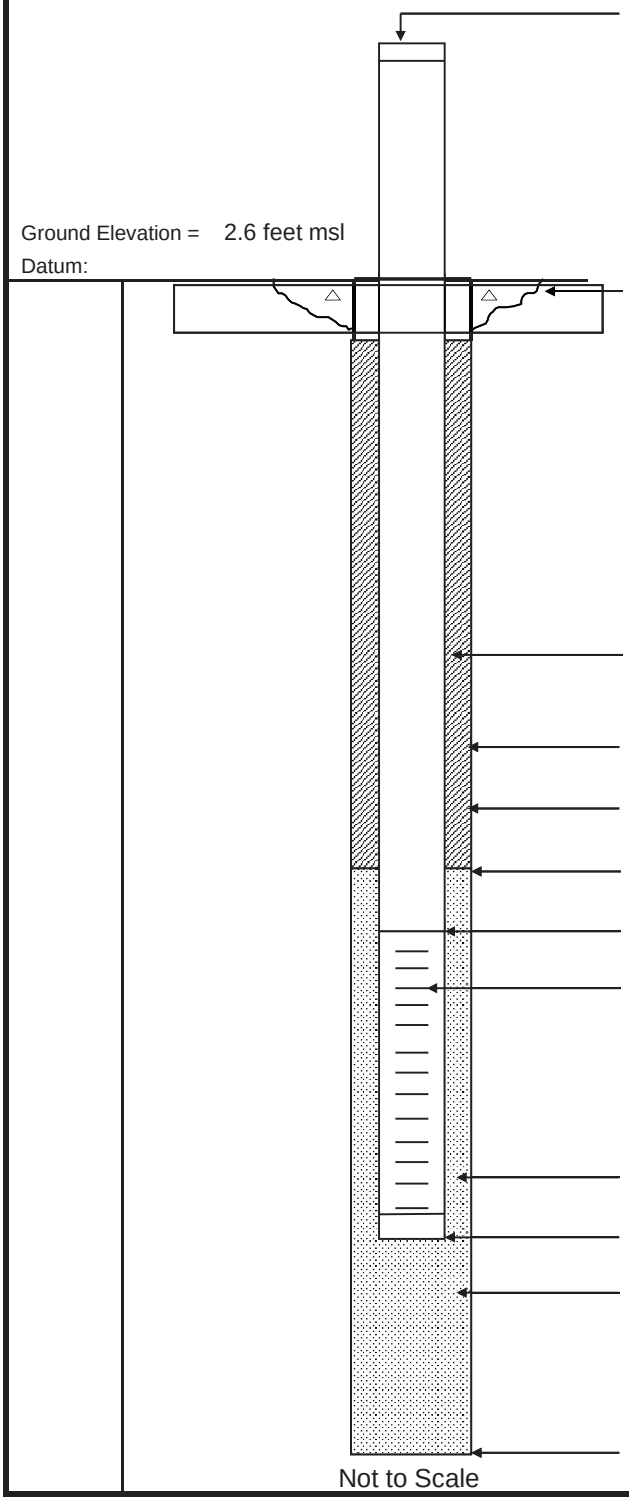
Elevation / Total Depth of Borehole: / 30.0'

Tetra Tech, Inc.

WELL No.: MW0046

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0046
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 6.03 / feet msl

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 7.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 9.5'

Elevation / Depth of Top of Screen: / 10.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 20.0'

Elevation / Depth of Bottom of Filter Pack: / 20.0'

Type of Backfill Below Well: Undisturbed Native Soil

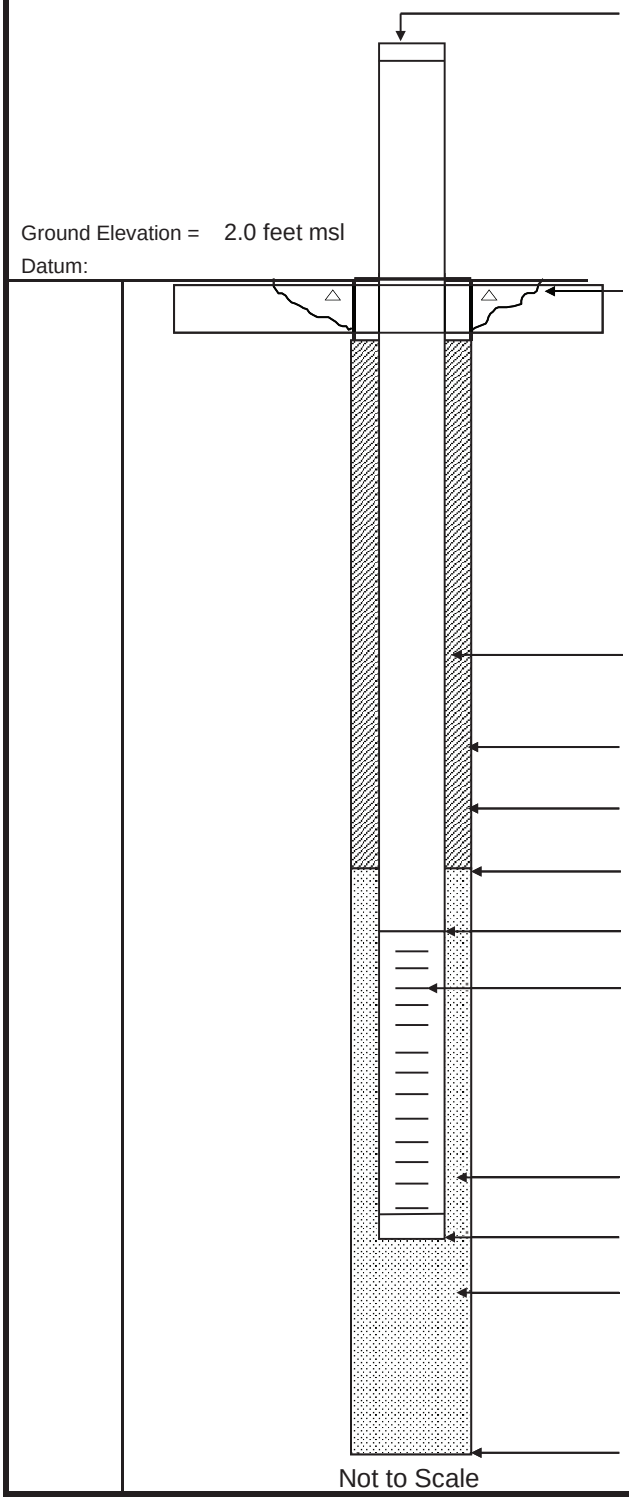
Elevation / Total Depth of Borehole: / 20.0'

Tetra Tech, Inc.

WELL No.: MW0038

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0038
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 5.90 / feet msl

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 12.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 14.5'

Elevation / Depth of Top of Screen: / 15.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 25.0'

Elevation / Depth of Bottom of Filter Pack: / 25.0'

Type of Backfill Below Well: Undisturbed Native Soil

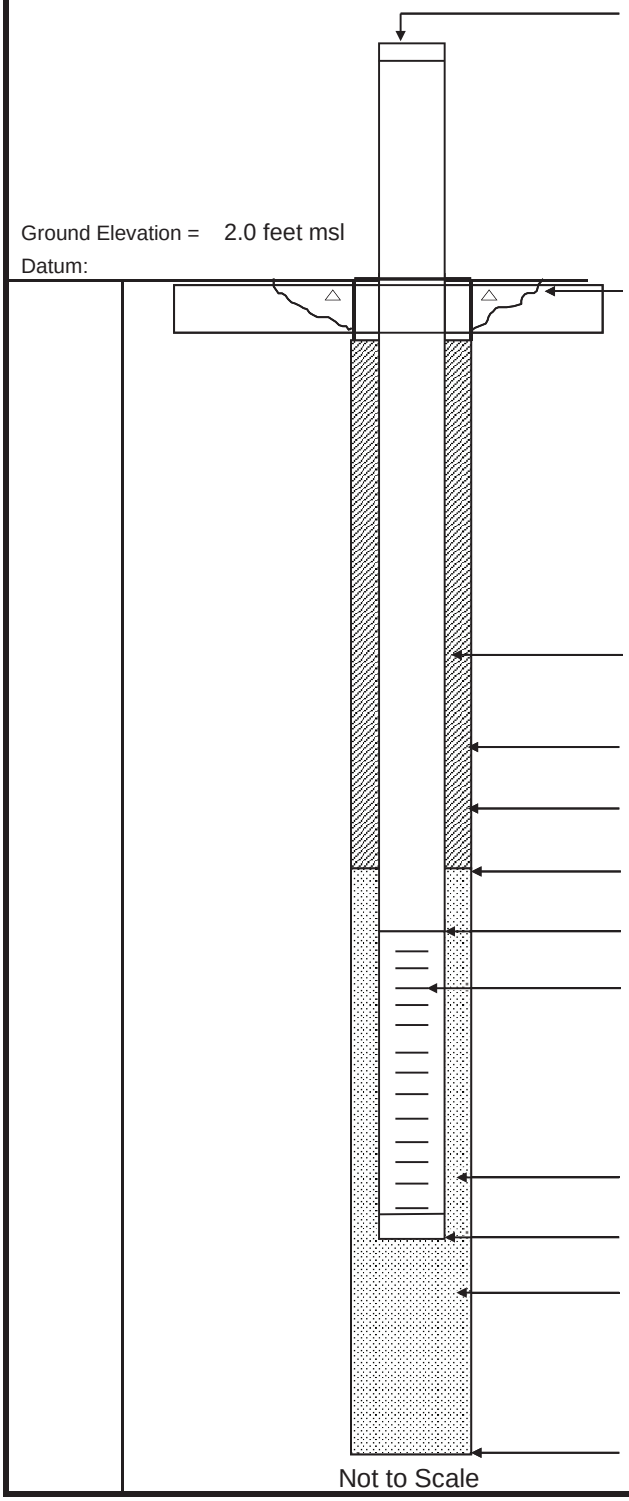
Elevation / Total Depth of Borehole: / 25.0'

Tetra Tech, Inc.

WELL No.: MW0037

MONITORING WELL SHEET

PROJECT:	HMFN	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	MW0037
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	LATITUDE:	
ENG/GEO:	S. Rogers	DEV. METHOD:	Pump	LONGITUDE:	



Elevation of Top of Casing: 6.09 / feet msl

Length of Riser (ft): 3

Type of Surface Casing: Aluminum Above-Grade Protector

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4"

Type of Backfill: Bentonite/Portland Cement Grout

Elevation / Depth of Seal: / 2.5'

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 4.5'

Elevation / Depth of Top of Screen: / 5.0'

Type of Screen: Sch. 40 Pre-Packed Screen

Slot Size x Length: 0.010 x 10'

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 15.0'

Elevation / Depth of Bottom of Filter Pack: / 15.0'

Type of Backfill Below Well: Undisturbed Native Soil

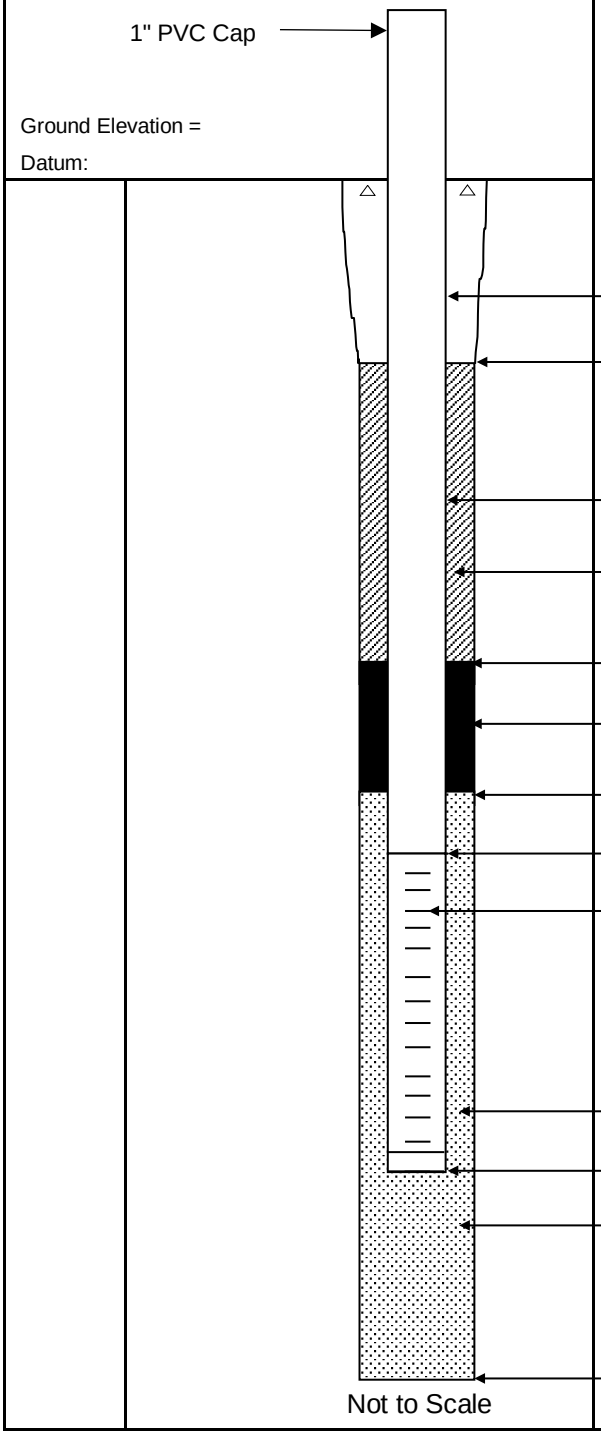
Elevation / Total Depth of Borehole: / 15.0'

Tetra Tech, Inc.

BORING No.: AS0003

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0003
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/02/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



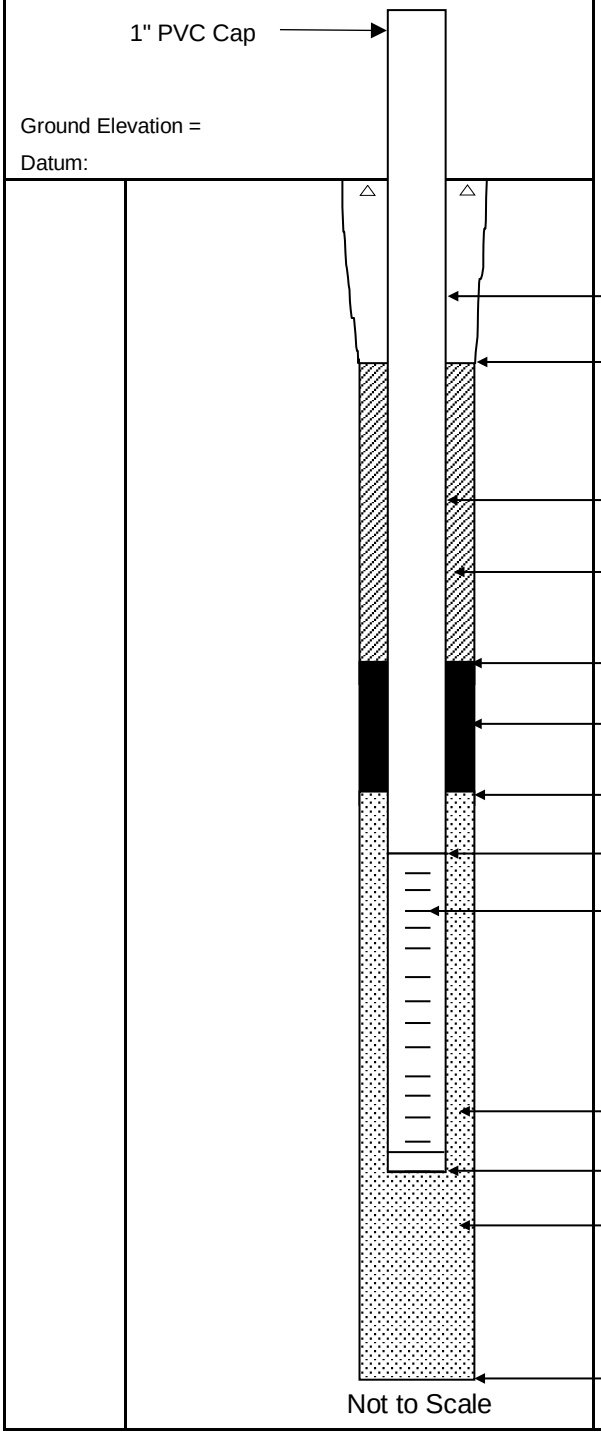
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0002

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0002
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/02/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



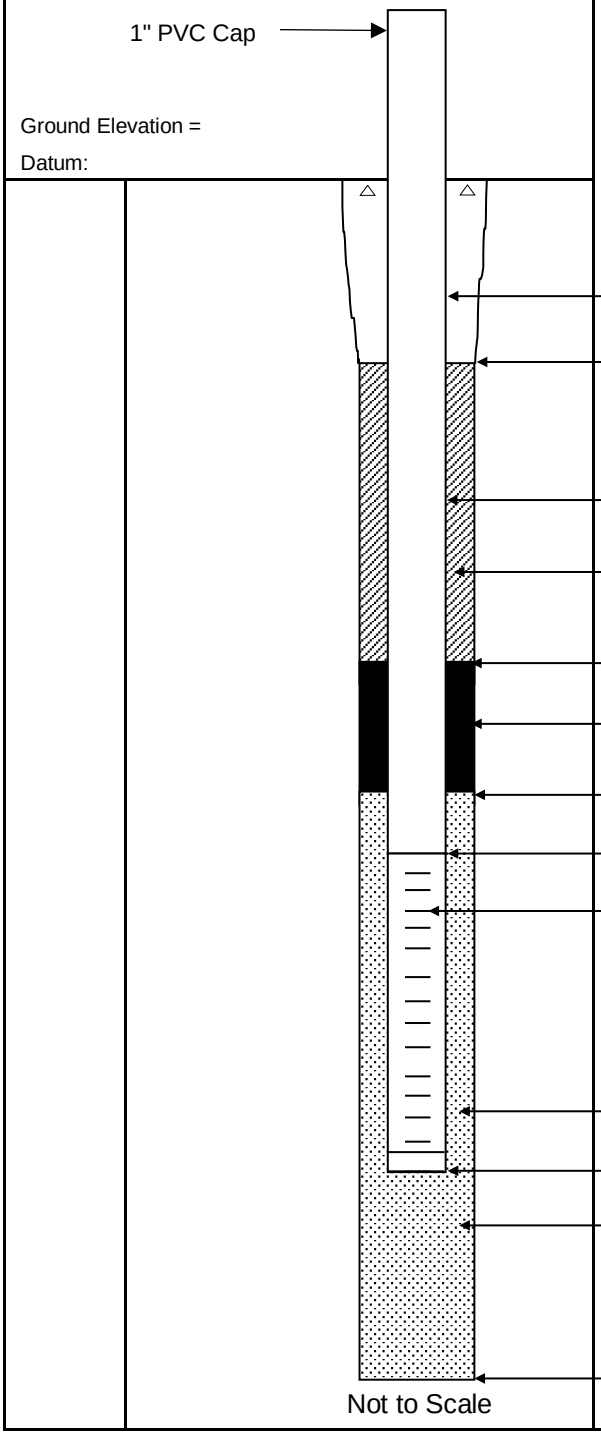
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0004

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0004
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



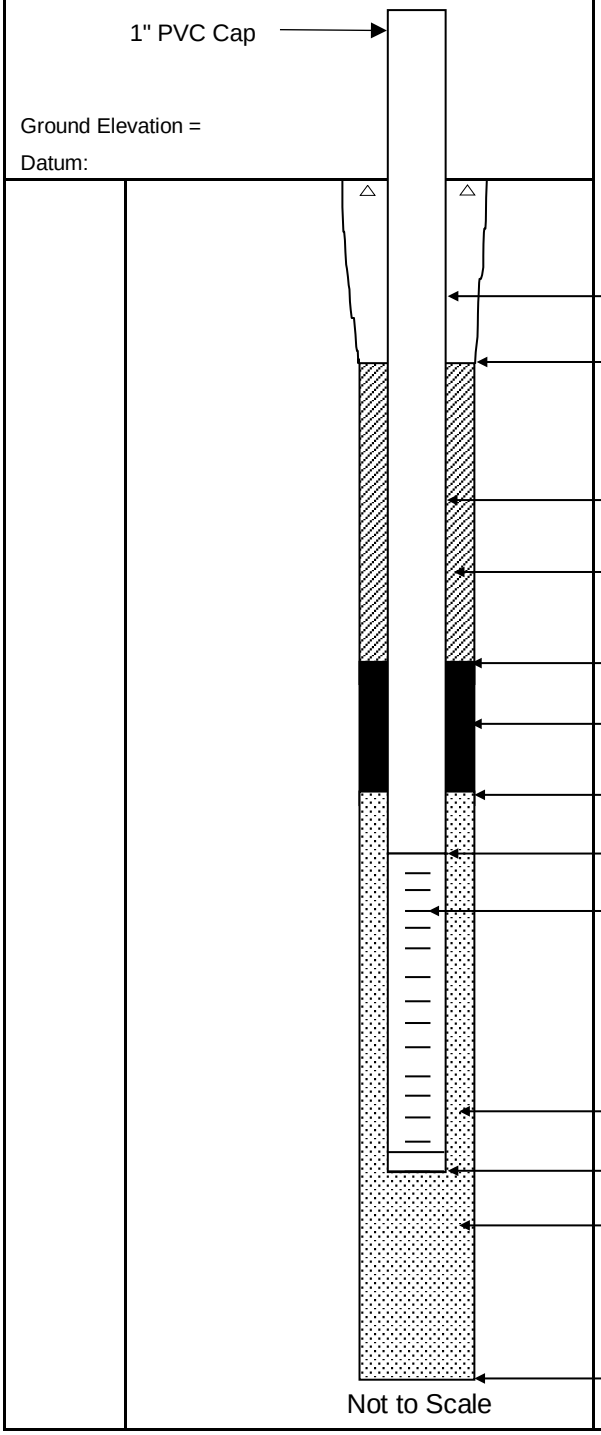
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0006

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0006
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



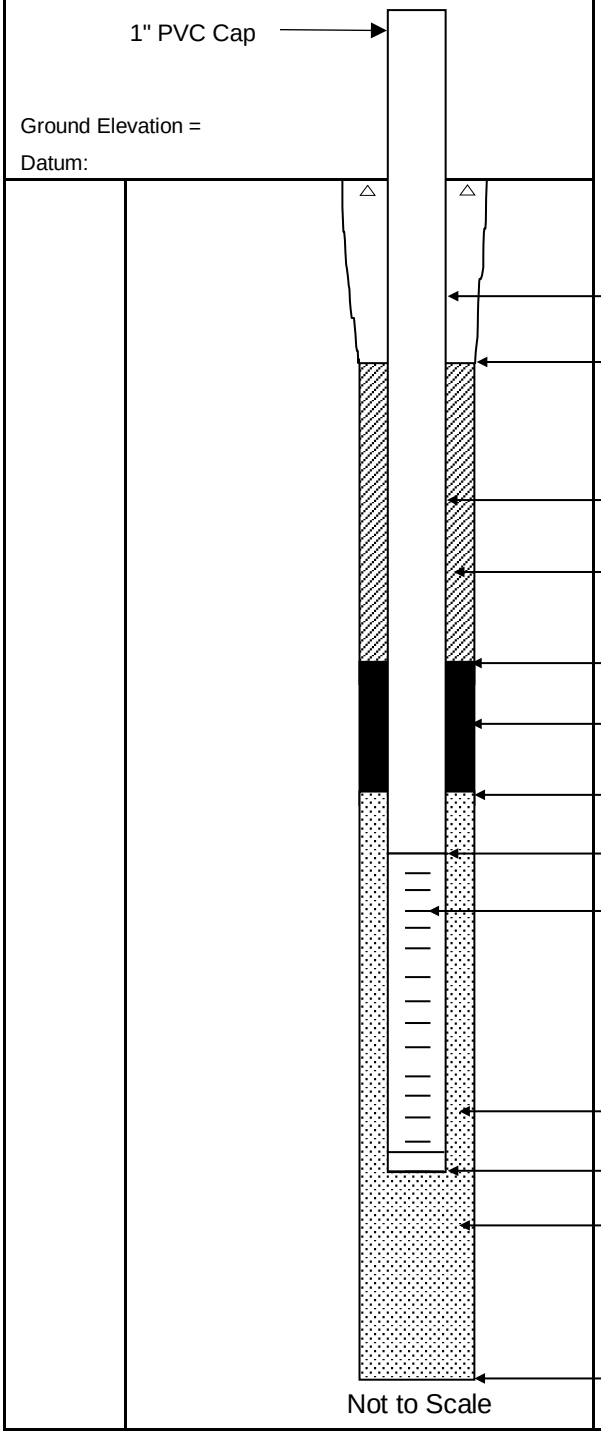
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0005

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0005
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



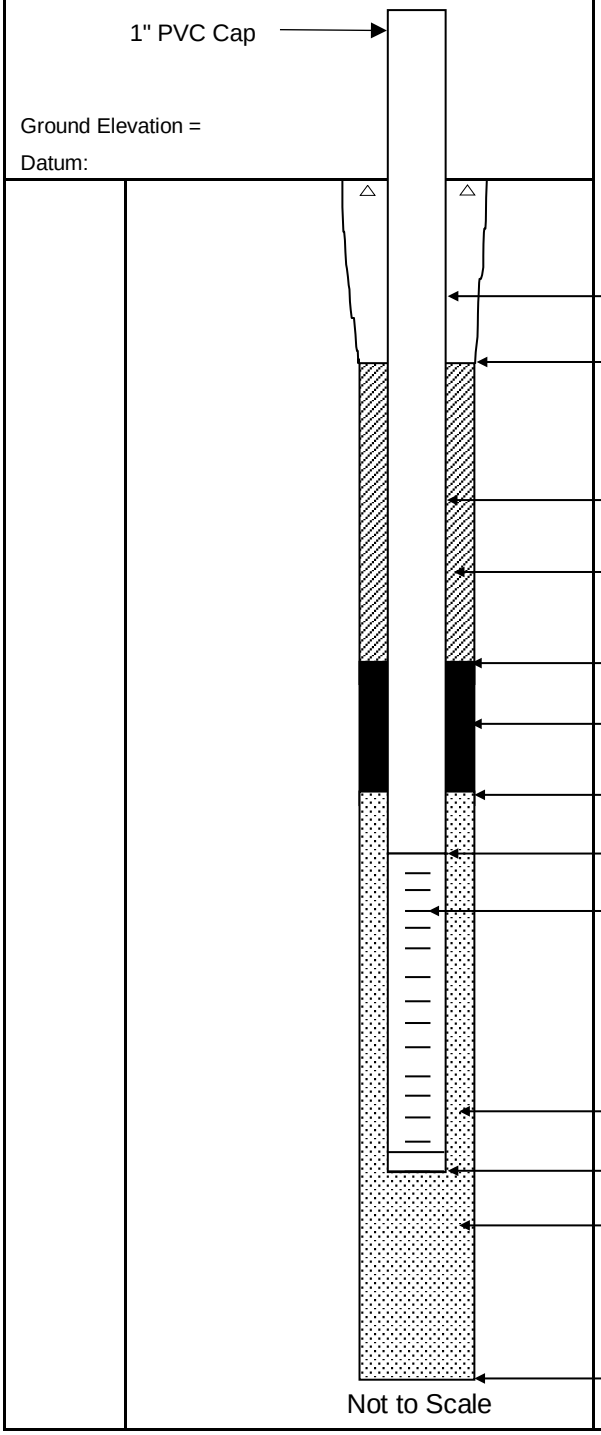
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0008

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0008
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



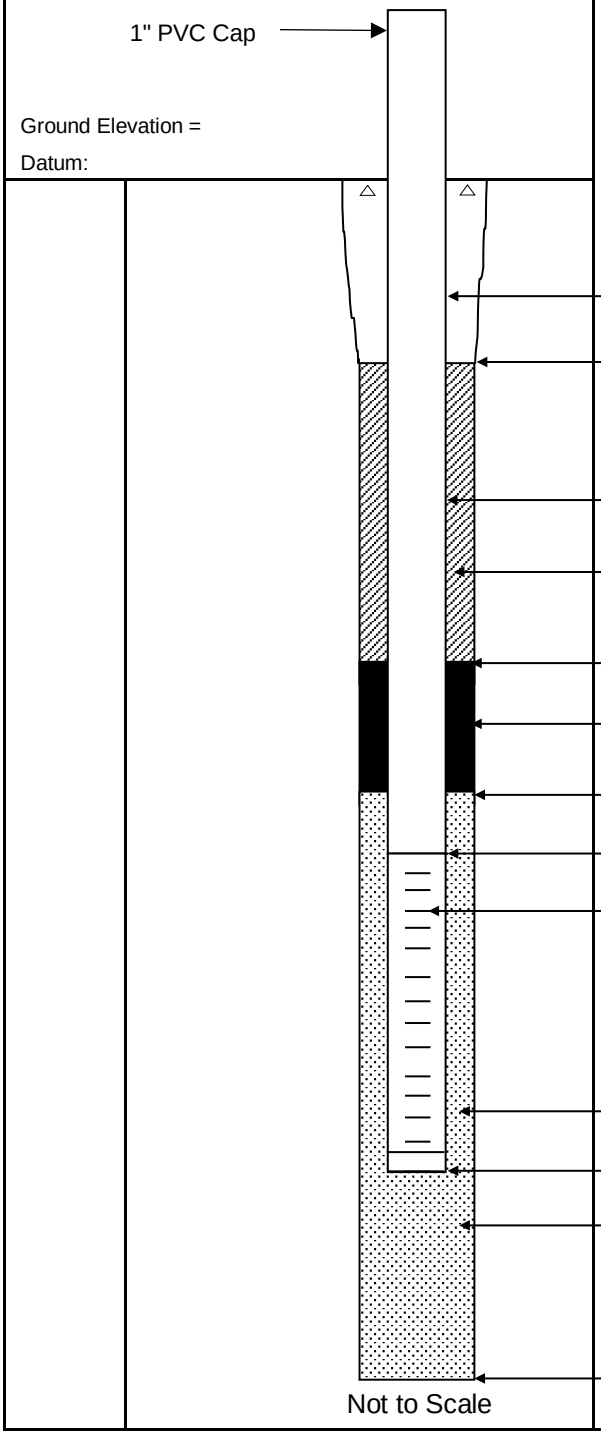
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0010

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0010
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



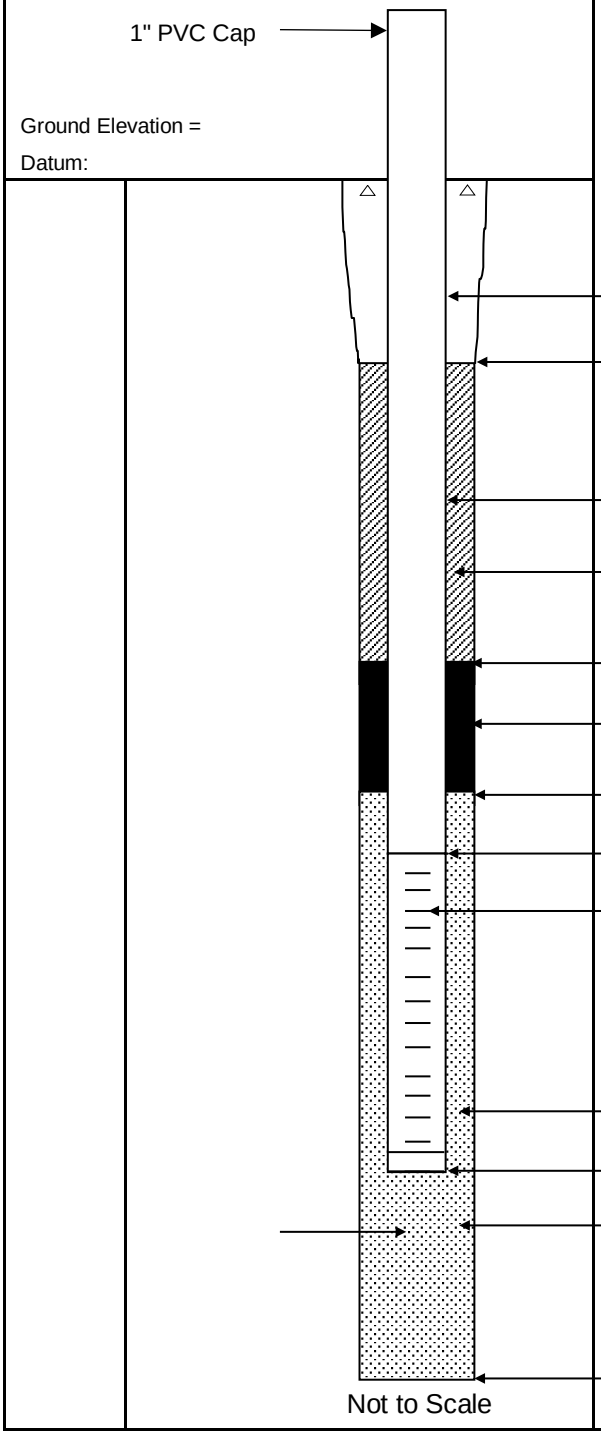
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0012

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0012
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/03/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



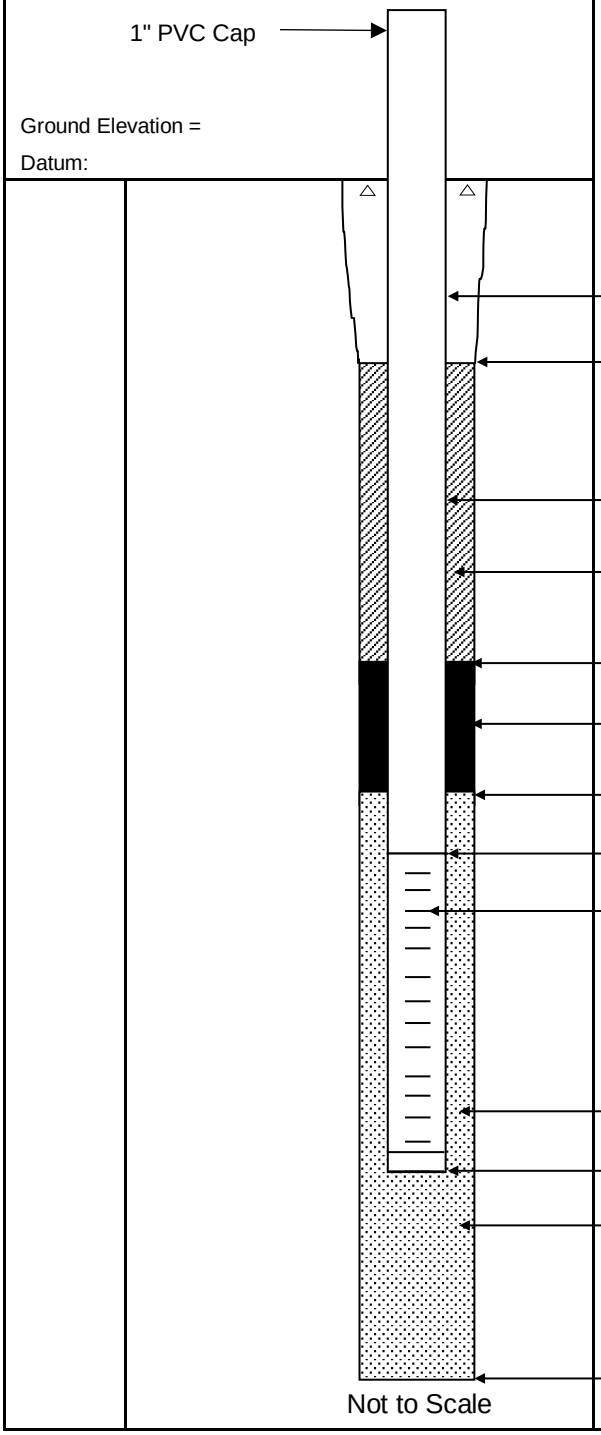
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 23.5'
Elevation / Depth of Top of Screen:		/ 24.5'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0007

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0007
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



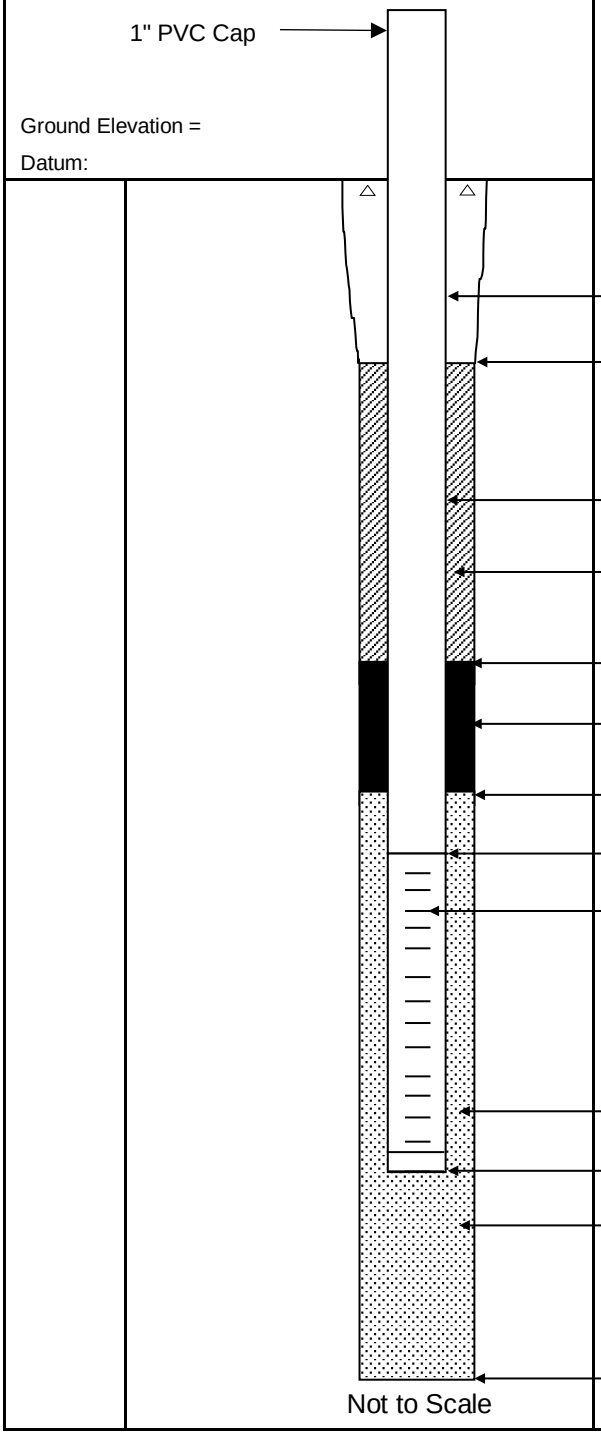
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0009

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0009
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



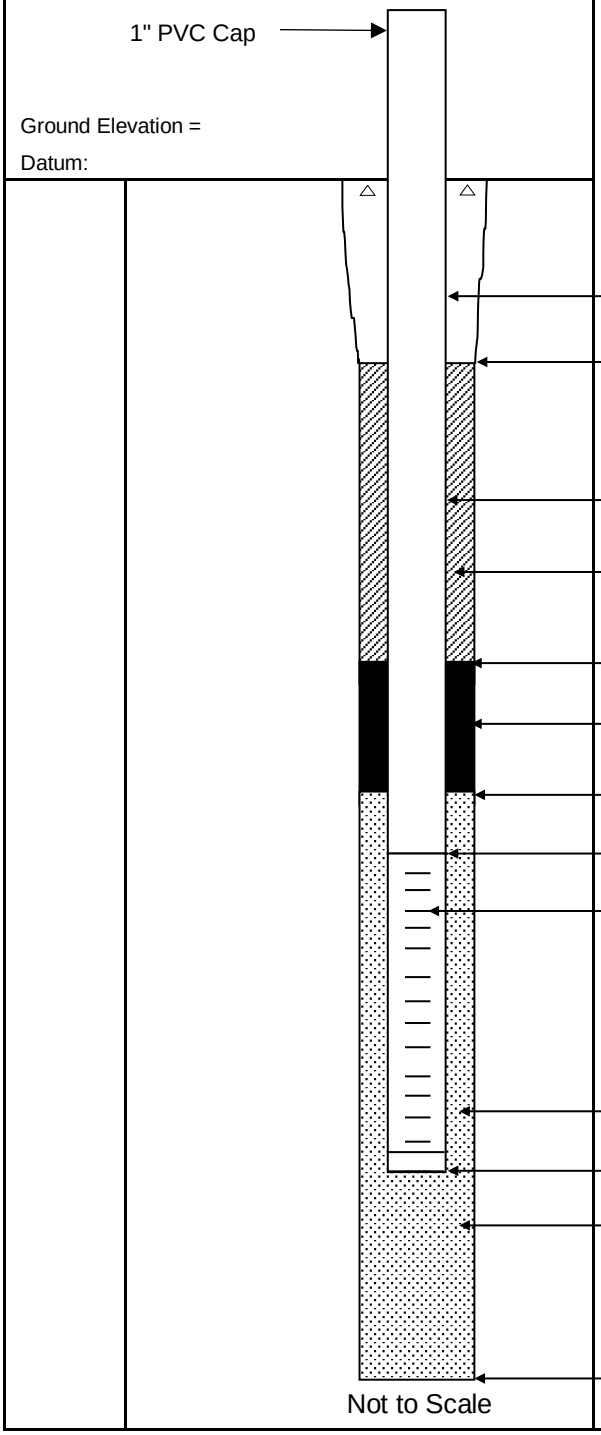
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0011

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0011
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



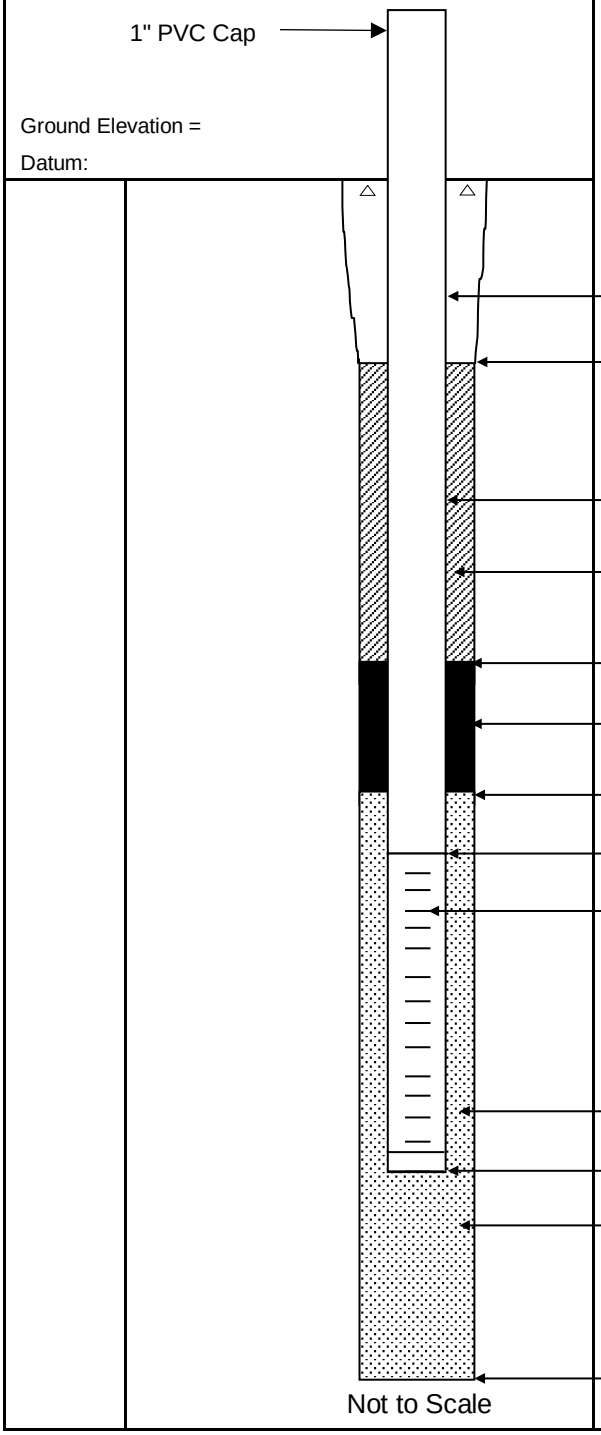
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0014

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0014
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



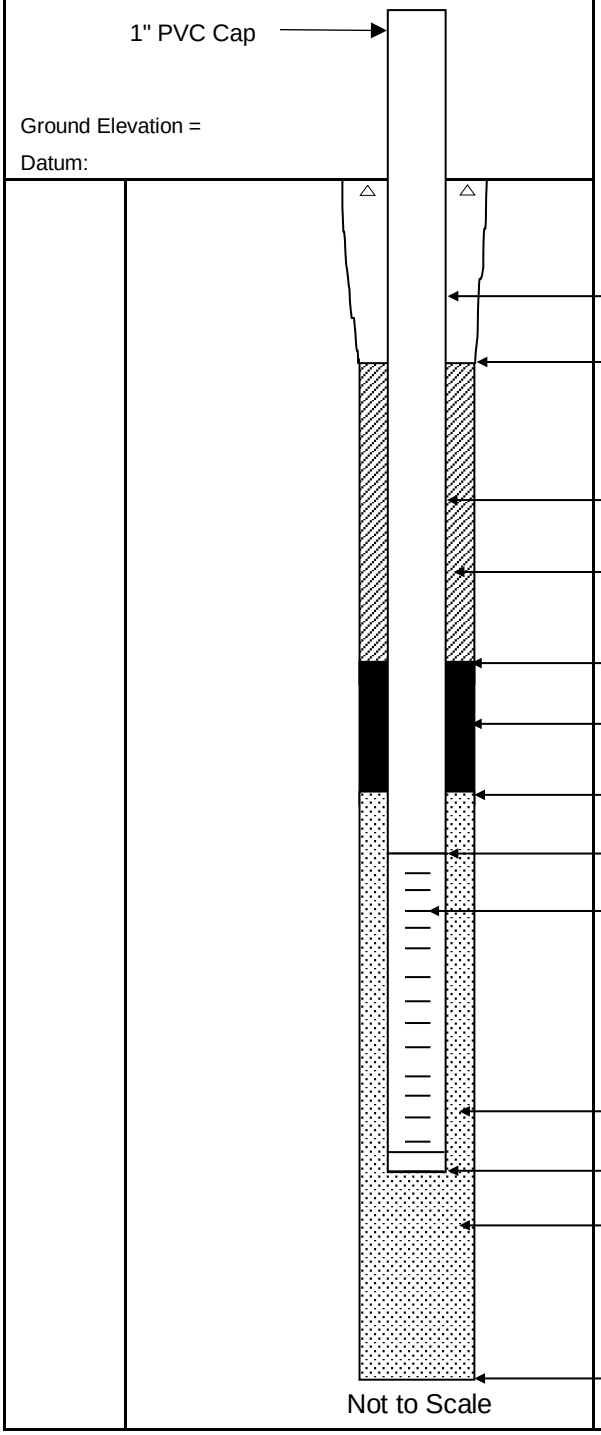
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0017

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0017
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



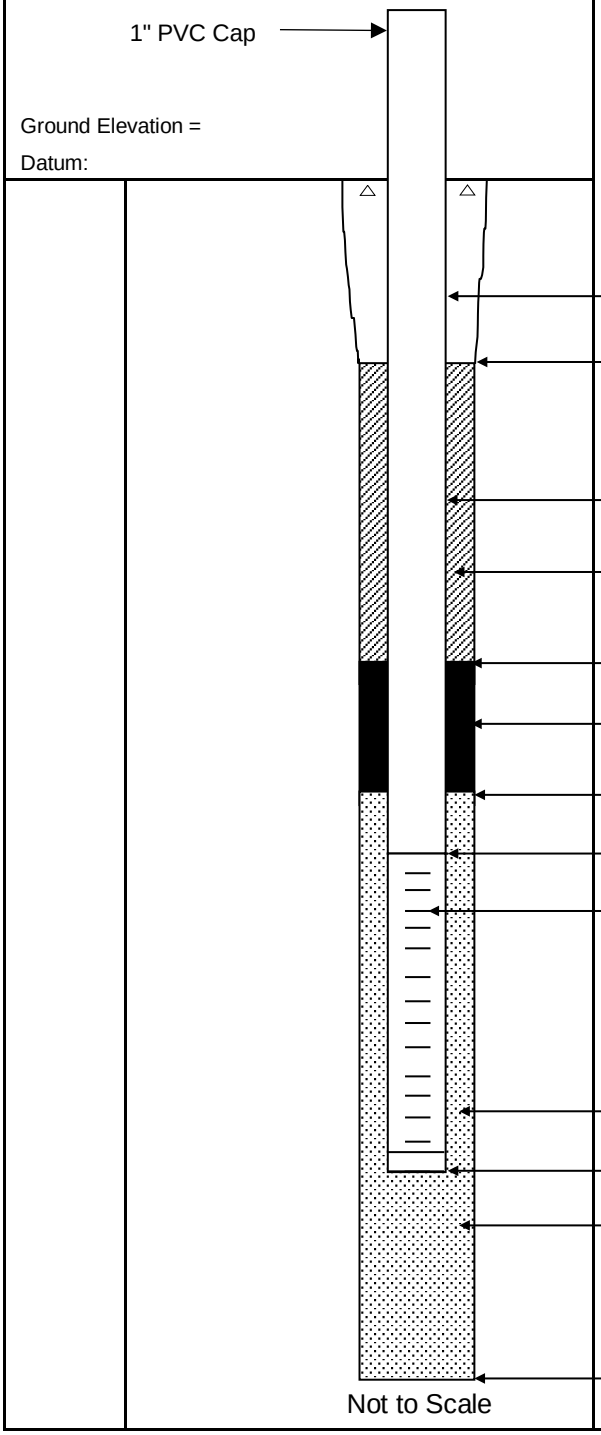
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0016

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0016
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



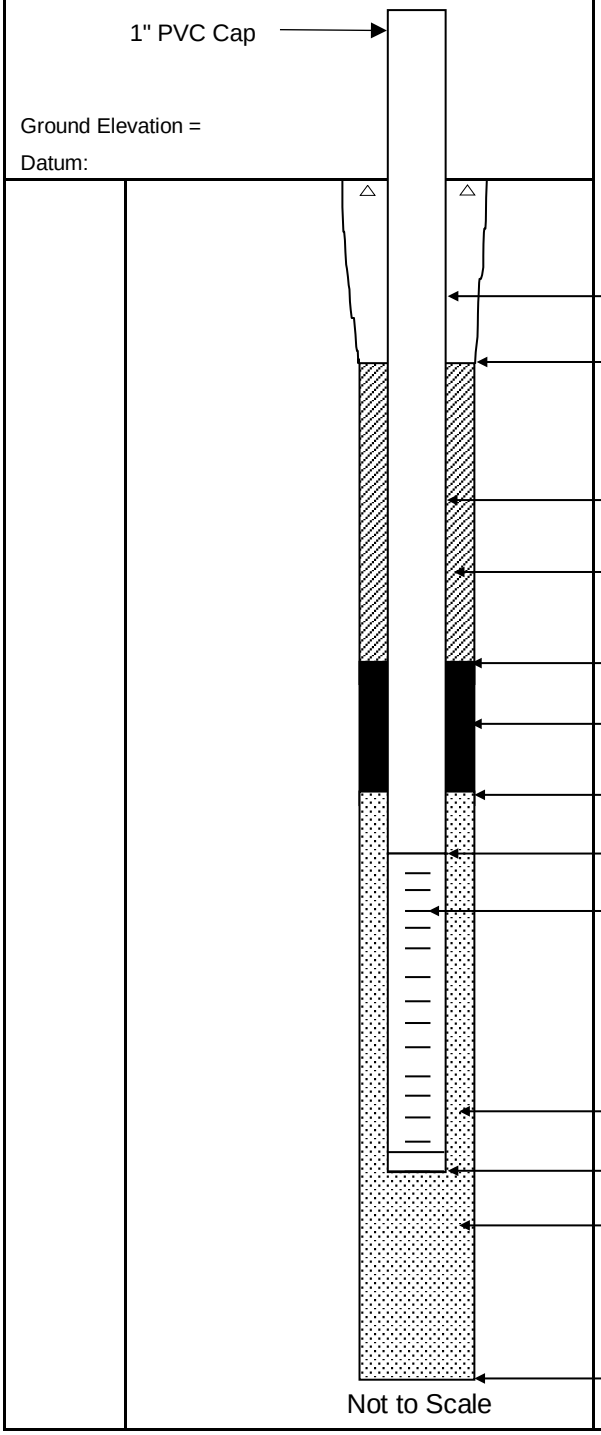
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0013

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0013
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/04/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



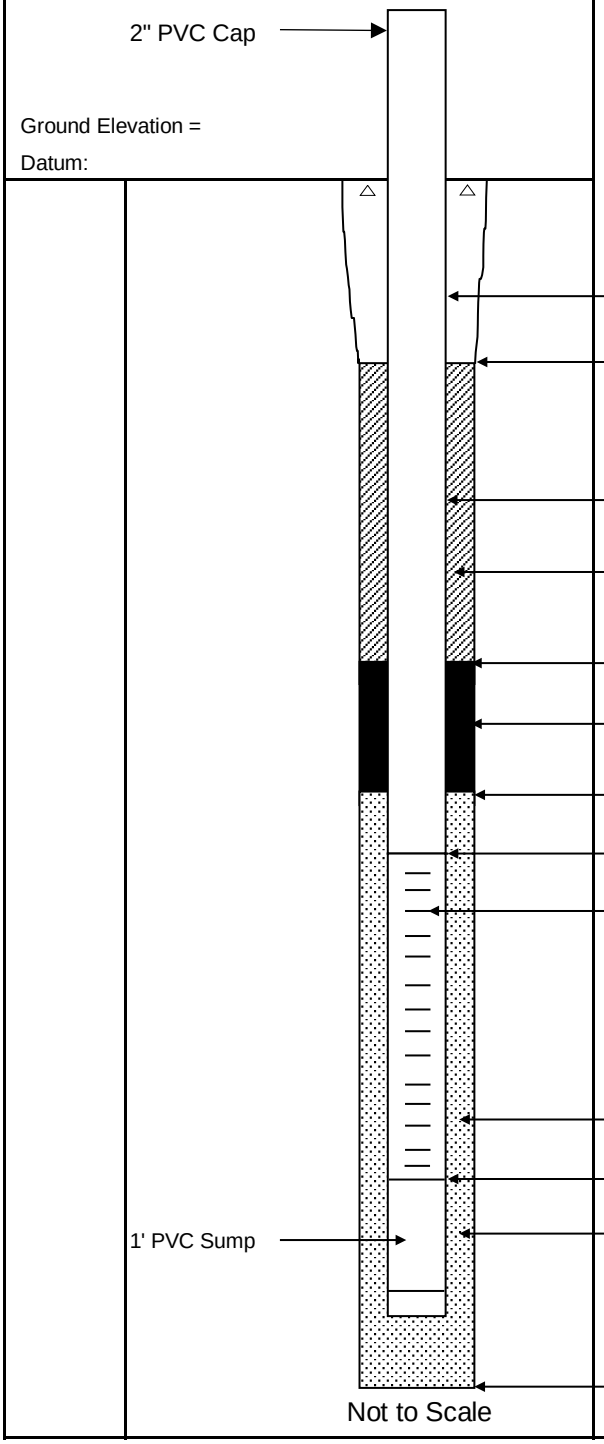
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 21.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 24.5'
Elevation / Depth of Top of Screen:		/ 25.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 27.0'
Elevation / Depth of Bottom of Filter Pack:		/ 27.0'
Type of Backfill Below Well:	Native Soil	
Elevation / Total Depth of Borehole:		/ 30.0'

Tetra Tech, Inc.

BORING No.: AS0147

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0147
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



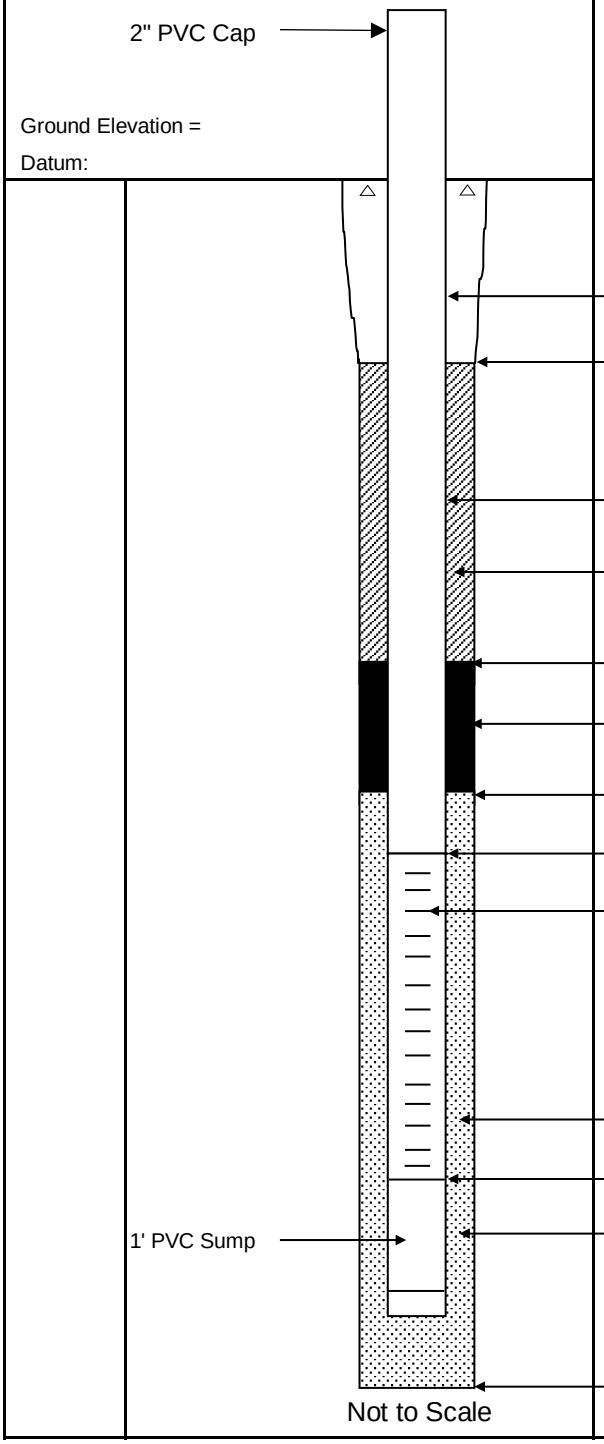
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0135

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0135
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



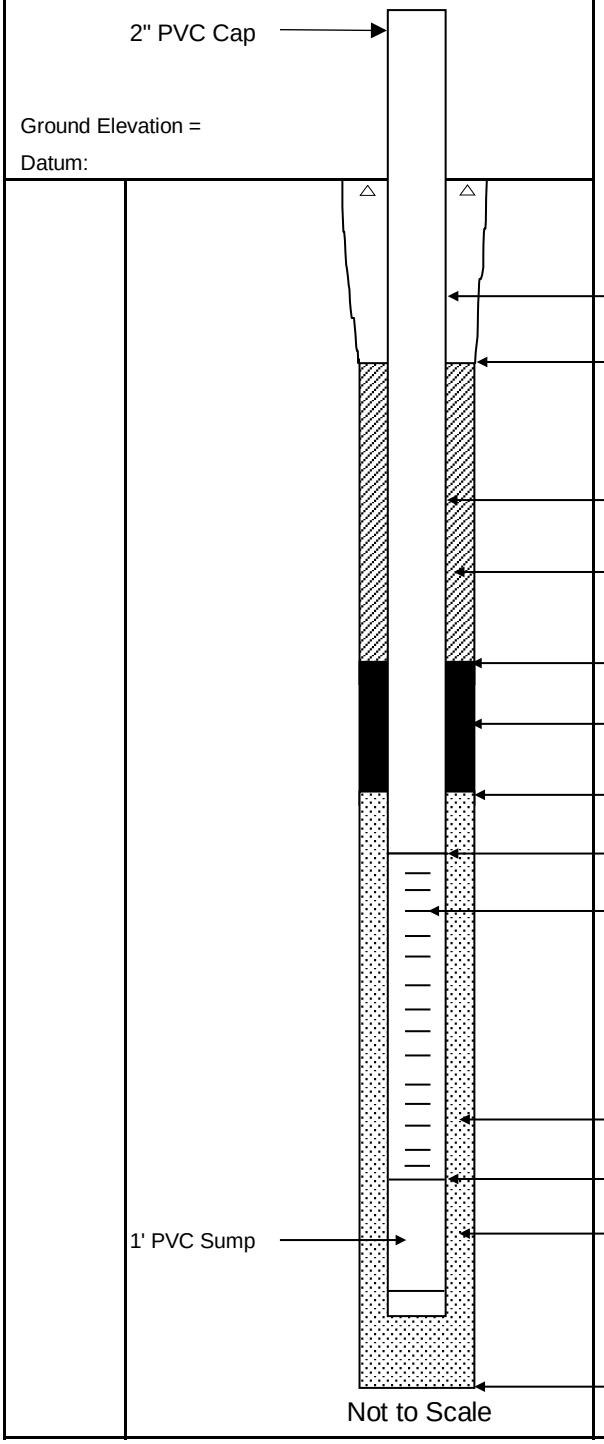
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0124

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0124
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



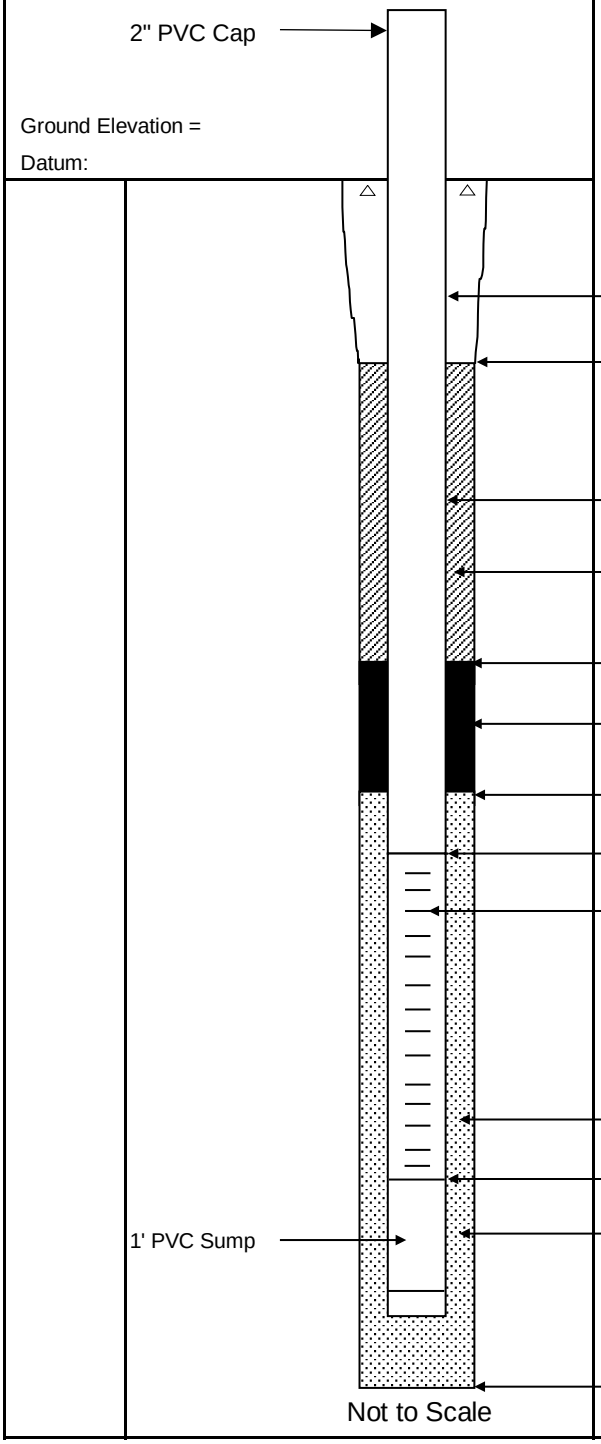
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0113

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0113
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/05/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



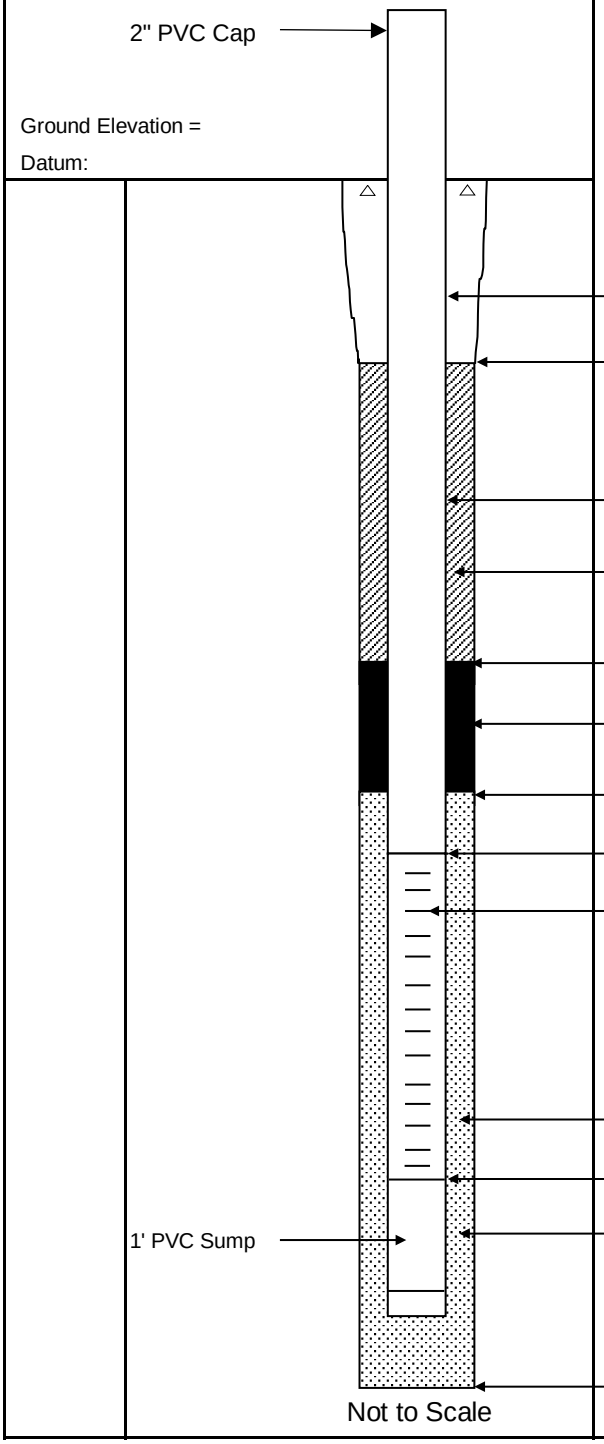
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0101

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0101
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



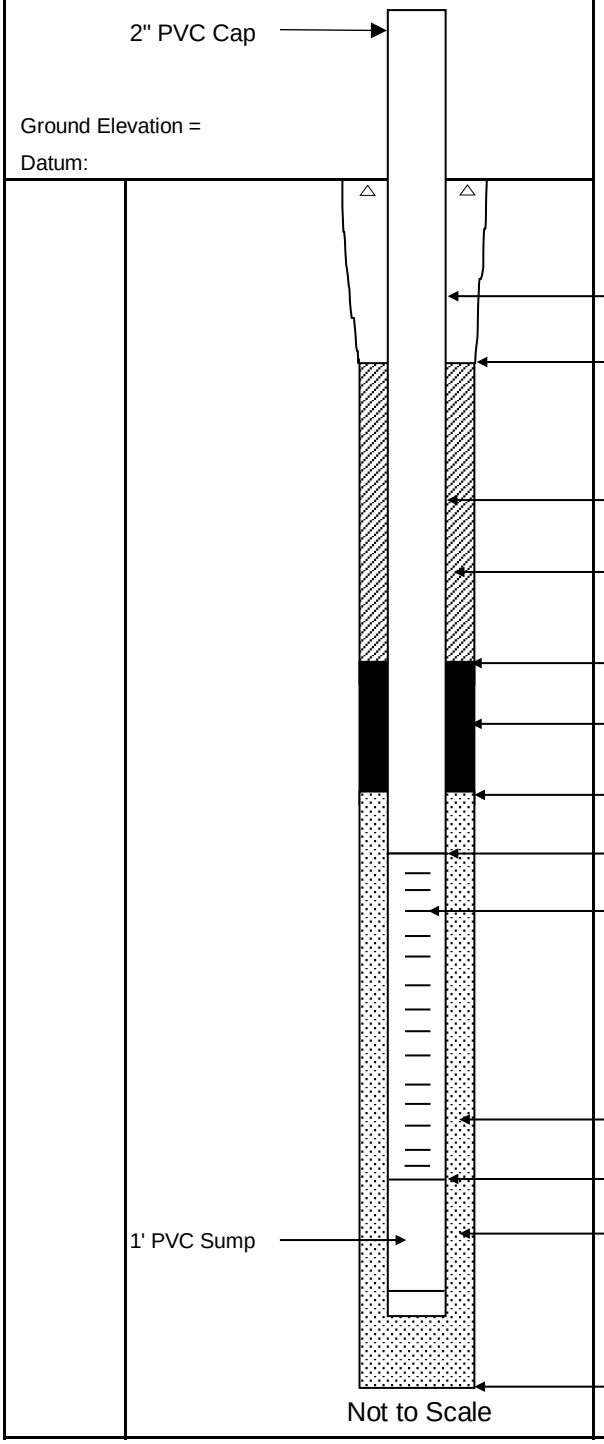
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0102

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0102
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



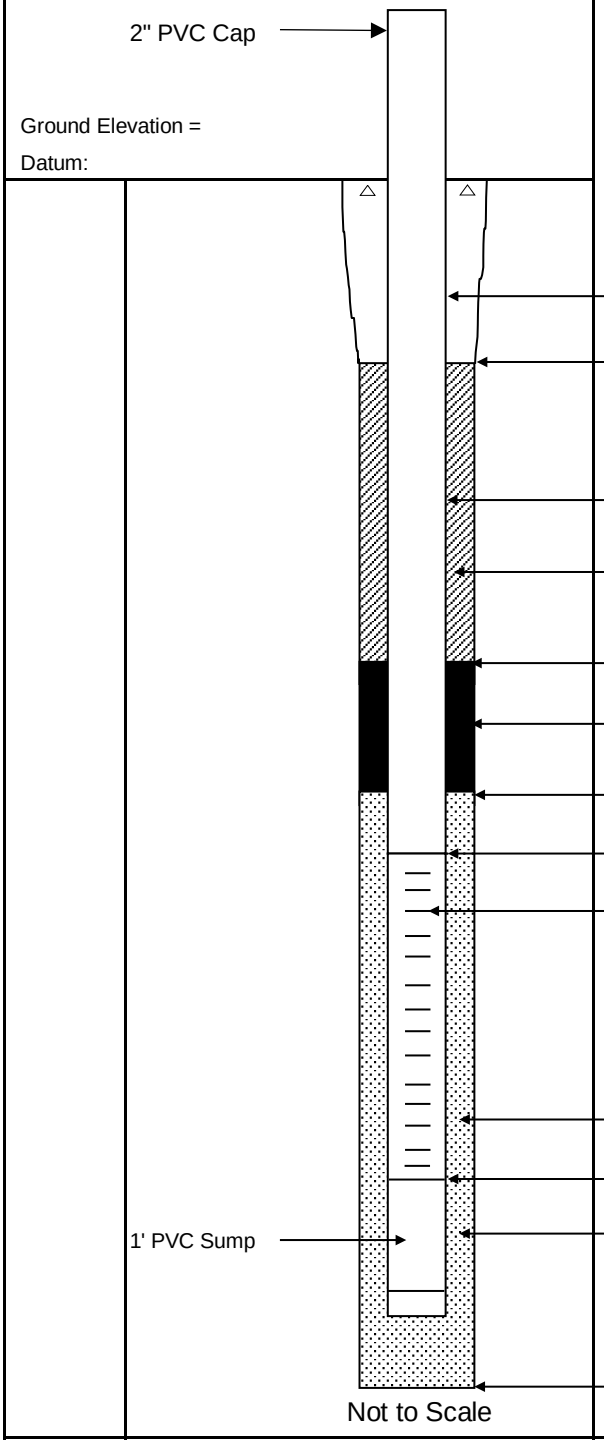
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0112

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0112
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



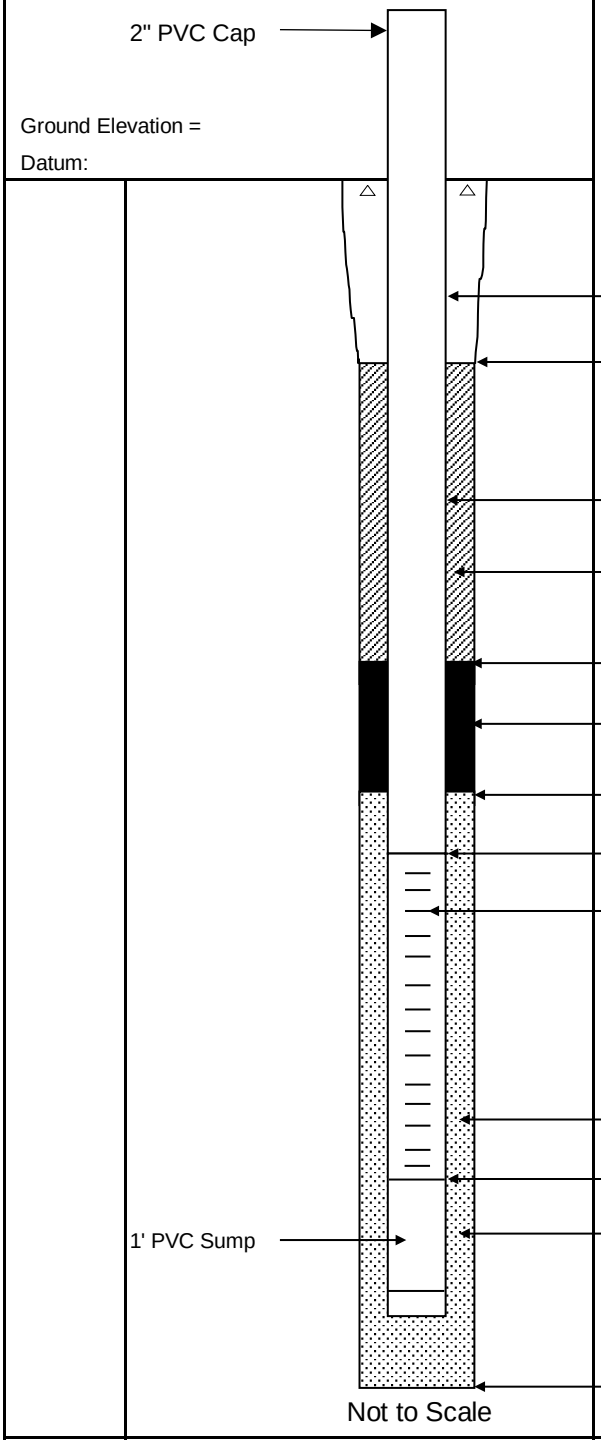
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0123

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0123
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/06/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



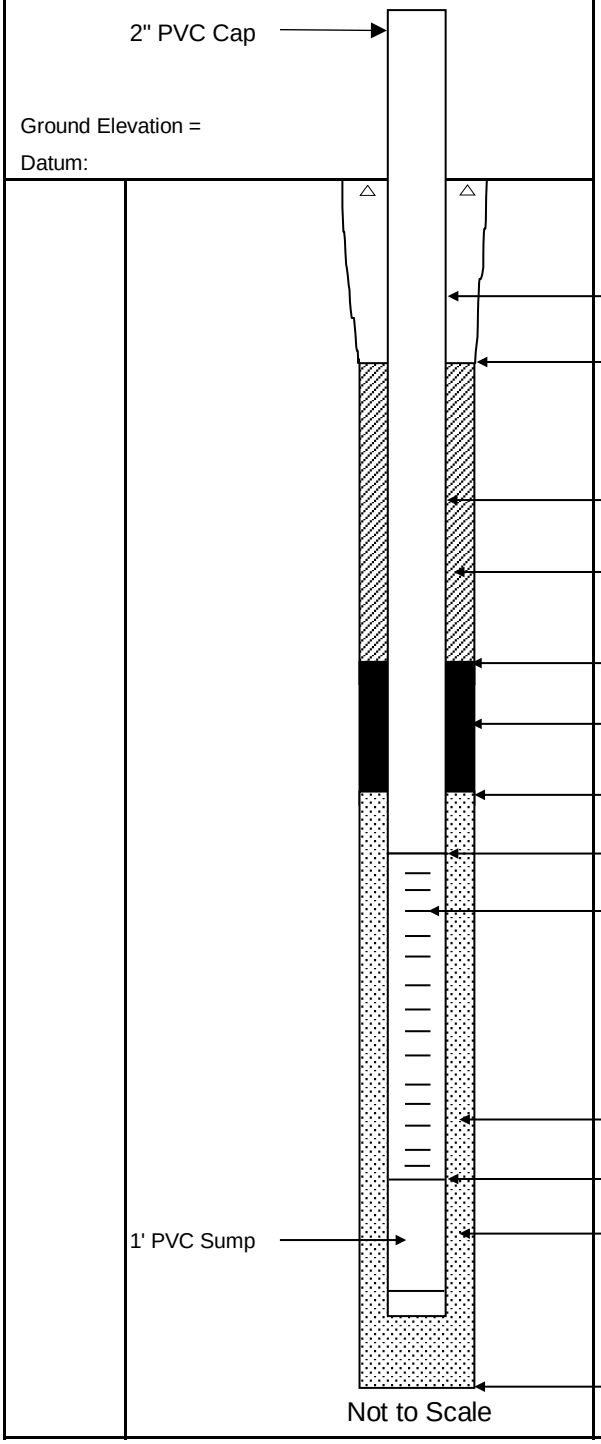
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0134

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0134
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/09/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



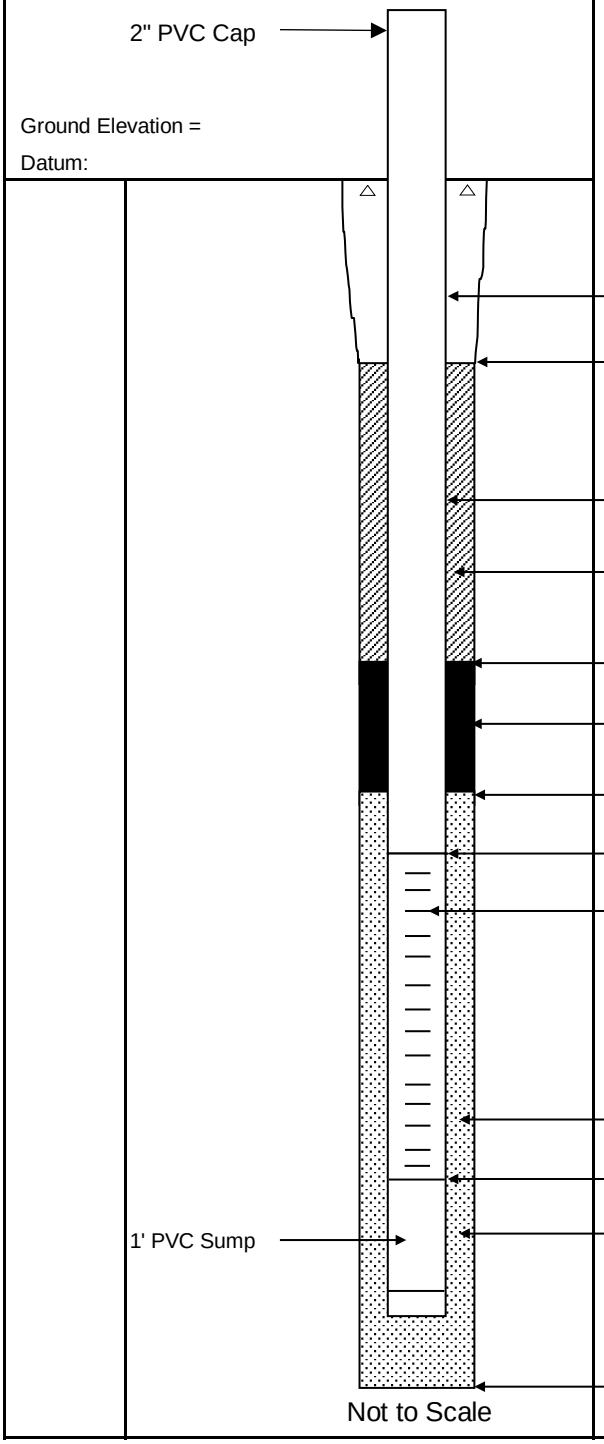
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0145

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0145
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/09/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



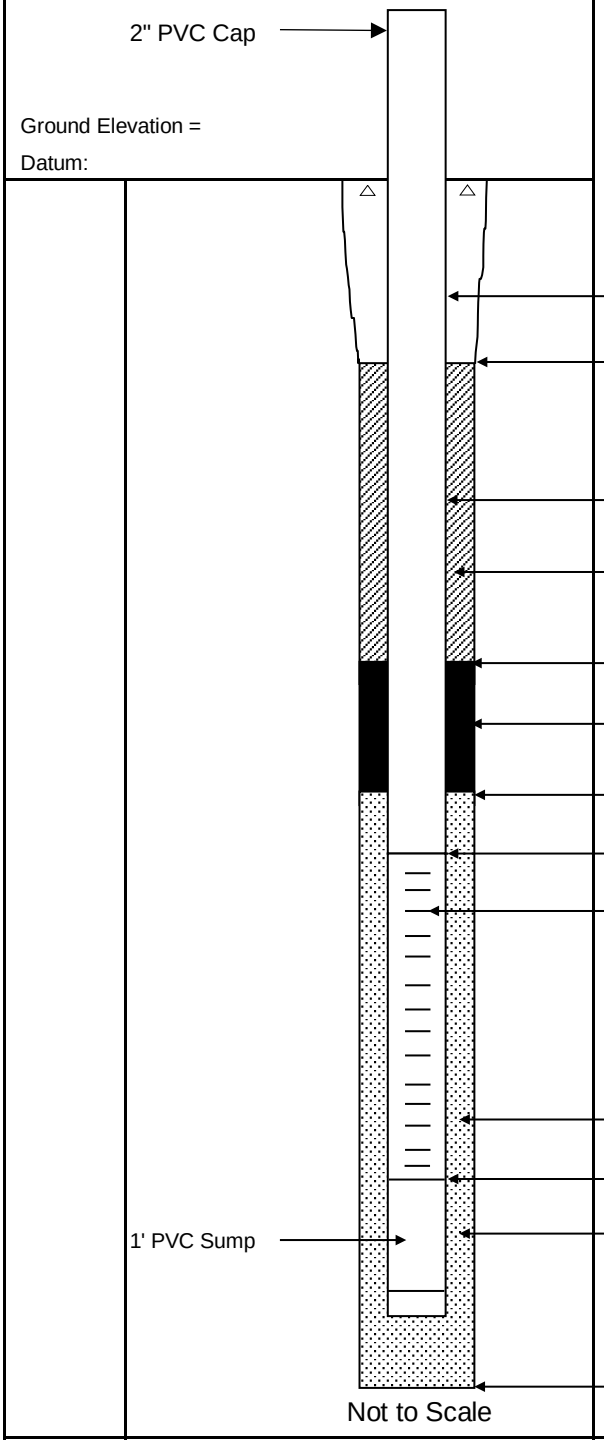
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0111

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0111
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/09/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



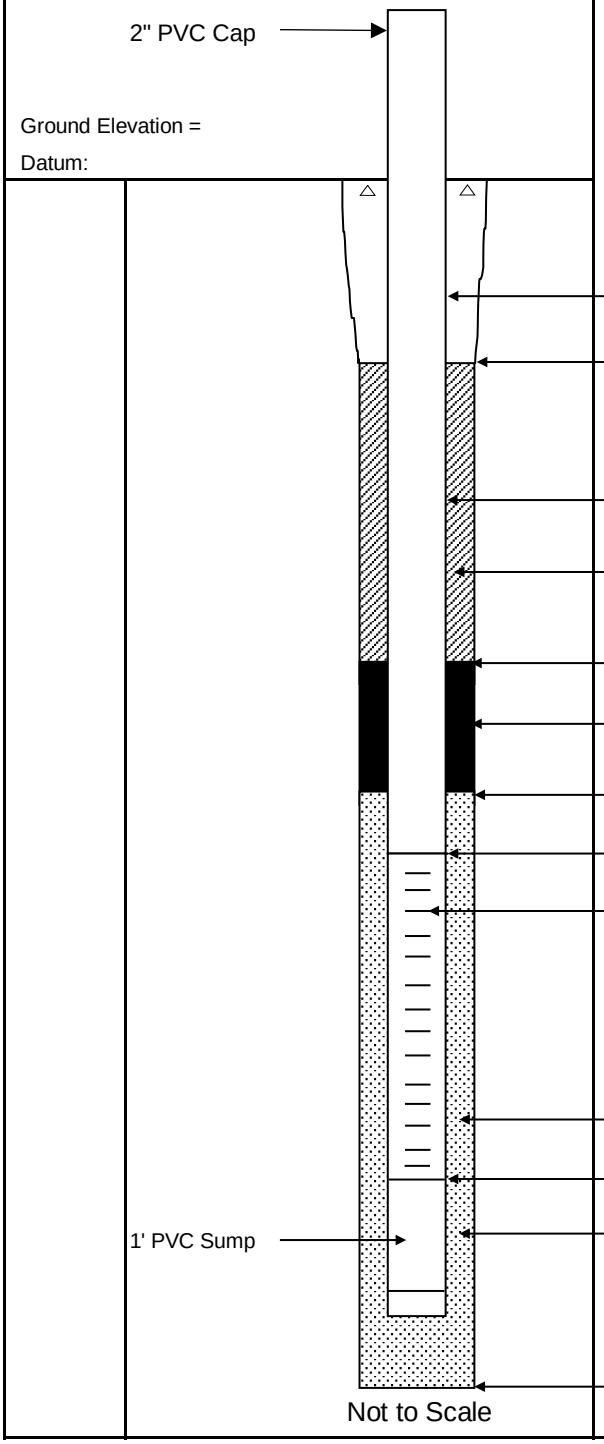
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0100

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0100
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



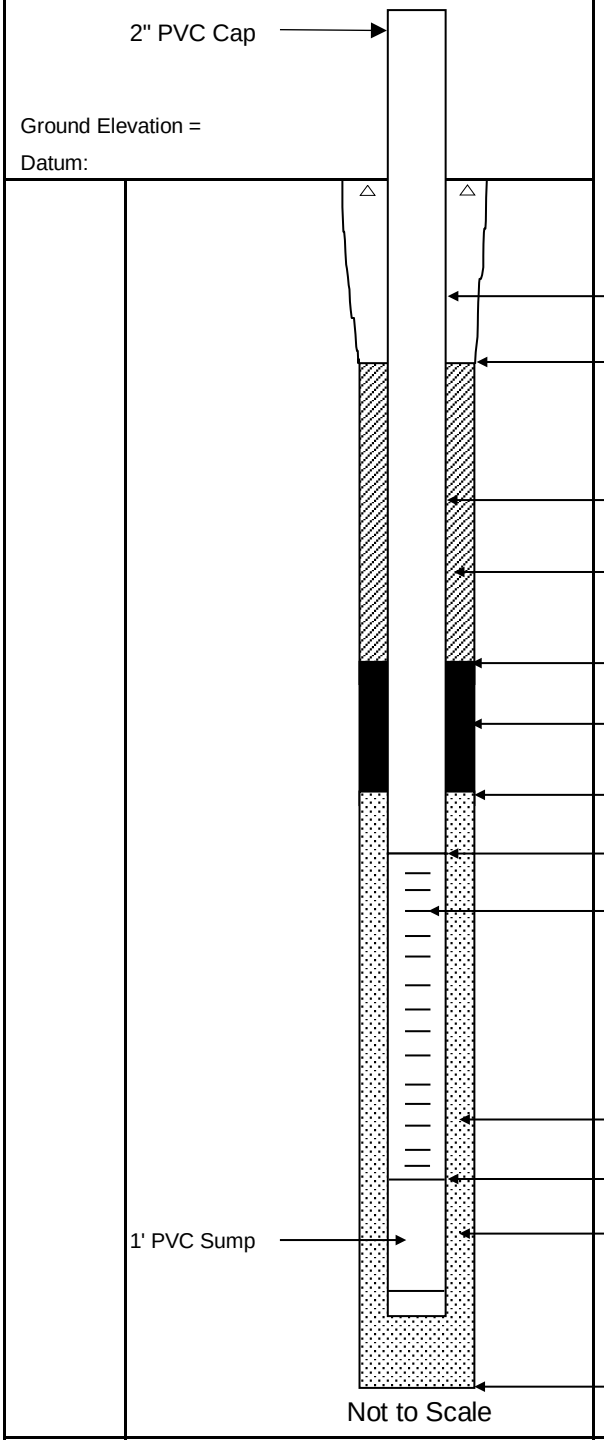
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0083

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0083
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



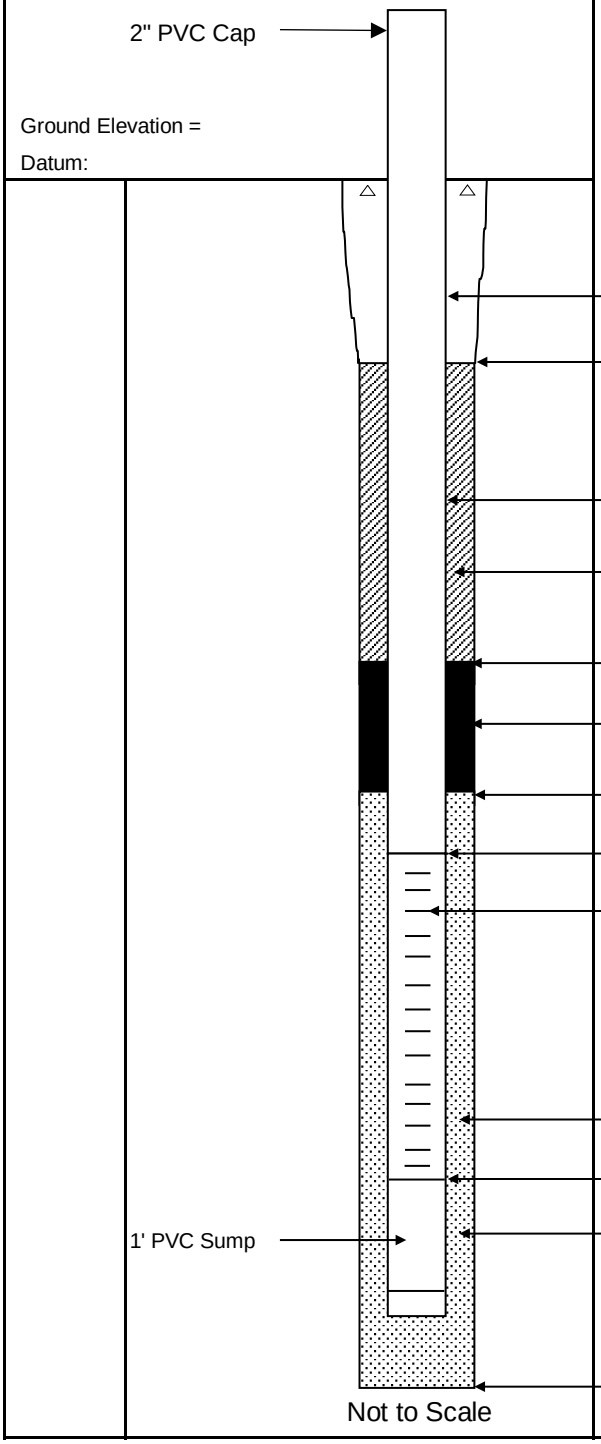
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0075

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0075
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



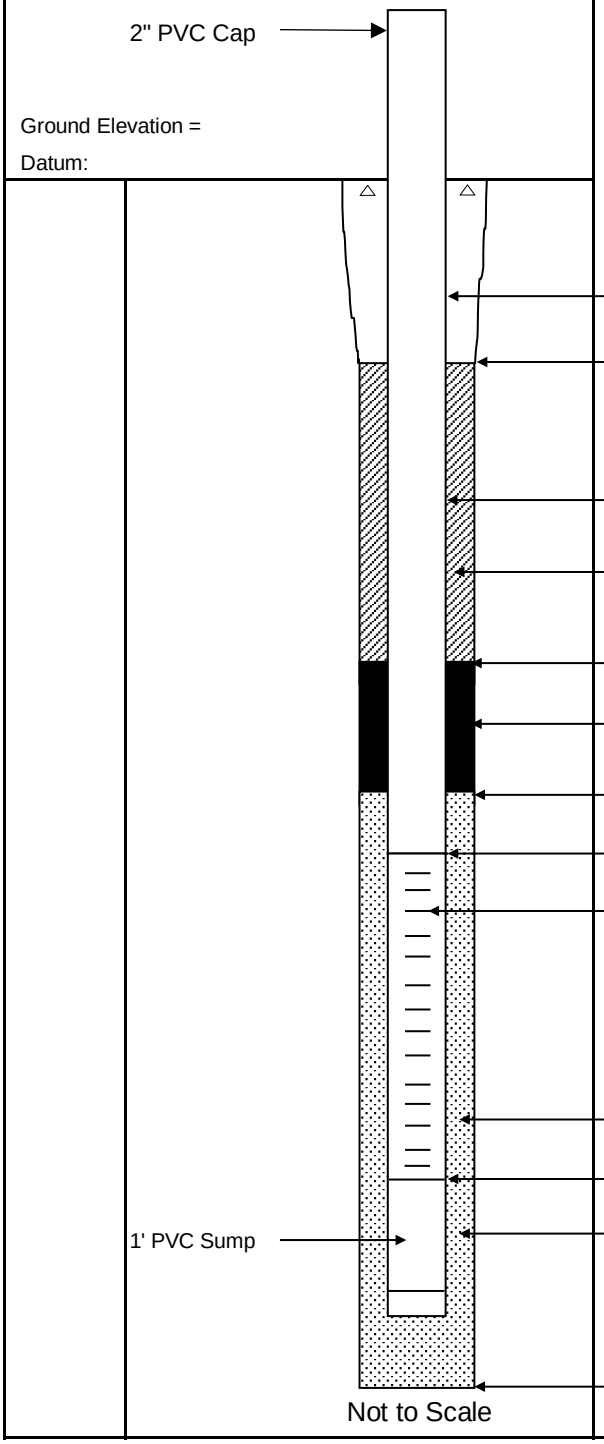
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0146

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0146
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



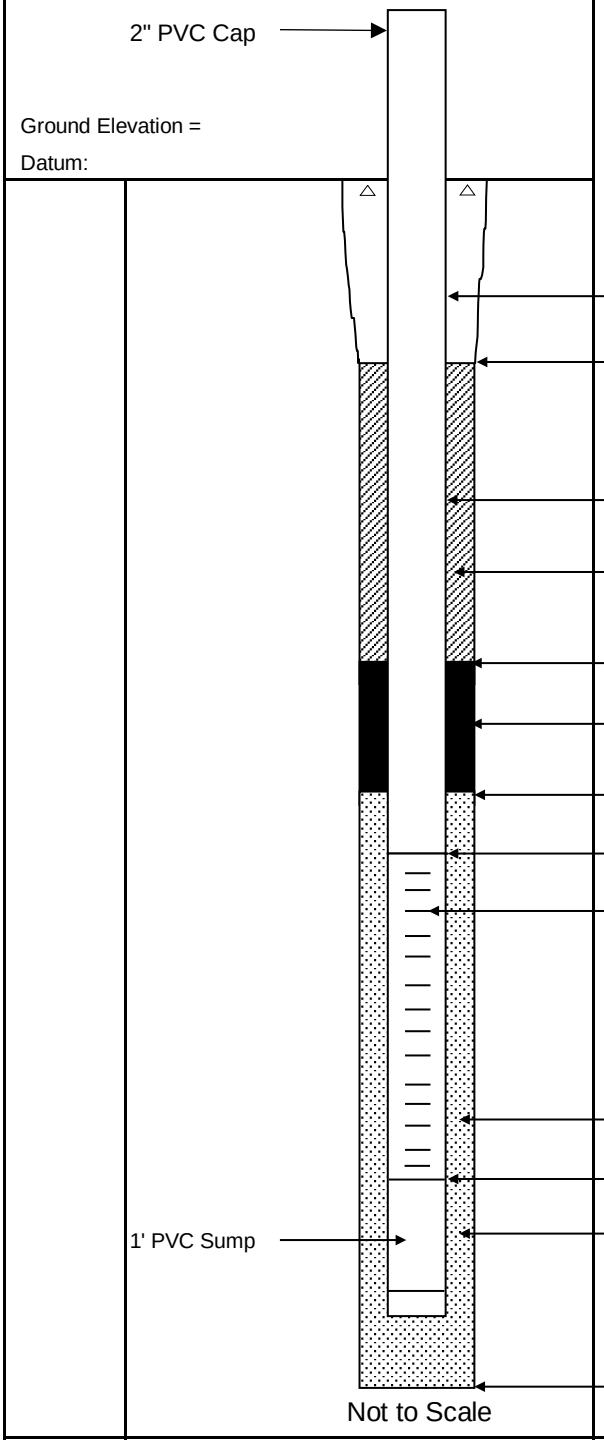
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0158

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0158
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/10/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



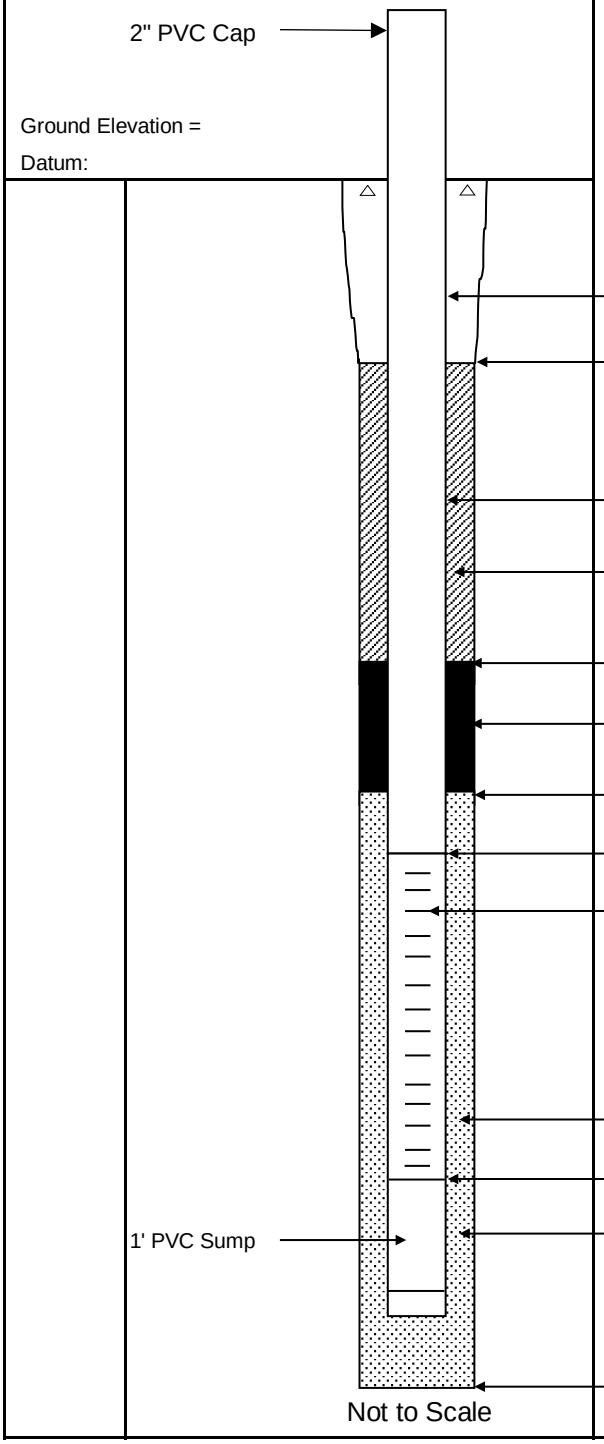
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0163

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0163
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



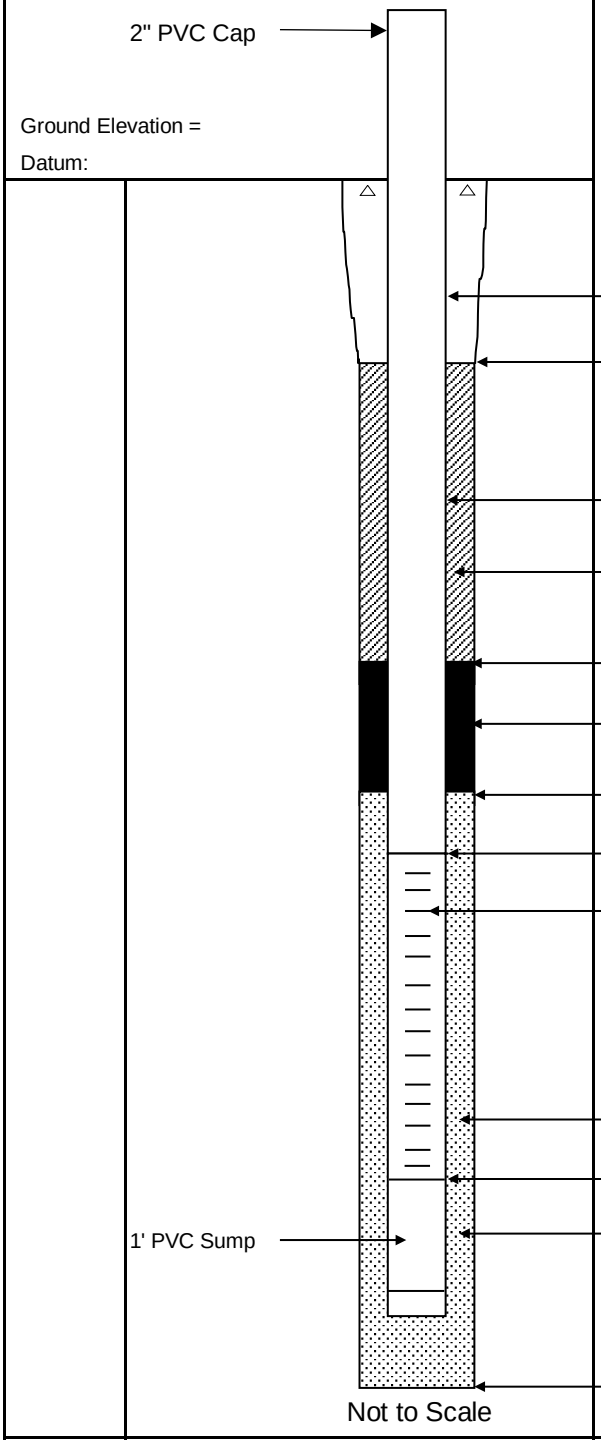
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.0'
Elevation / Depth of Top of Screen:		/ 39.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 41.5'
Elevation / Depth of Bottom of Filter Pack:		/ 42.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0162

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0162
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



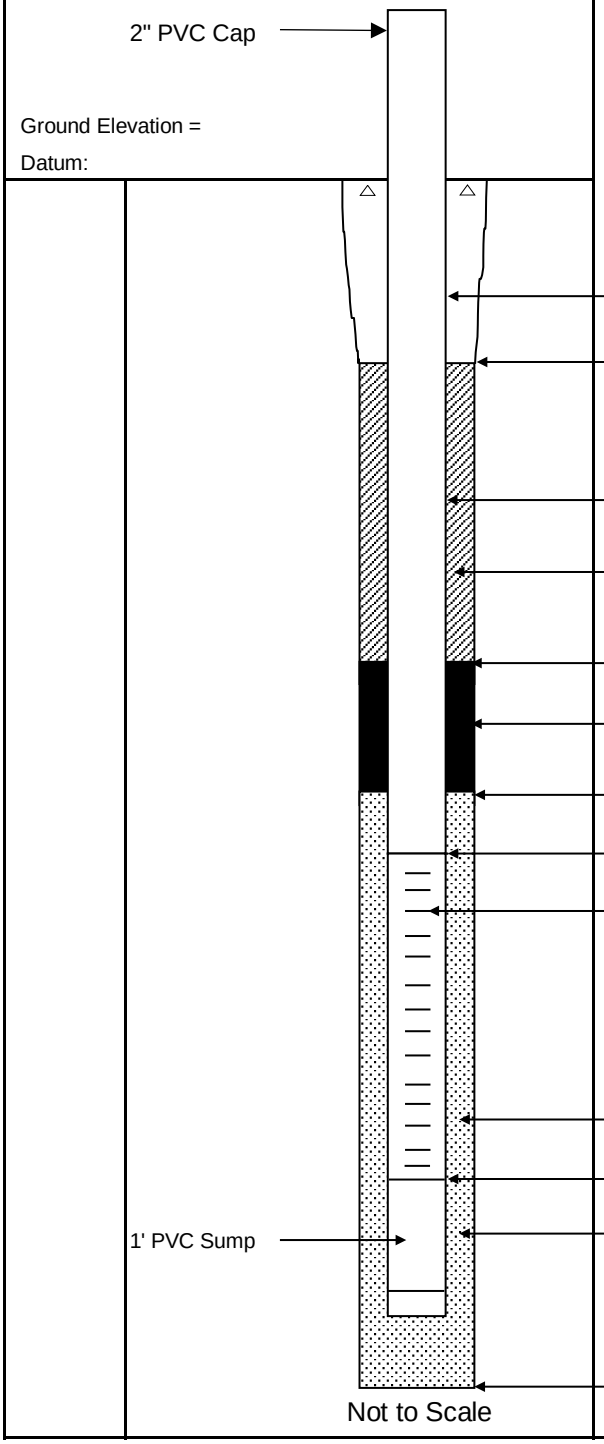
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0157

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0157
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



I.D. of Riser: 2"

Elevation / Depth to Top of Grout: / 3.0'

Borehole Diameter: 6"

Type of Riser: Sch. 40 PVC

Type of Seal: Bentonite/ Portland Cement Grout

Elevation / Depth of Seal: / 37.0'

Type of Seal: Bentonite

Elevation / Depth of Top of Filter Pack: / 40.0'

Elevation / Depth of Top of Screen: / 40.5'

Type of Screen: Sch. 40 PVC

Slot Size x Length: 0.010" x 24" Pre-Packed Screen

I.D. of Screen: 2"

Type of Filter Pack: 20/30 Filter Sand

Elevation / Depth of Bottom of Screen: / 42.5'

Elevation / Depth of Bottom of Filter Pack: / 43.5'

Type of Backfill Below Well: Bentonite

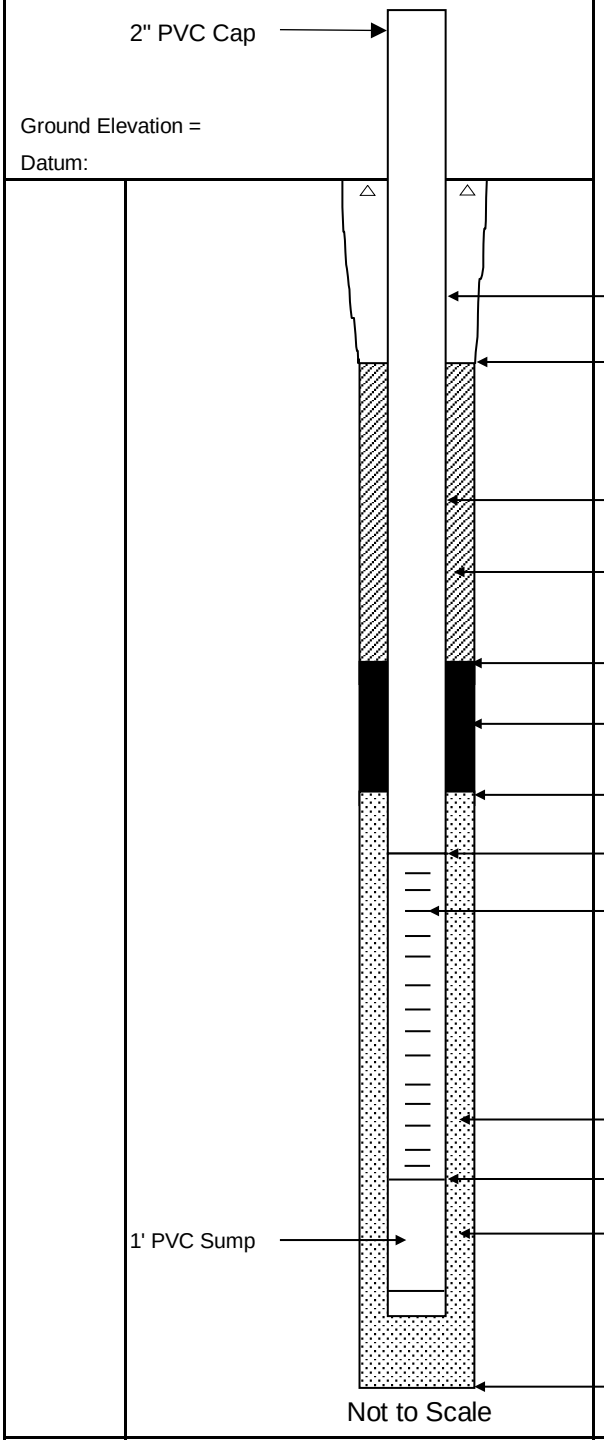
Elevation / Total Depth of Borehole: / 50.0'

Tetra Tech, Inc.

BORING No.: AS0133

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0133
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



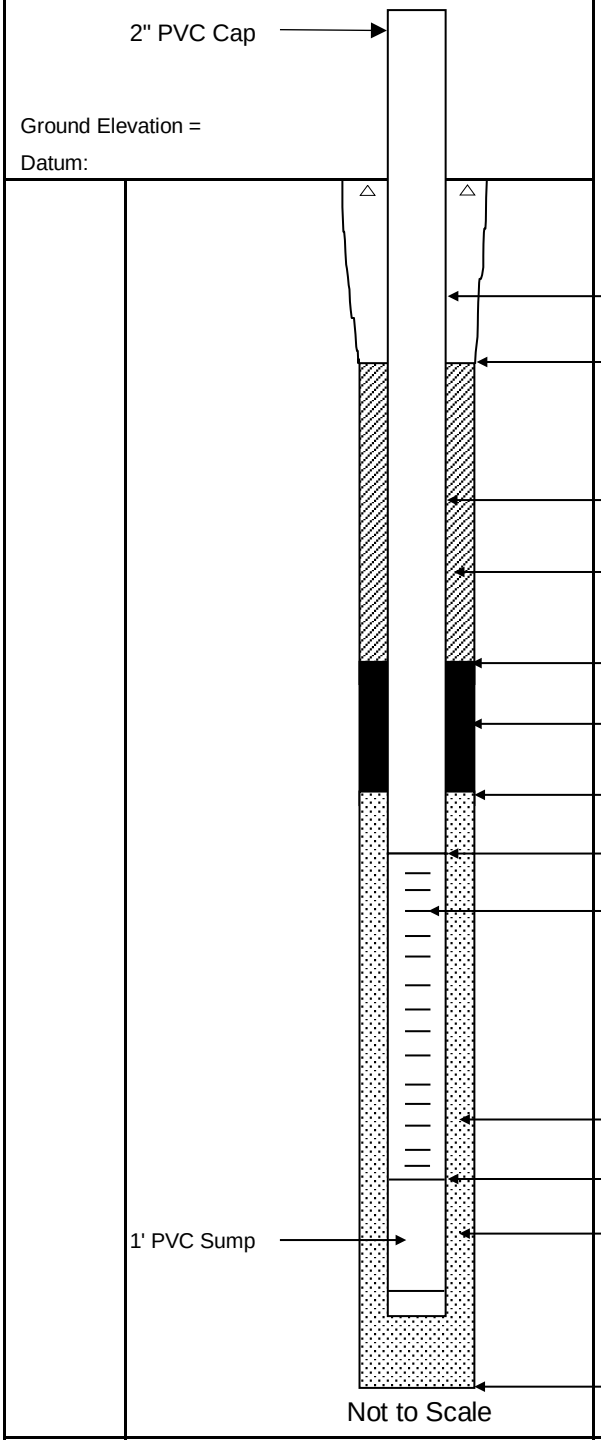
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0122

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0122
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/11/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



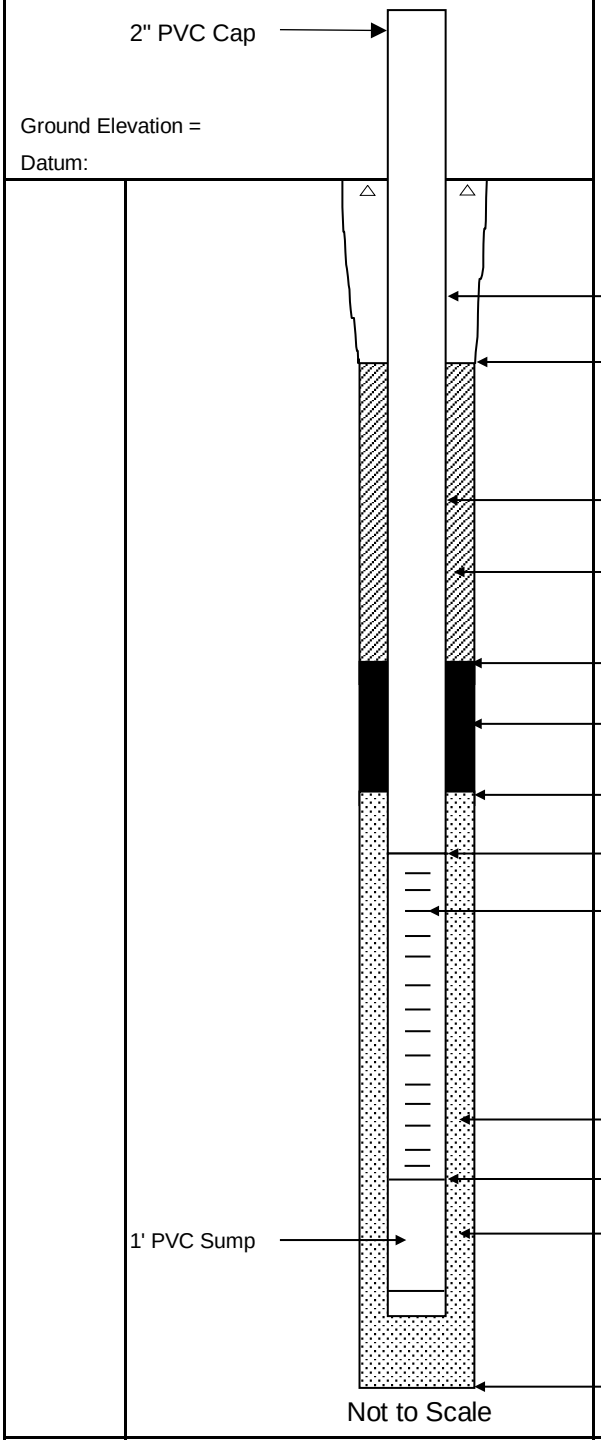
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0110

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0110
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



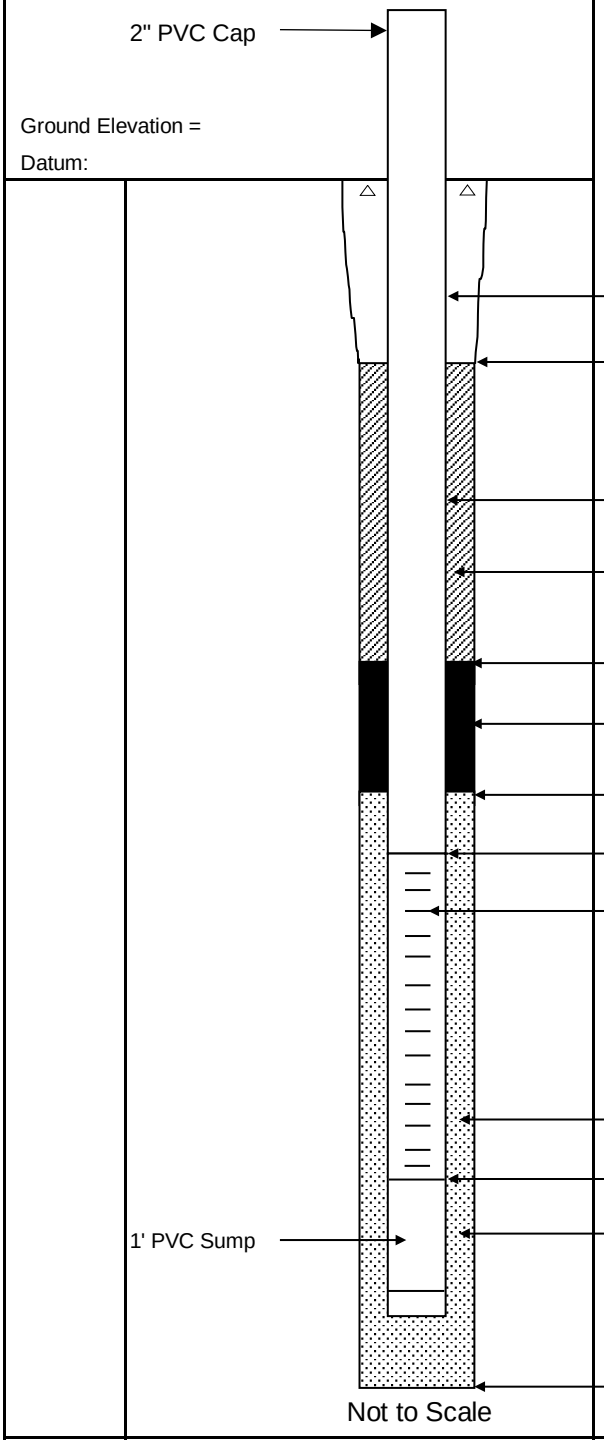
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0099

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0099
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



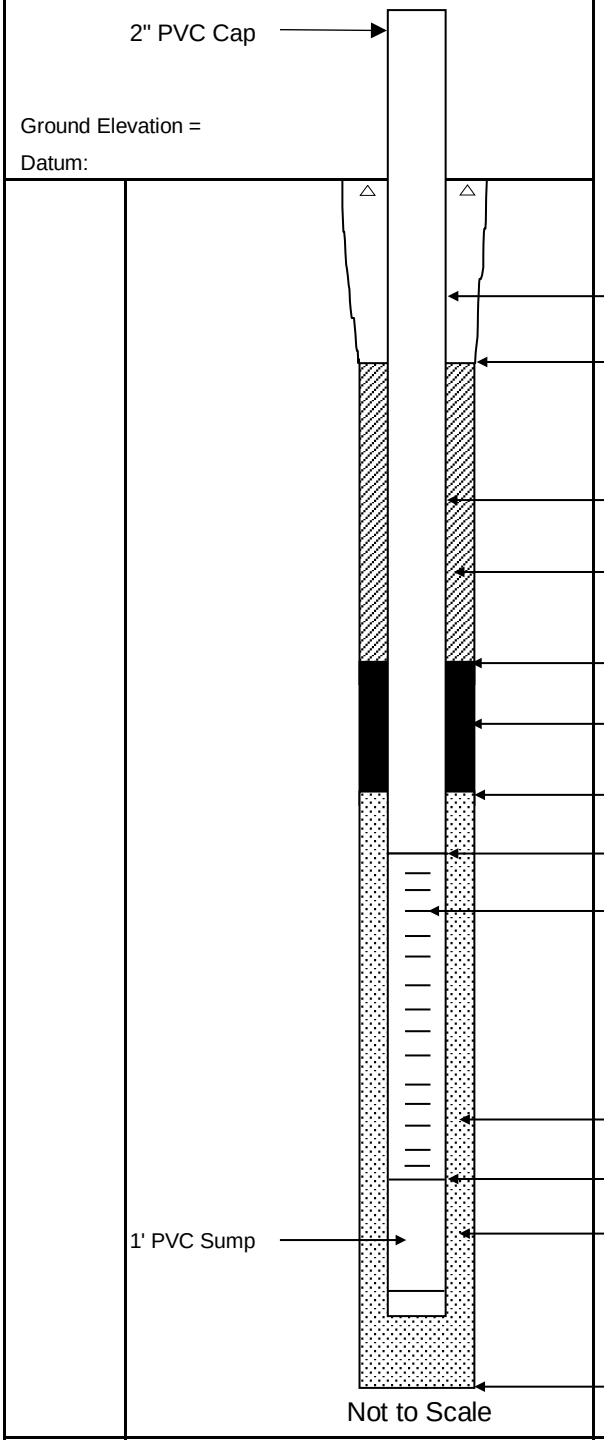
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0091

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0091
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



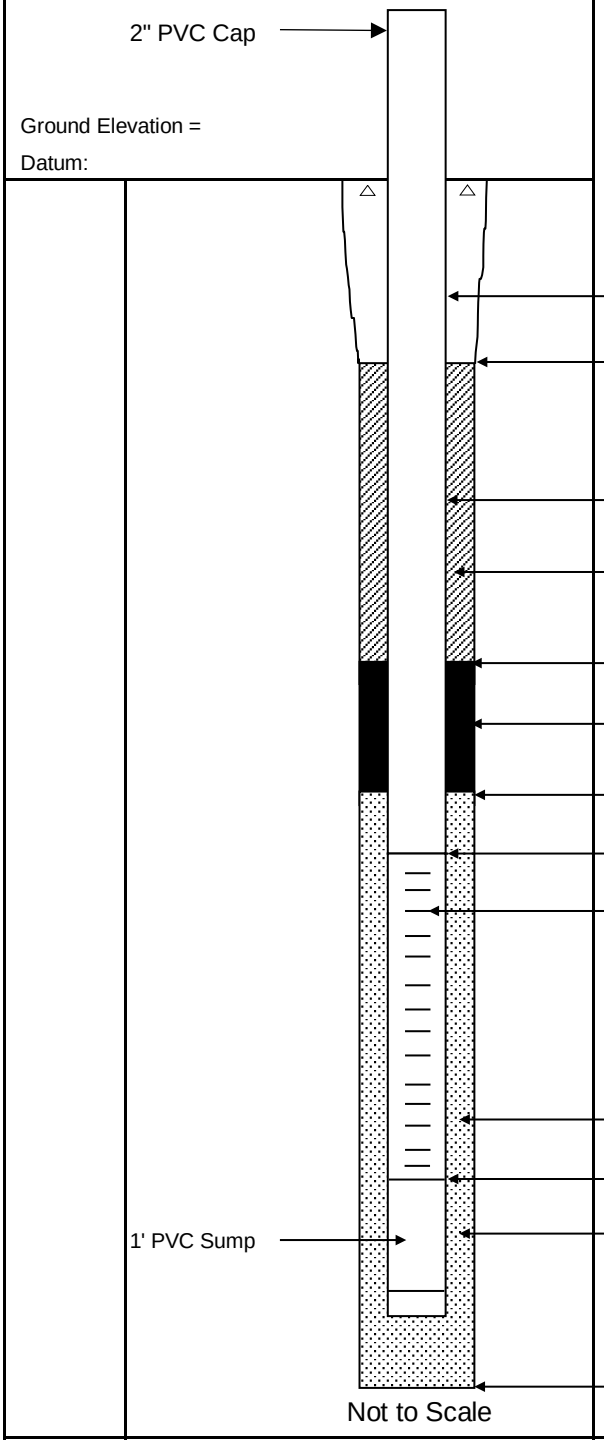
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.0'
Elevation / Depth of Top of Screen:		/ 42.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0074

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0074
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/12/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



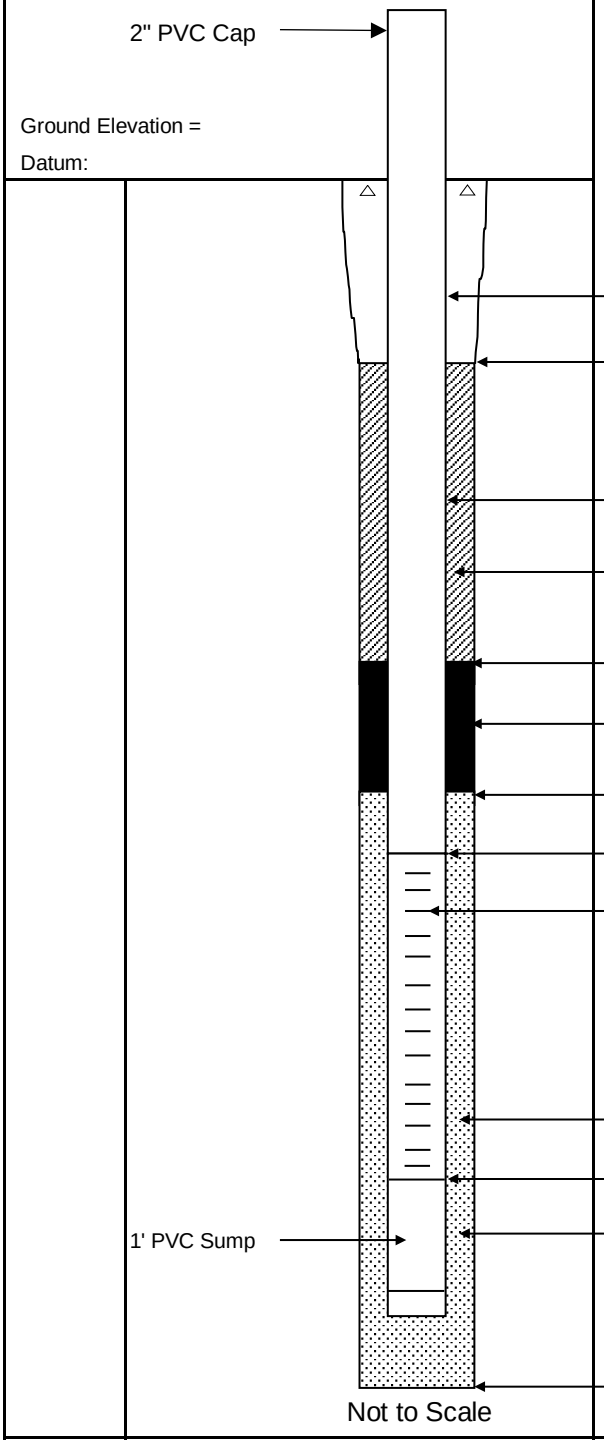
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0082

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0082
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



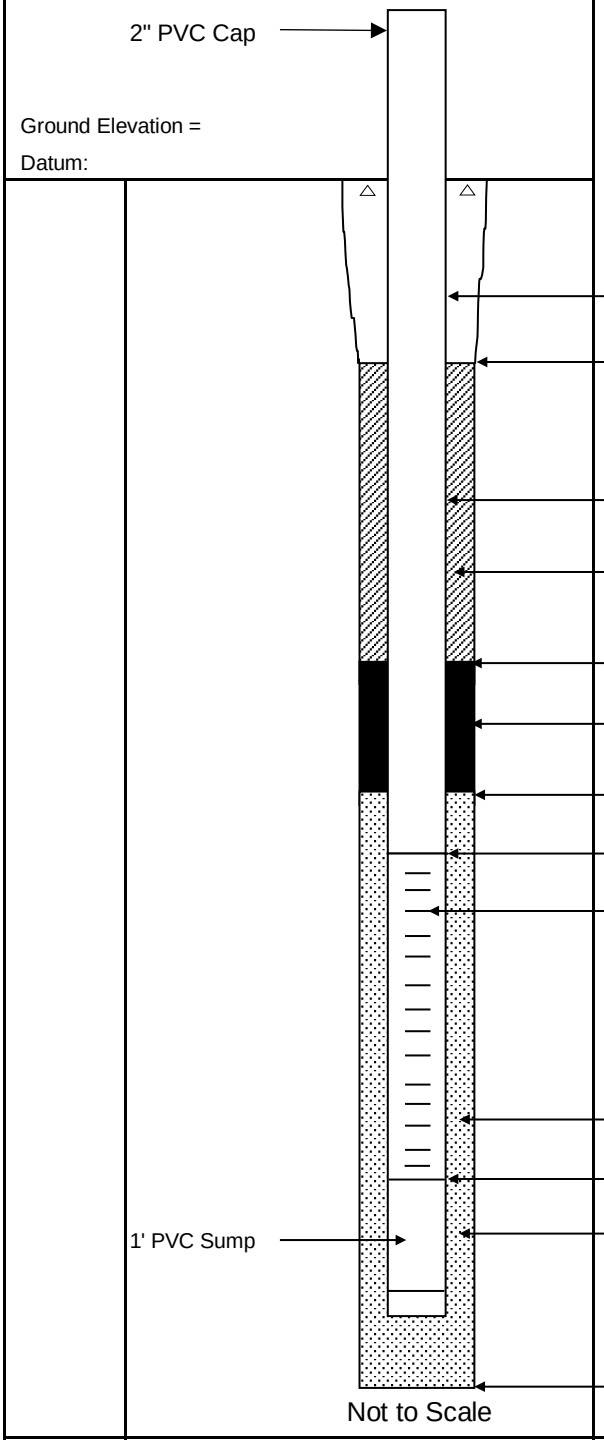
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0090

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0090
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



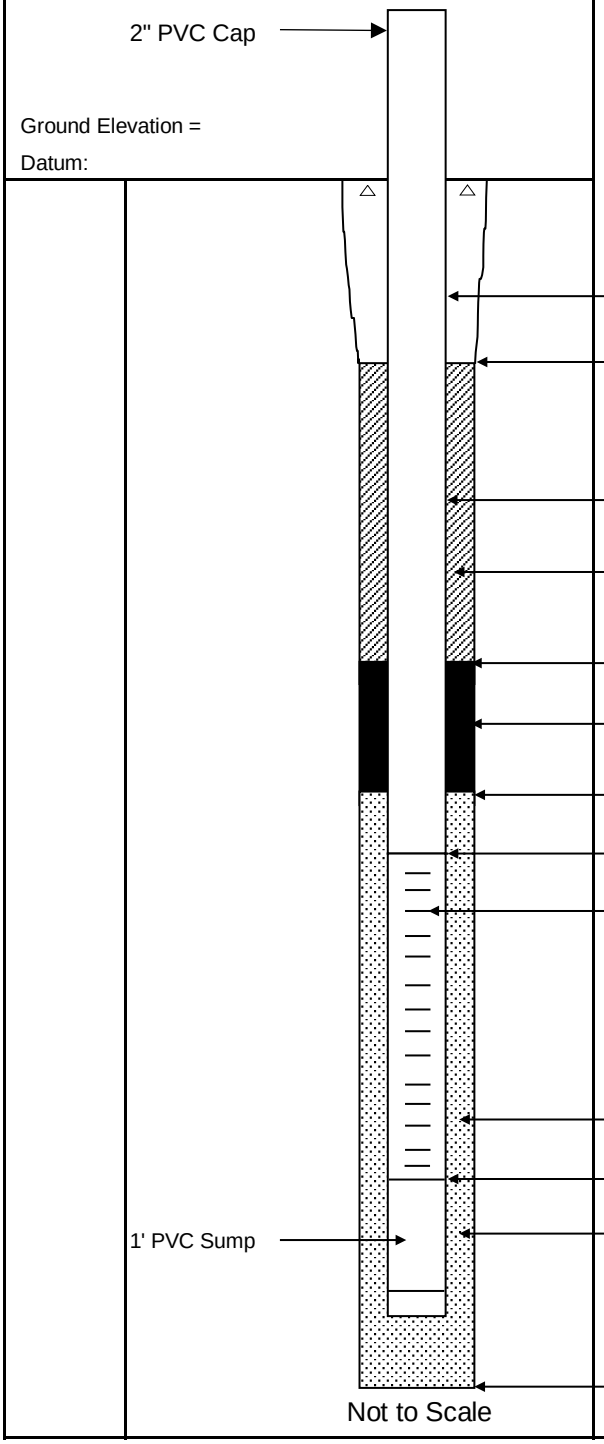
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0098

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0098
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



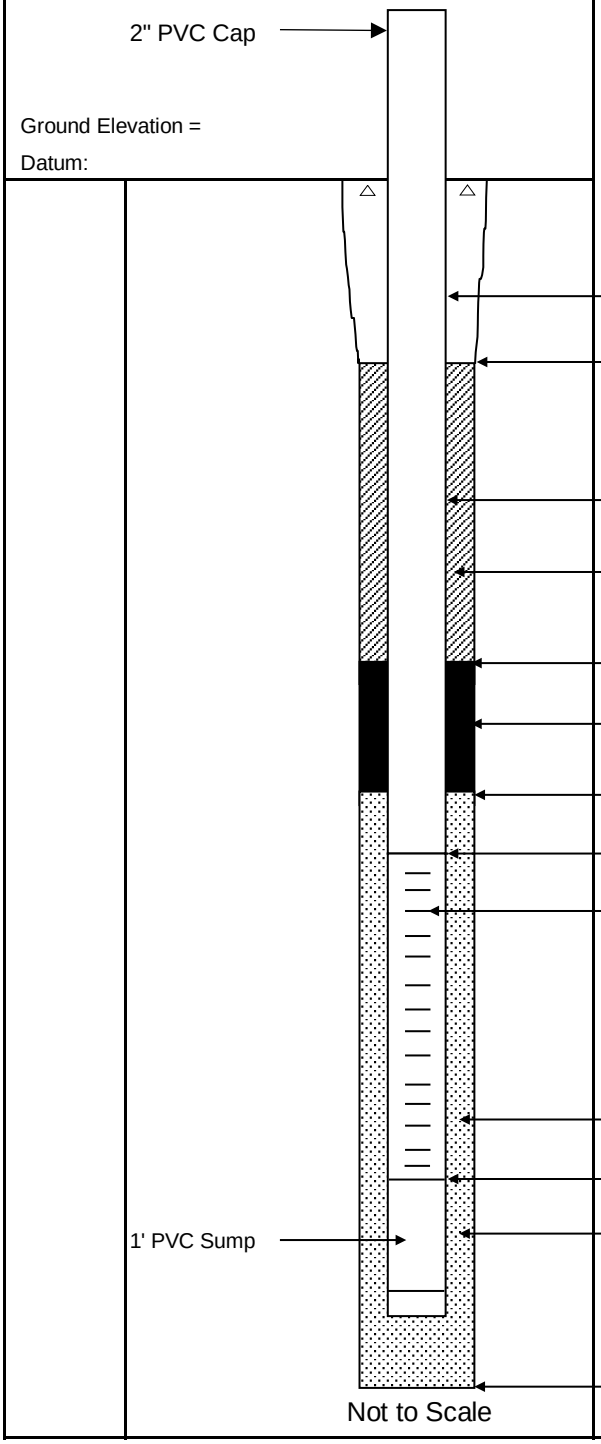
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0109

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0109
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/13/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



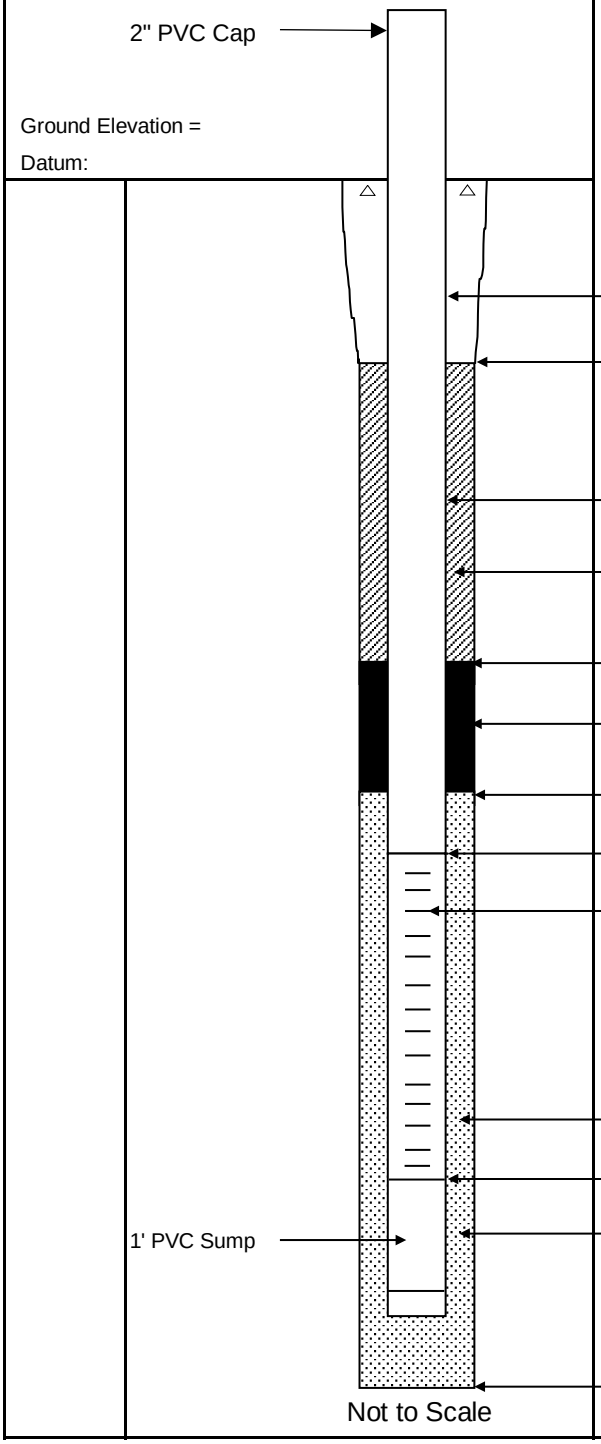
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.0'
Elevation / Depth of Top of Screen:		/ 42.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0121

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0121
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



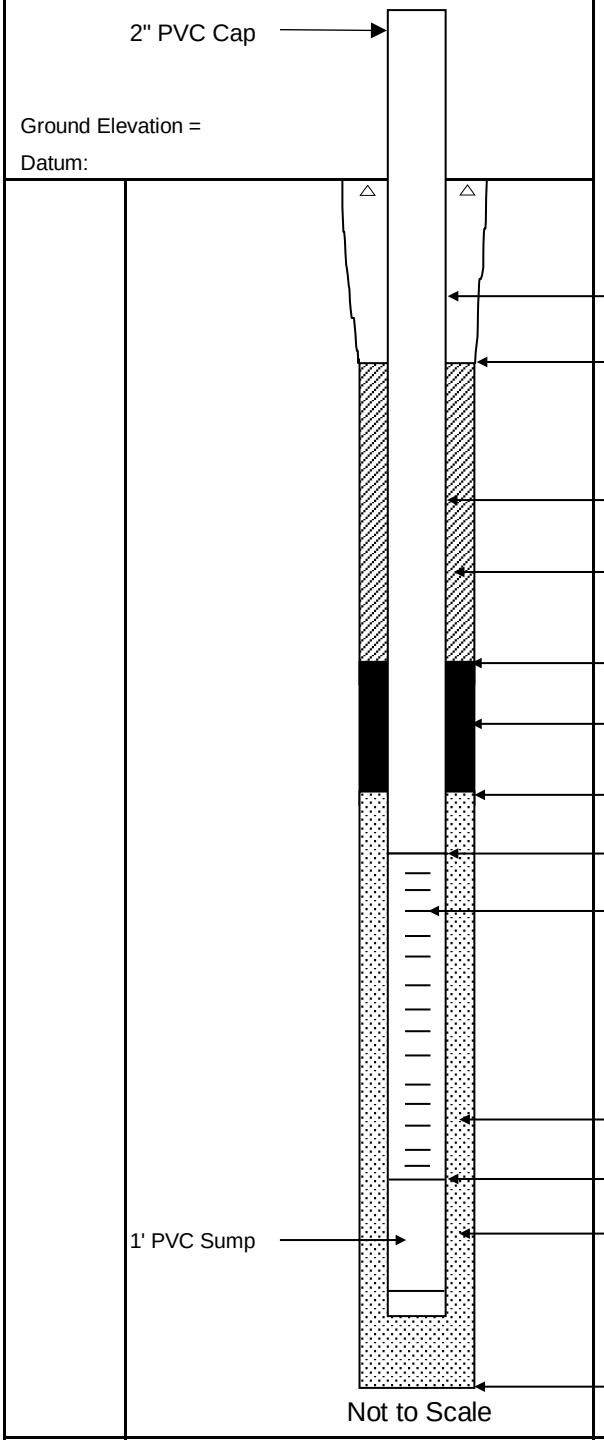
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0132

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0132
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



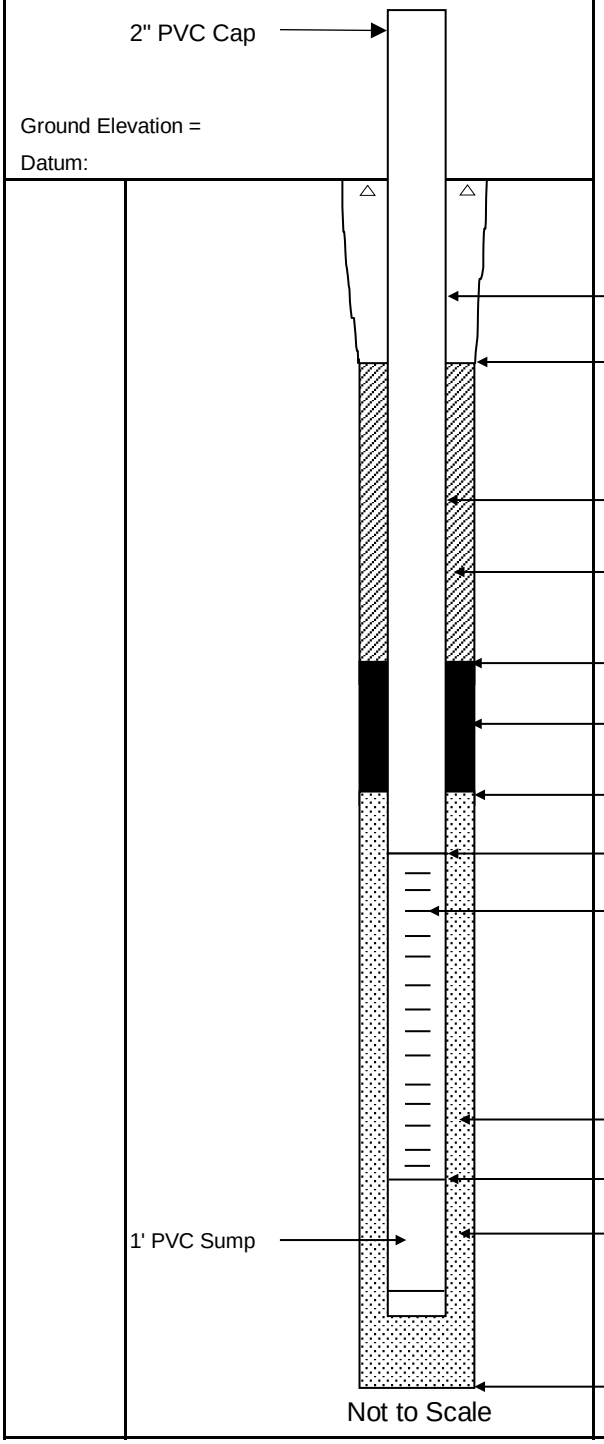
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0144

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0144
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/17/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



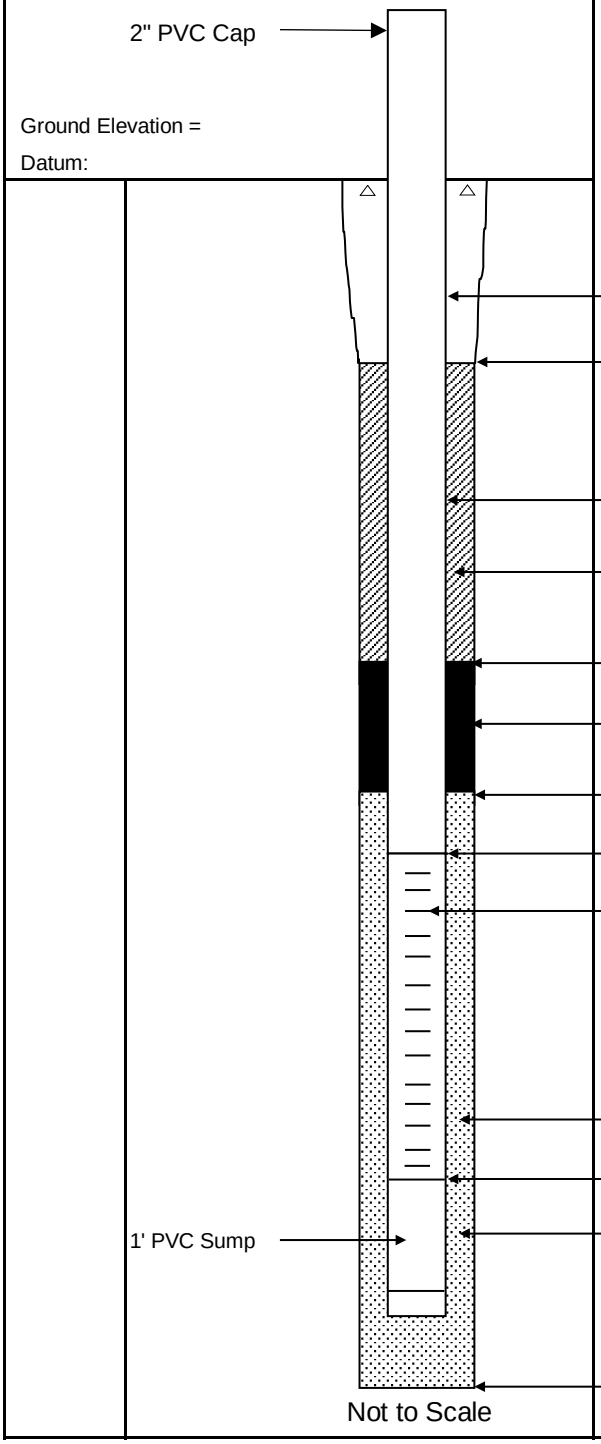
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0156

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0156
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



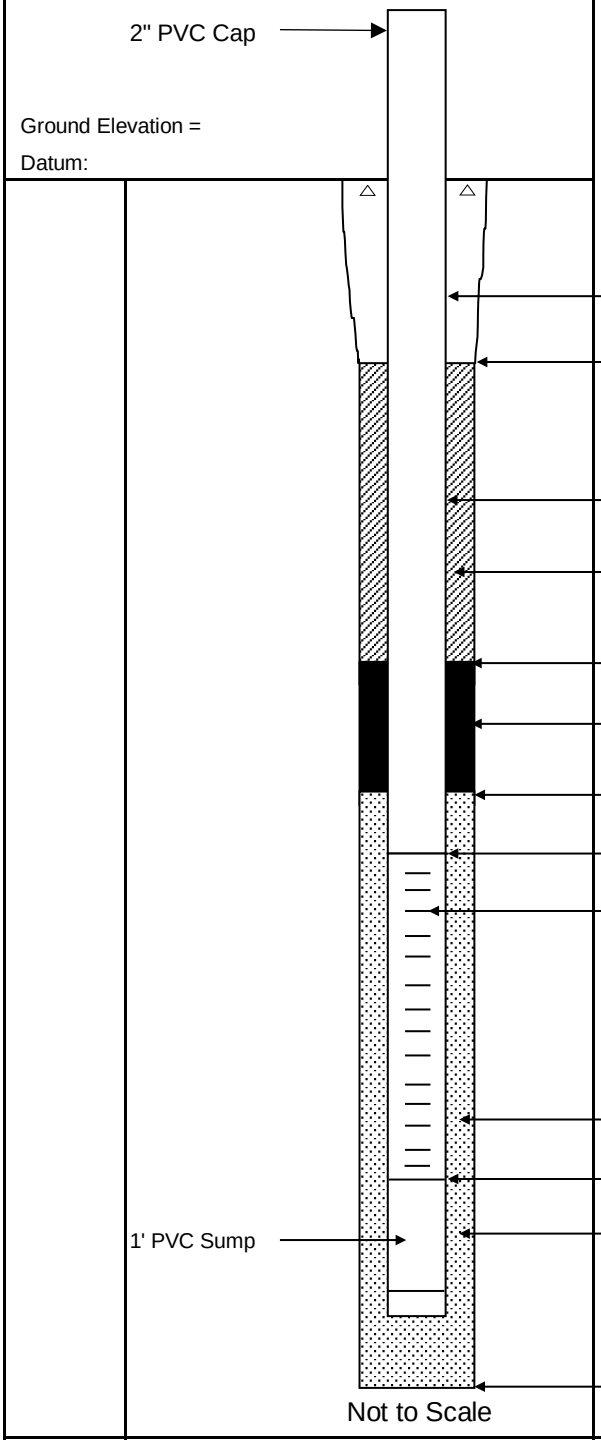
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0161

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0161
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



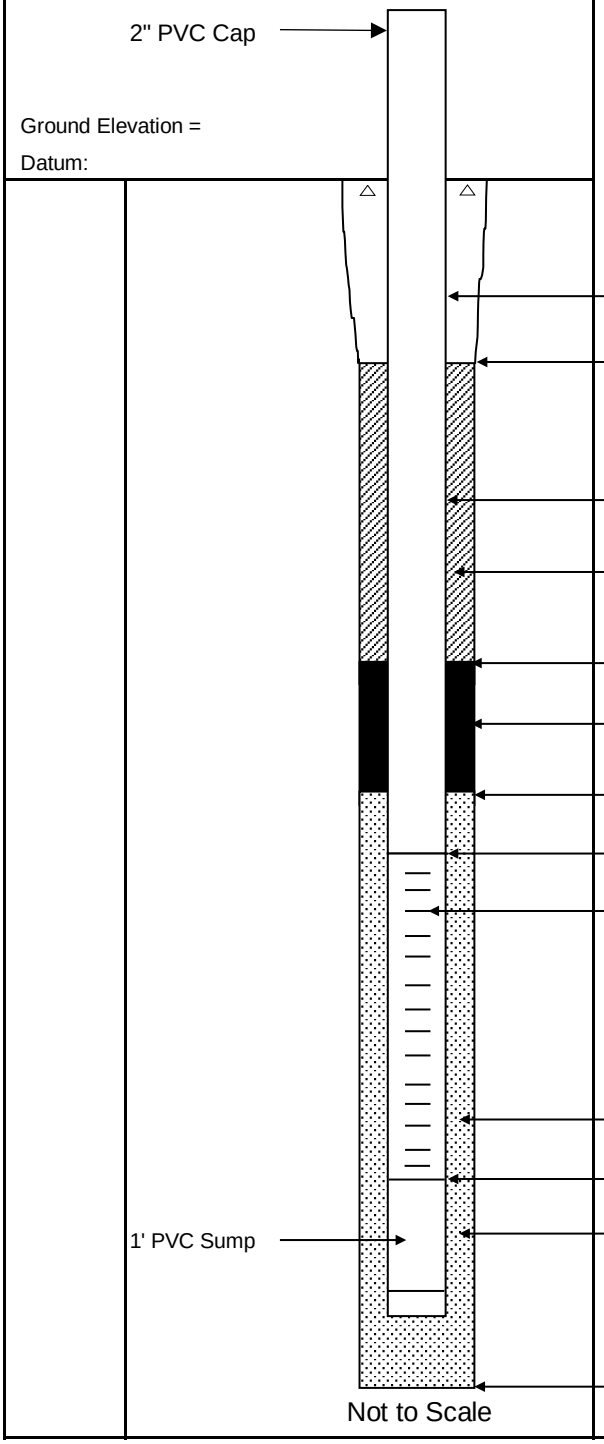
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0167

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0167
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



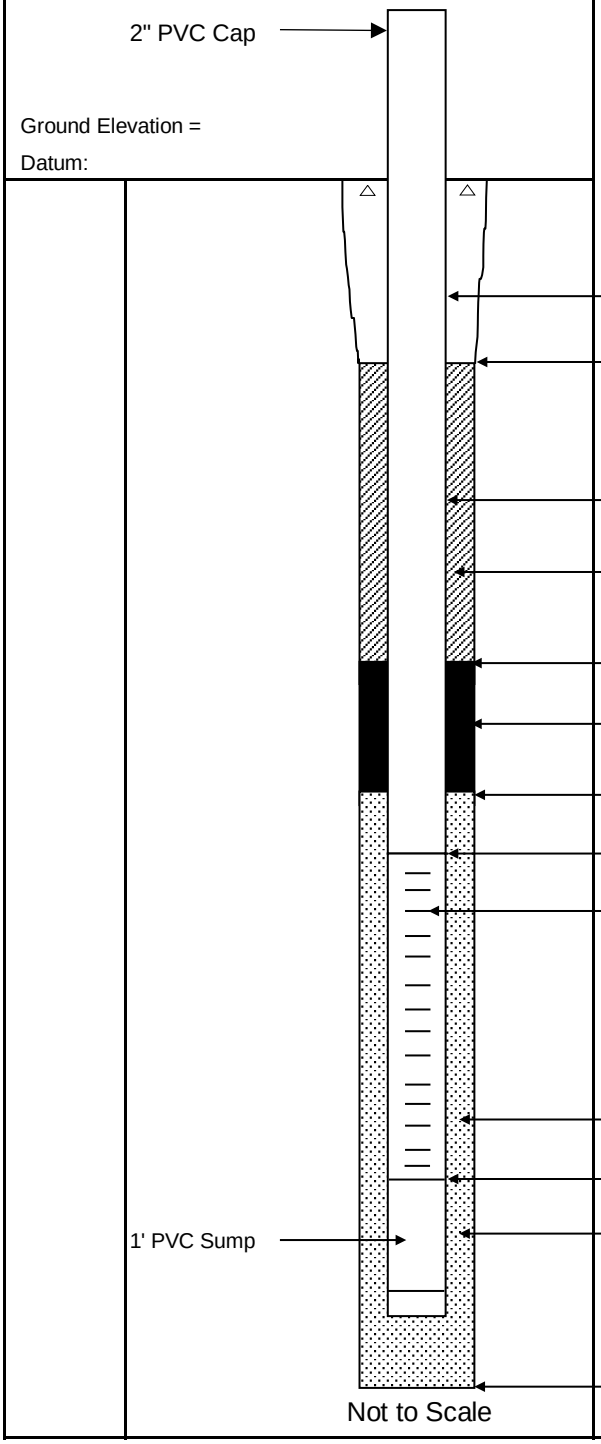
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0166

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0166
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



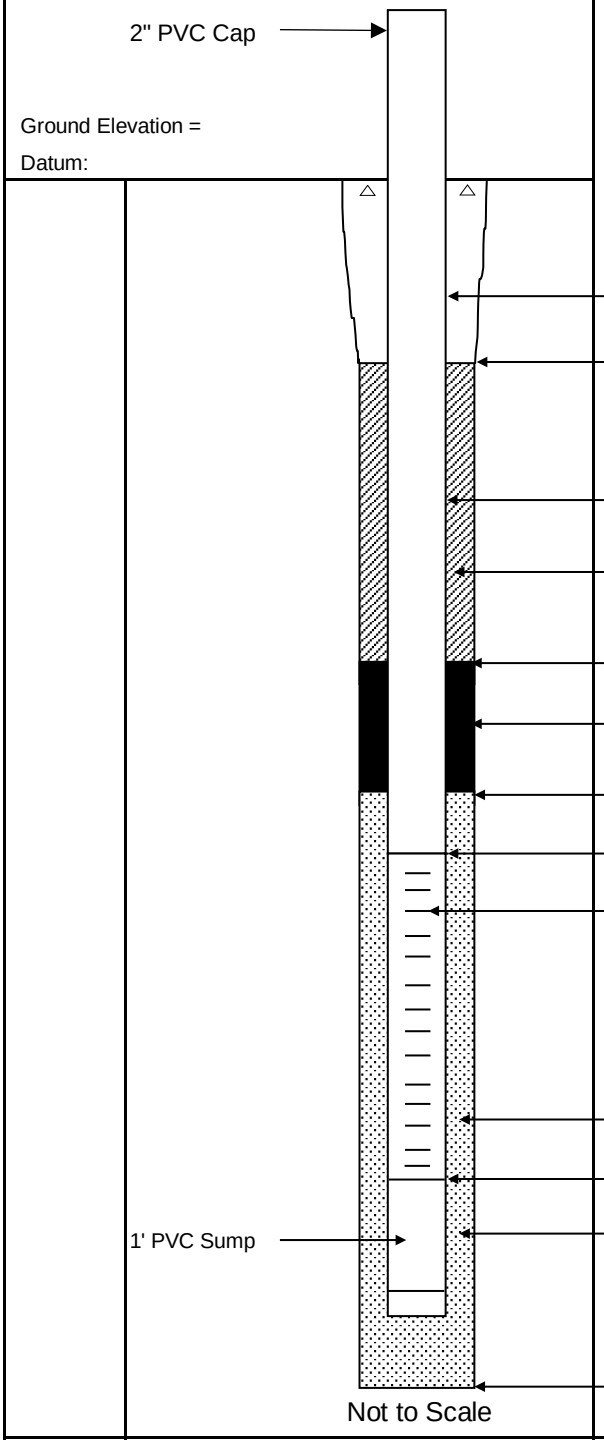
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0165

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0165
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/18/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



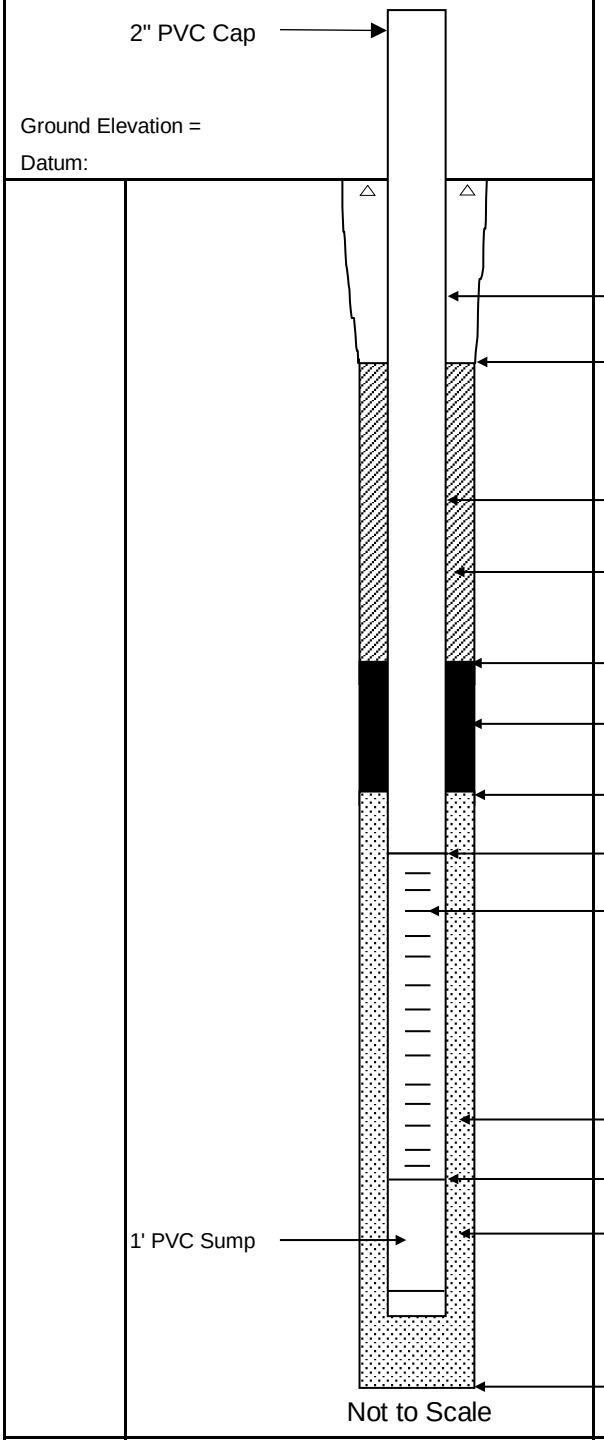
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.0'
Elevation / Depth of Top of Screen:		/ 39.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 41.5'
Elevation / Depth of Bottom of Filter Pack:		/ 42.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0160

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0160
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



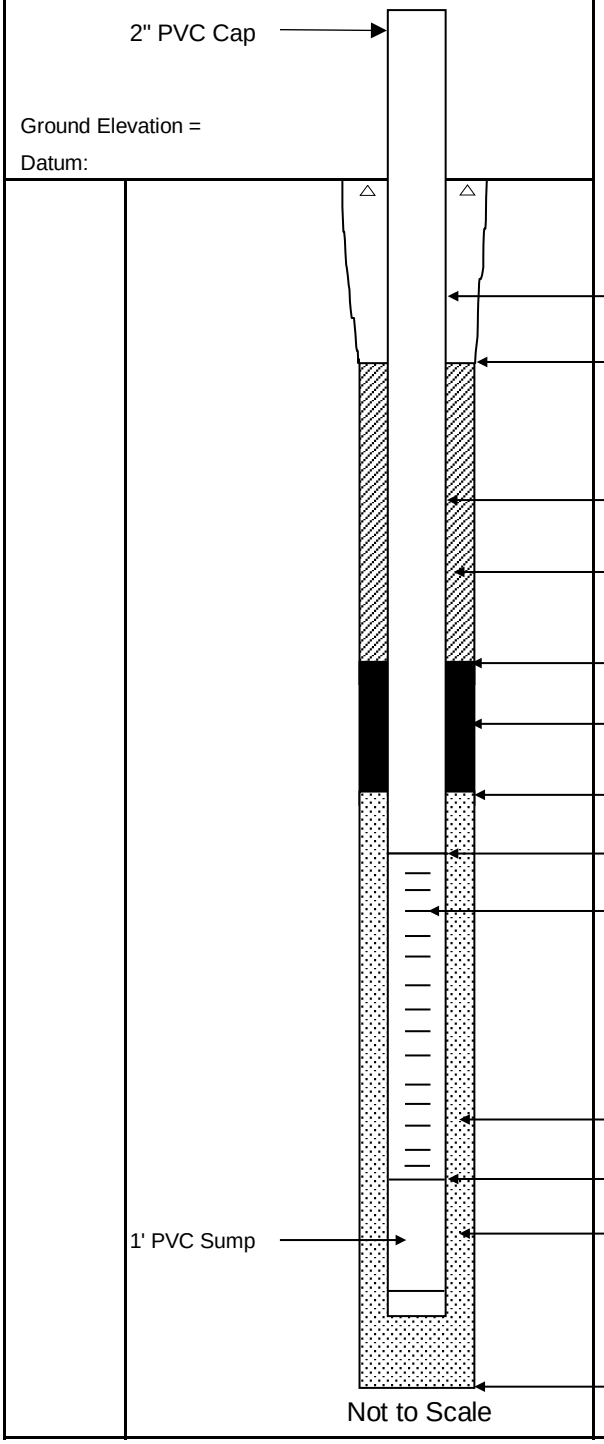
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 35.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 38.0'
Elevation / Depth of Top of Screen:		/ 38.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 40.5'
Elevation / Depth of Bottom of Filter Pack:		/ 41.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0155

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0155
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



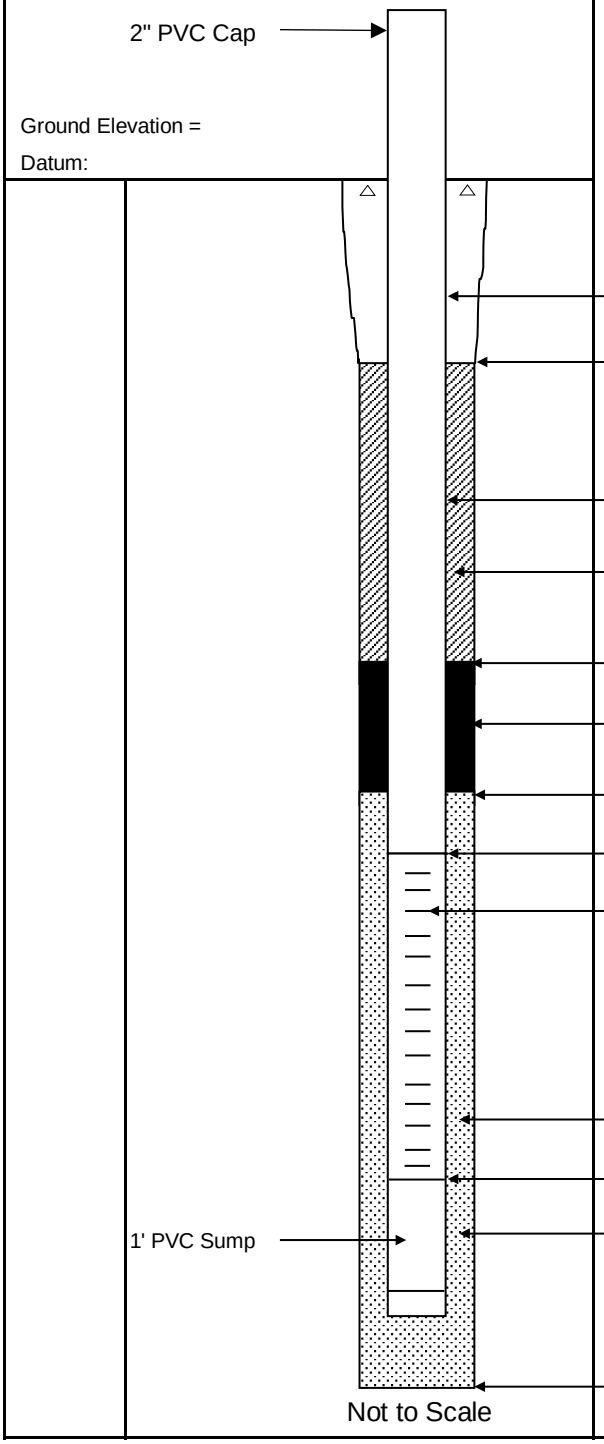
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.0'
Elevation / Depth of Top of Screen:		/ 39.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 41.5'
Elevation / Depth of Bottom of Filter Pack:		/ 42.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0143

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0143
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



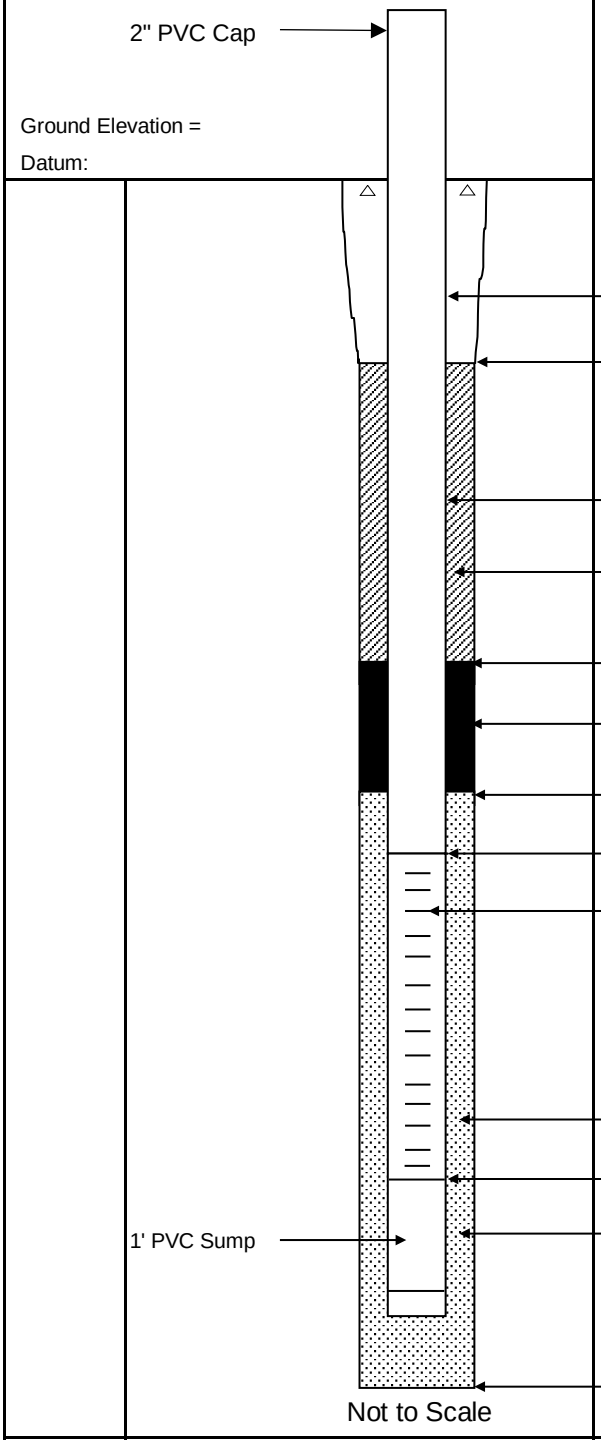
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0131

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0131
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



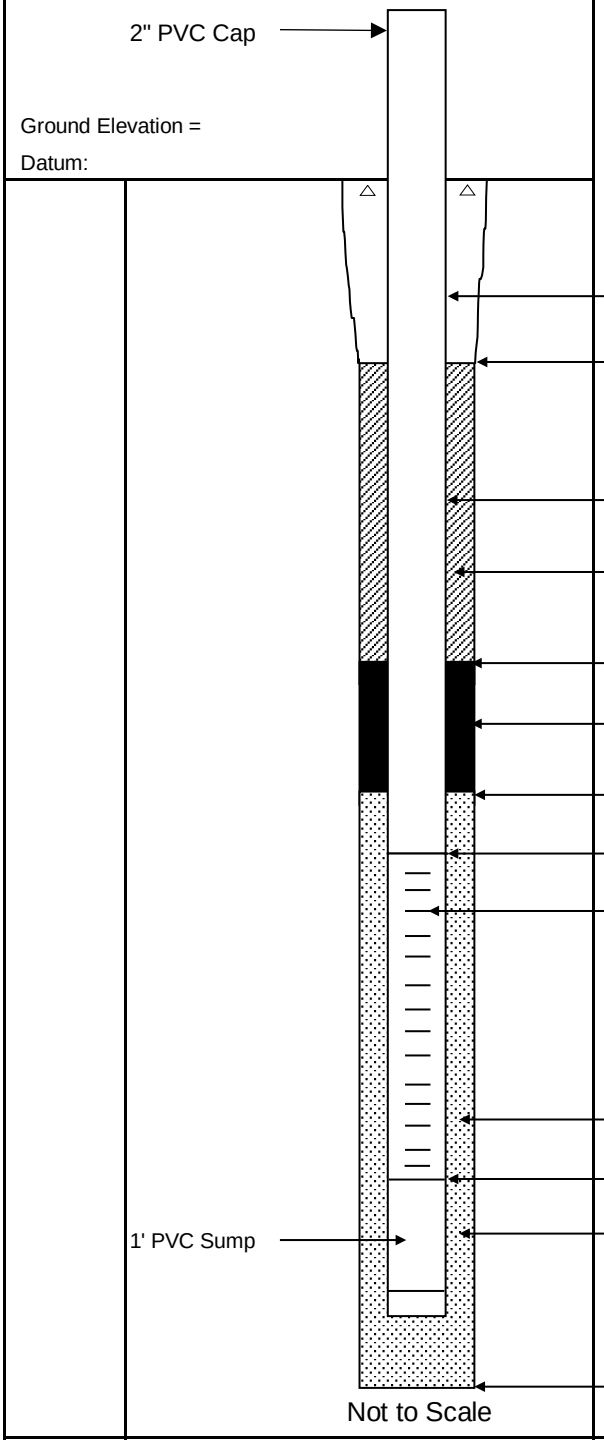
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0120

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0120
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	12/19/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



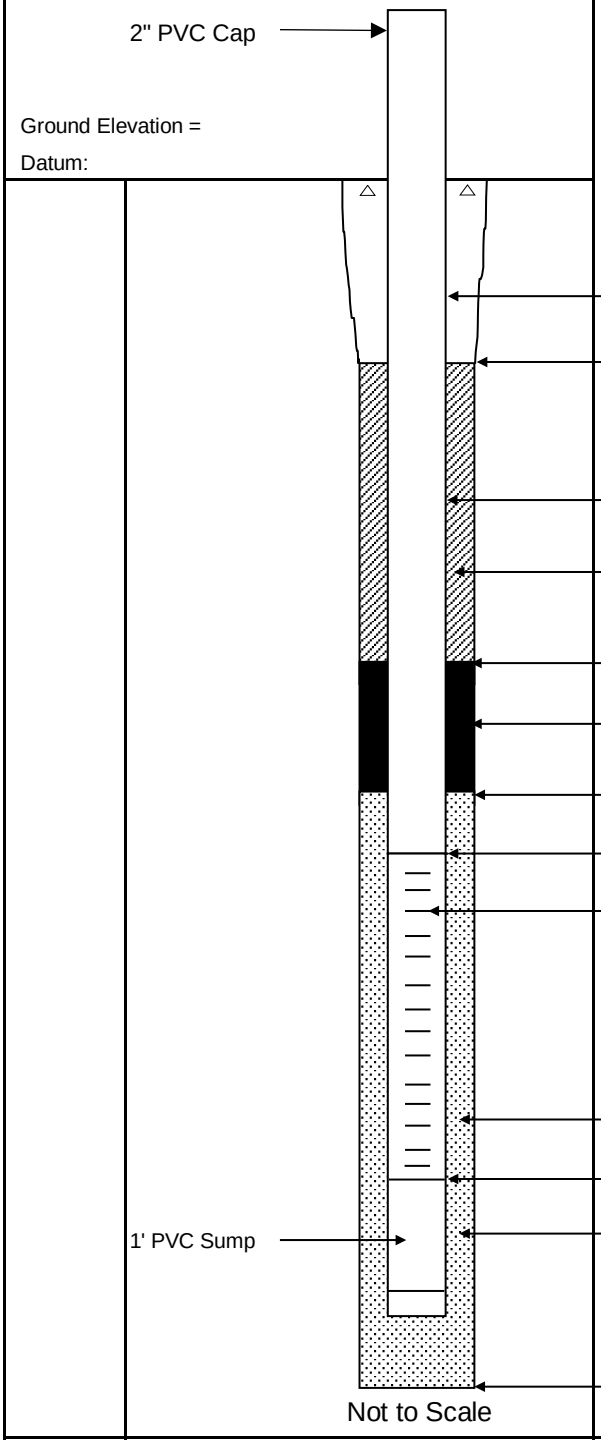
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0097

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0097
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



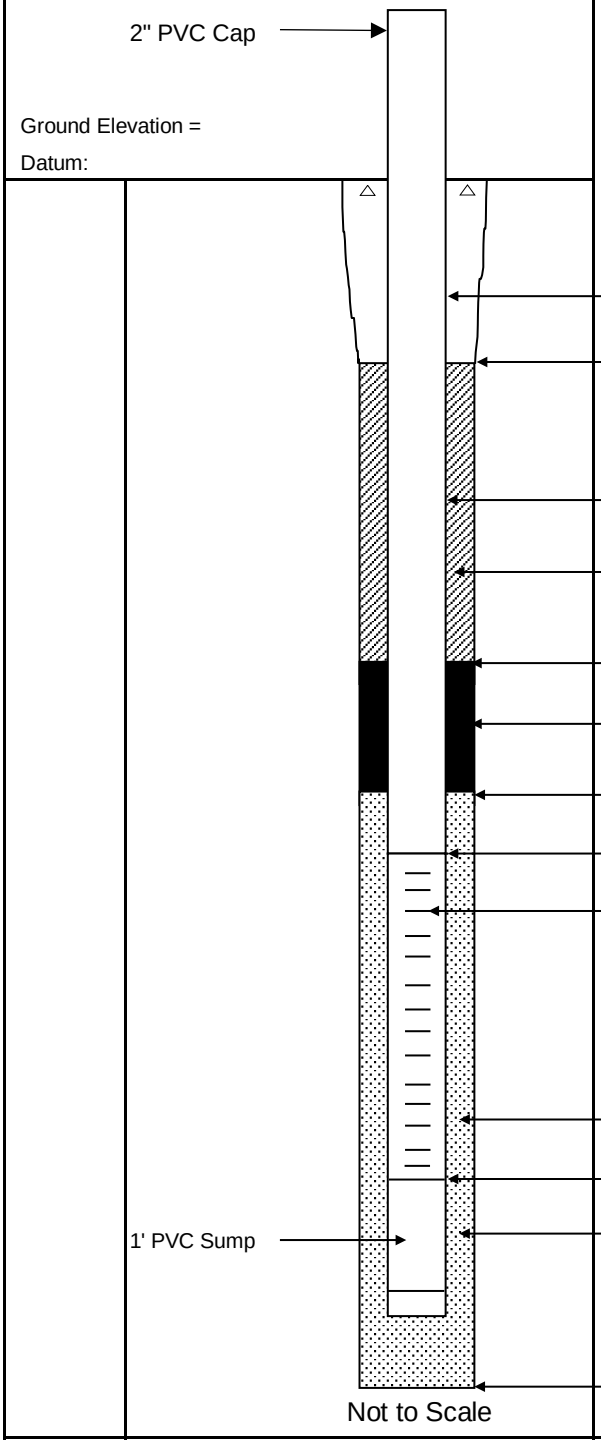
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.0'
Elevation / Depth of Top of Screen:		/ 42.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0108

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0108
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



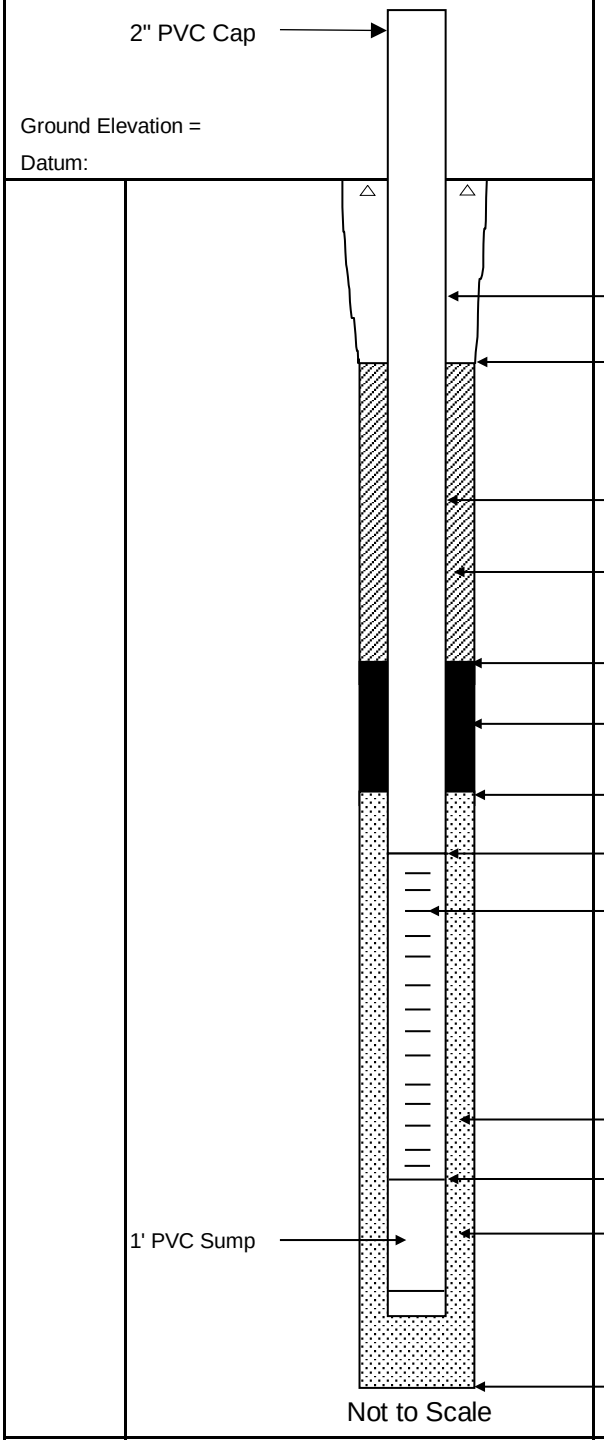
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0089

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0089
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/06/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



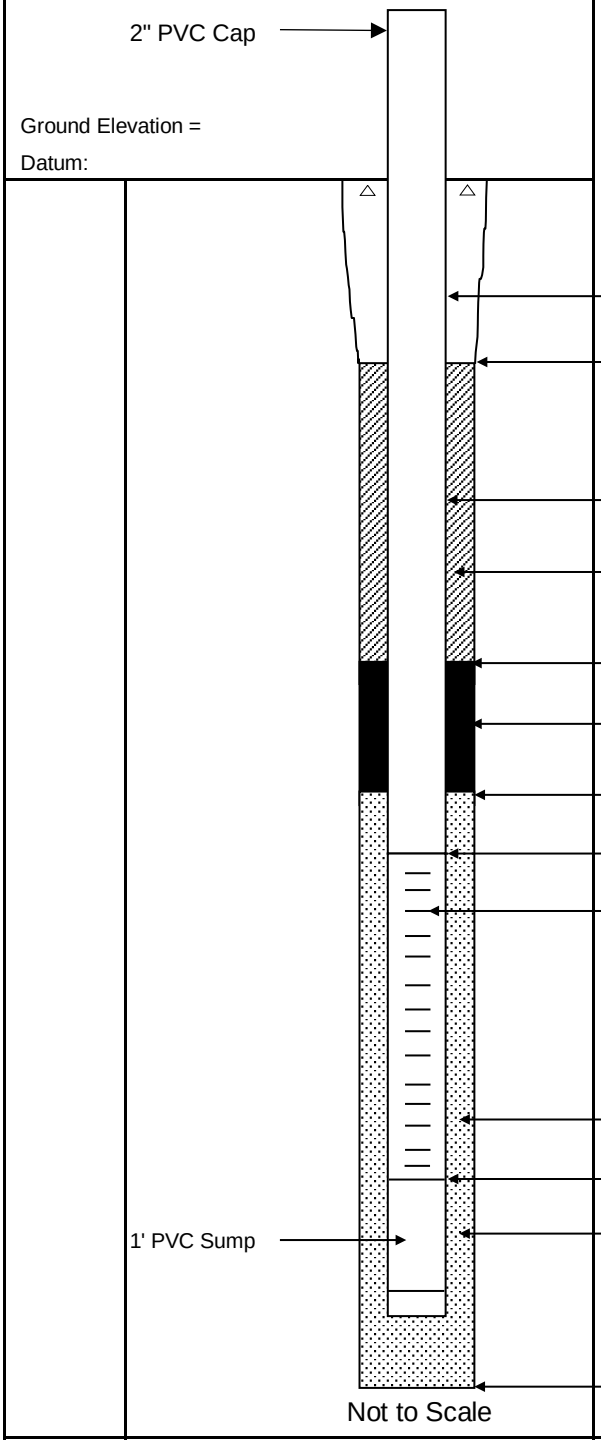
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0088

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0088
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



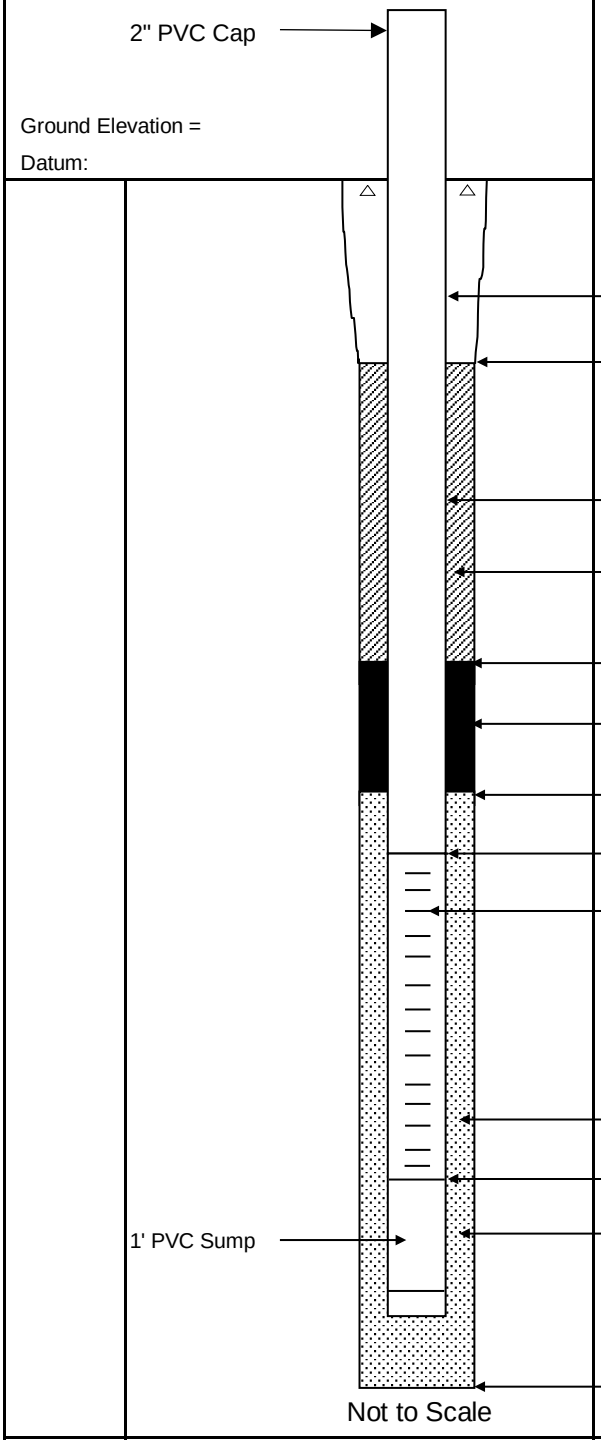
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 41.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 44.0'
Elevation / Depth of Top of Screen:		/ 44.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 46.5'
Elevation / Depth of Bottom of Filter Pack:		/ 47.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0096

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0096
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



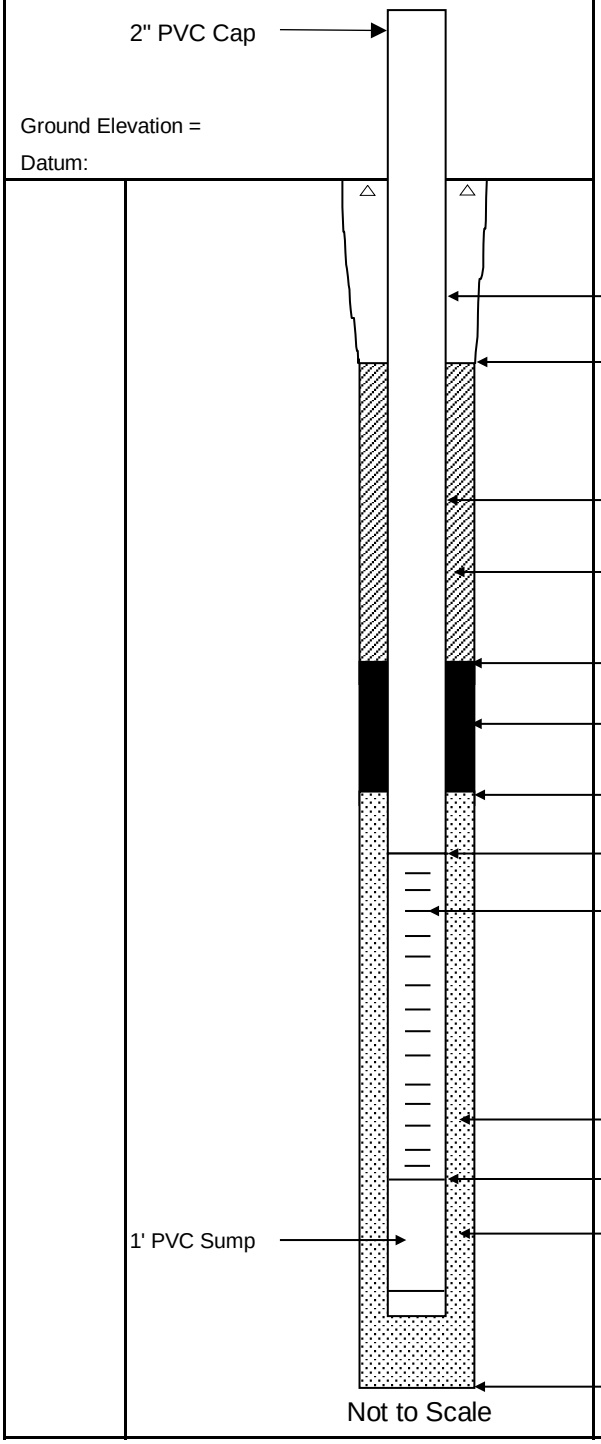
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 40.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 43.5'
Elevation / Depth of Top of Screen:		/ 44.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 46.0'
Elevation / Depth of Bottom of Filter Pack:		/ 47.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0107

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0107
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



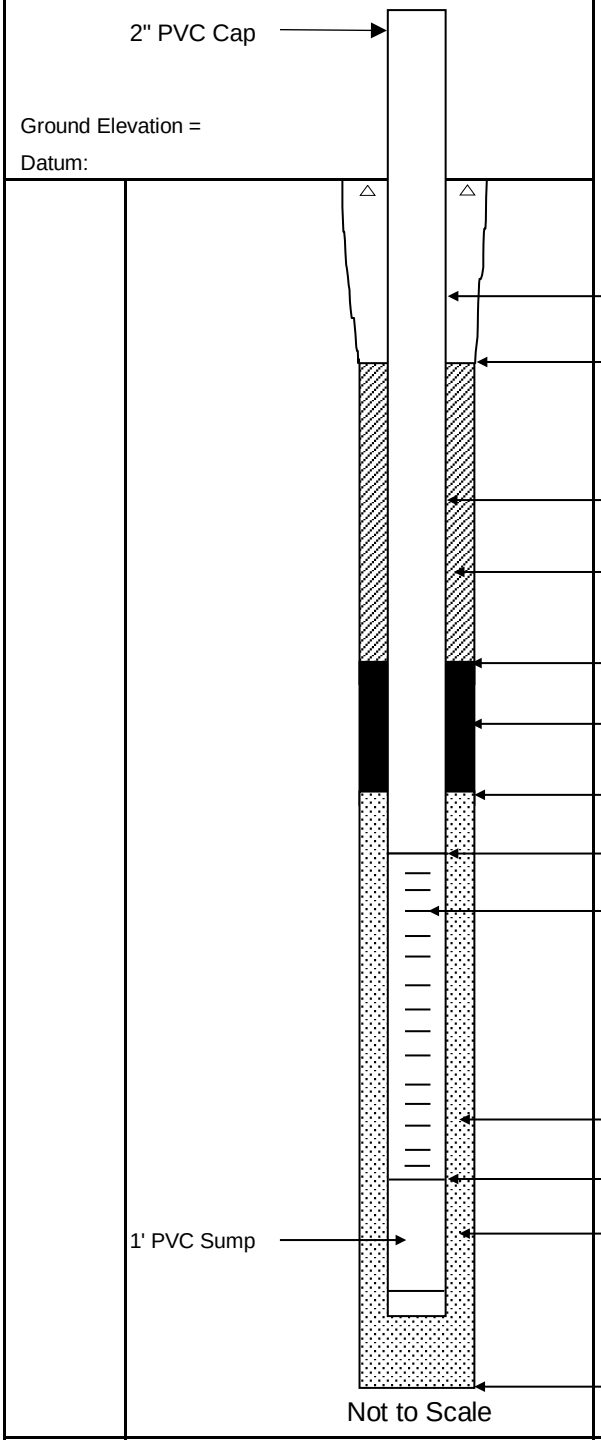
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 40.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 43.5'
Elevation / Depth of Top of Screen:		/ 44.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 46.0'
Elevation / Depth of Bottom of Filter Pack:		/ 47.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0107

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0107
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/07/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



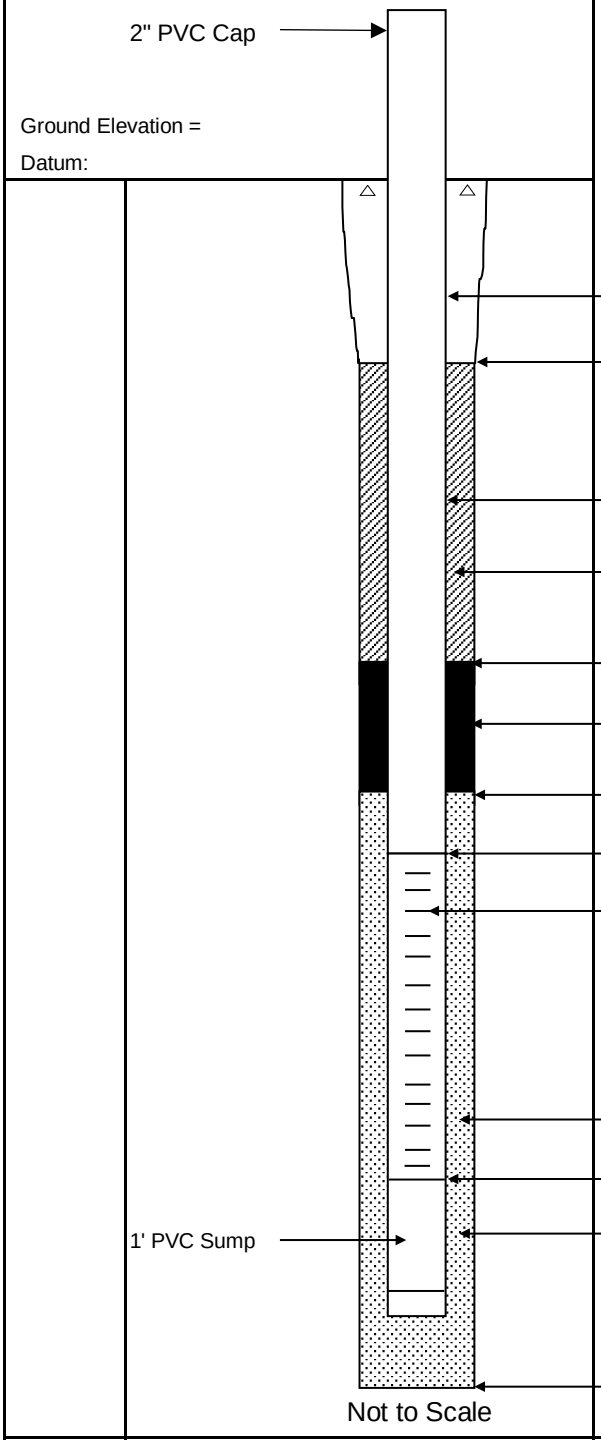
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0130

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0130
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



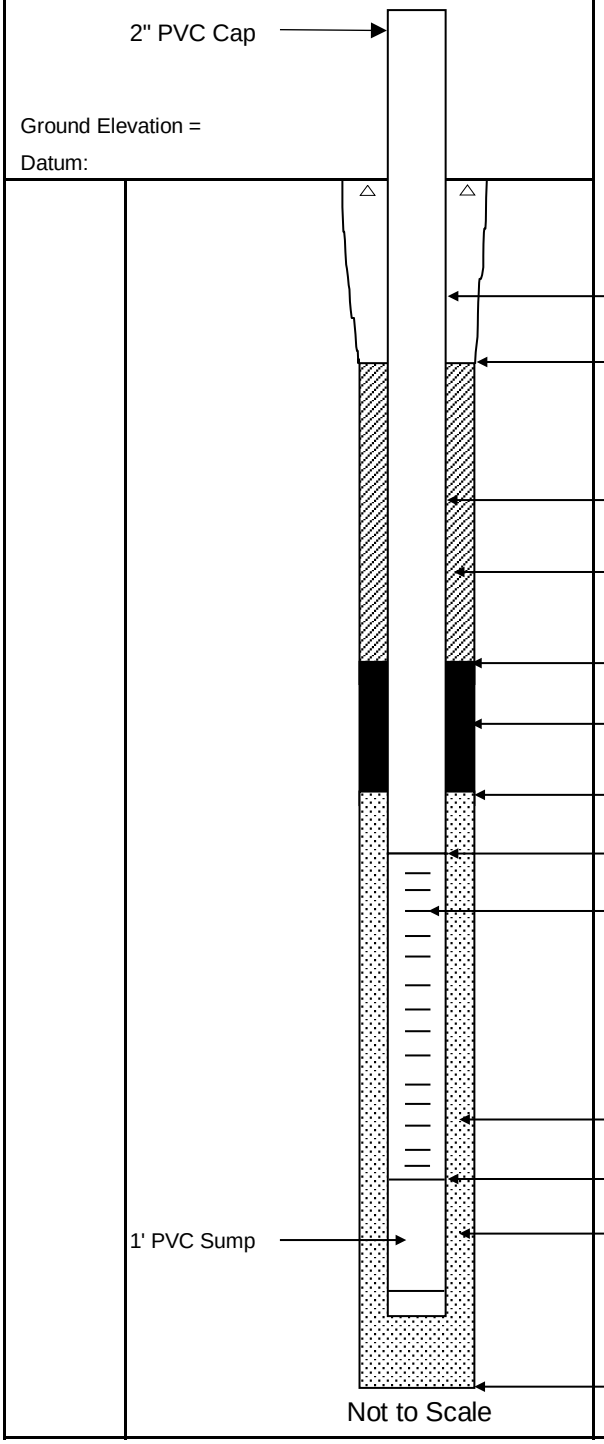
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0142

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0142
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



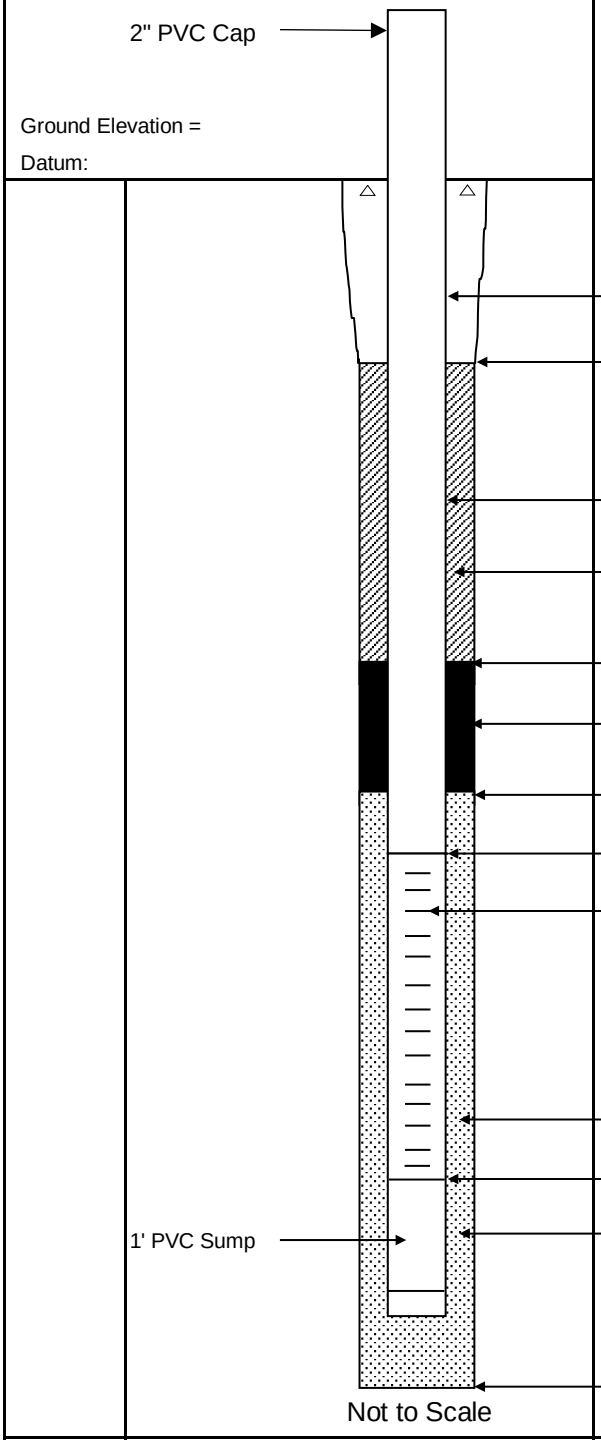
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 35.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 38.5'
Elevation / Depth of Top of Screen:		/ 39.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 41.0'
Elevation / Depth of Bottom of Filter Pack:		/ 42.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0154

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0154
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



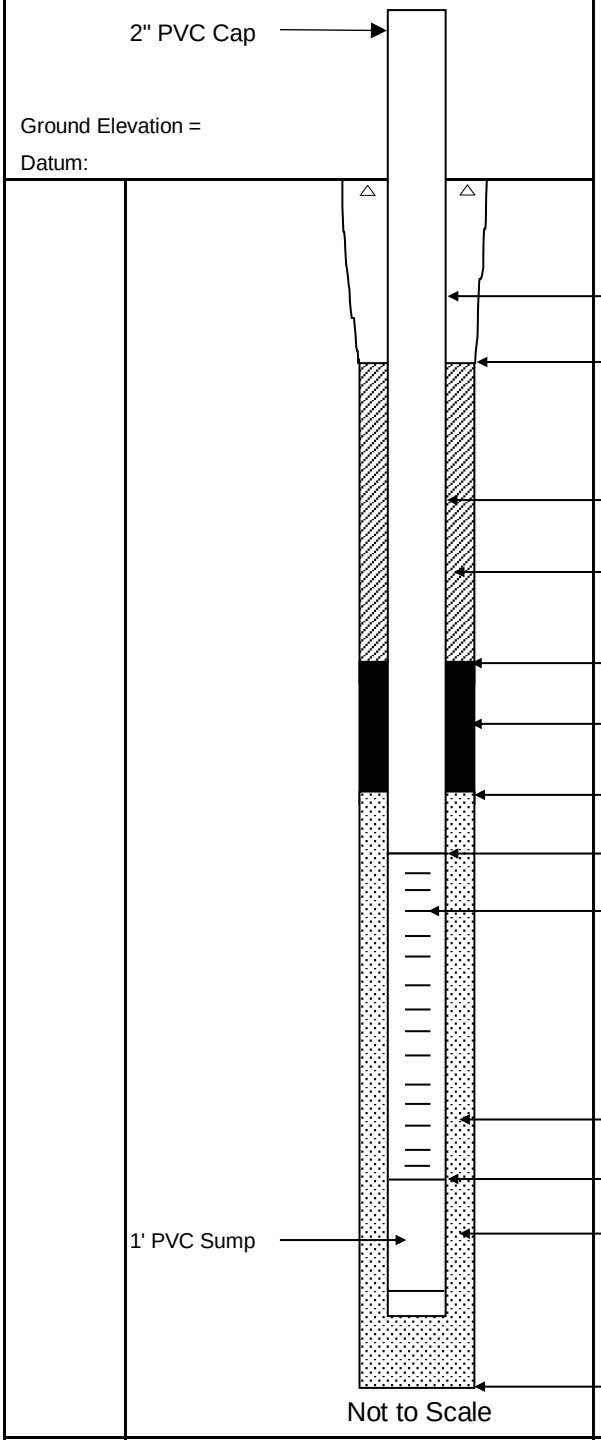
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.0'
Elevation / Depth of Top of Screen:		/ 42.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0159

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0159
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



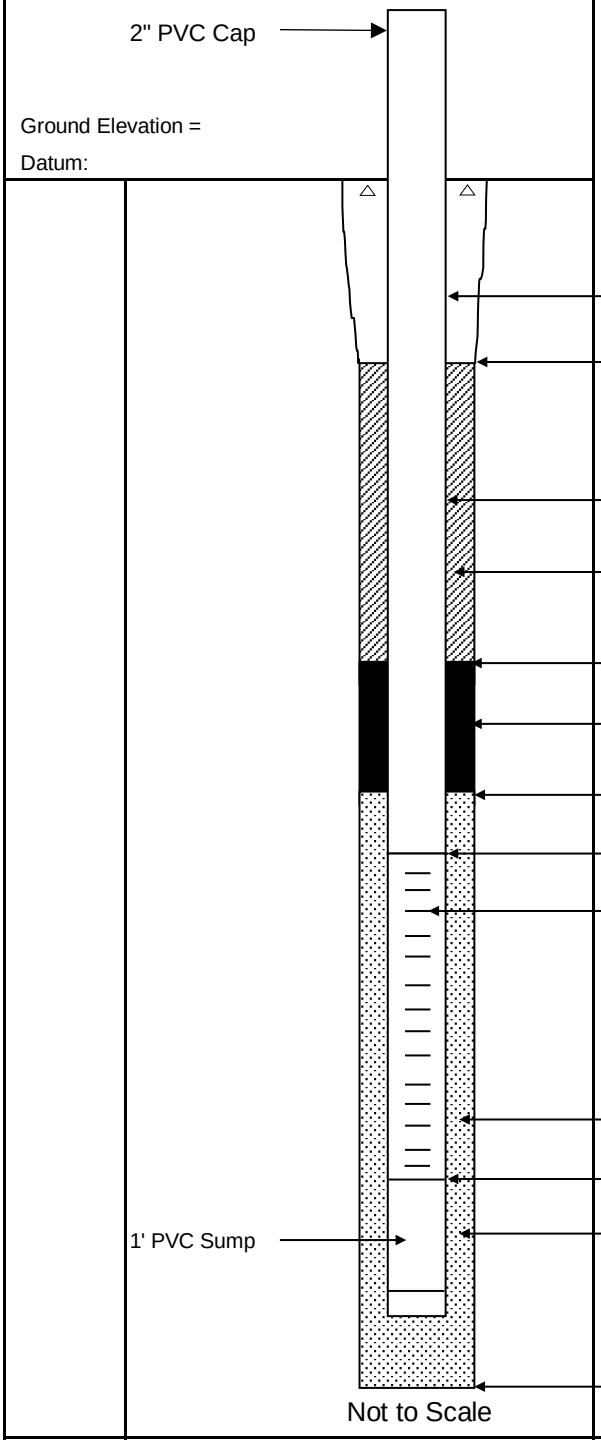
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0164

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0164
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/08/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



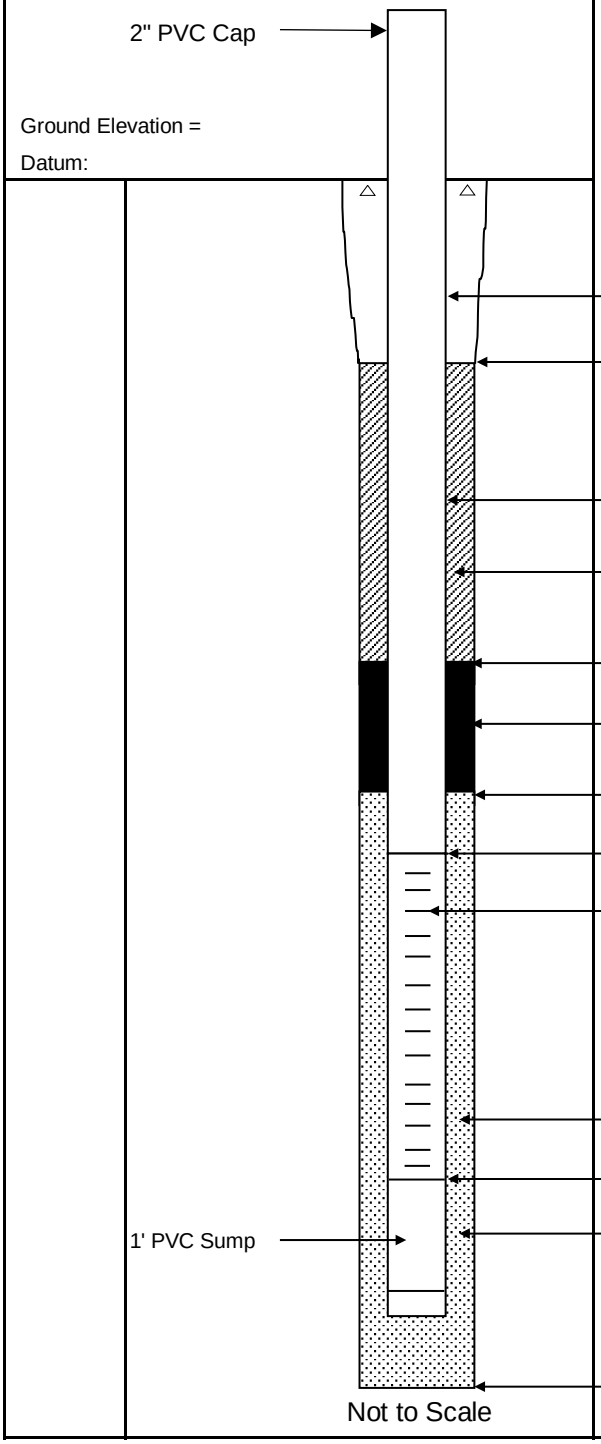
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0173

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0173
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



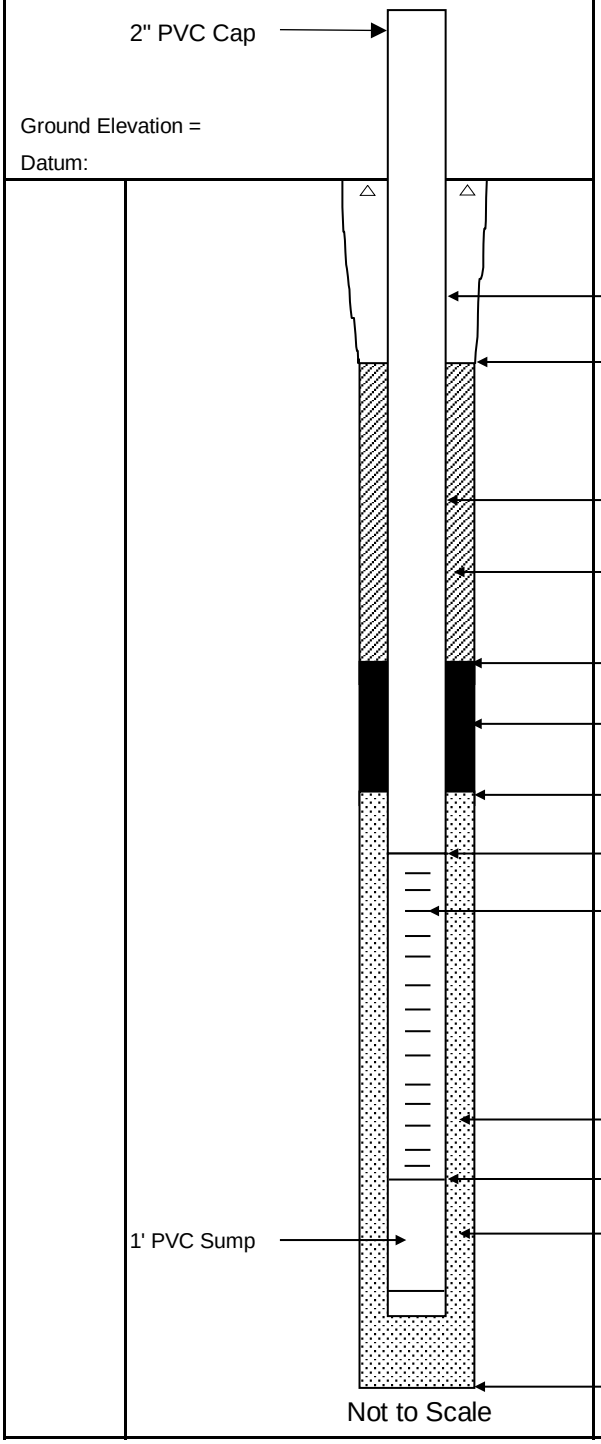
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 35.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 38.0'
Elevation / Depth of Top of Screen:		/ 38.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 40.5'
Elevation / Depth of Bottom of Filter Pack:		/ 41.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0169

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0169
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



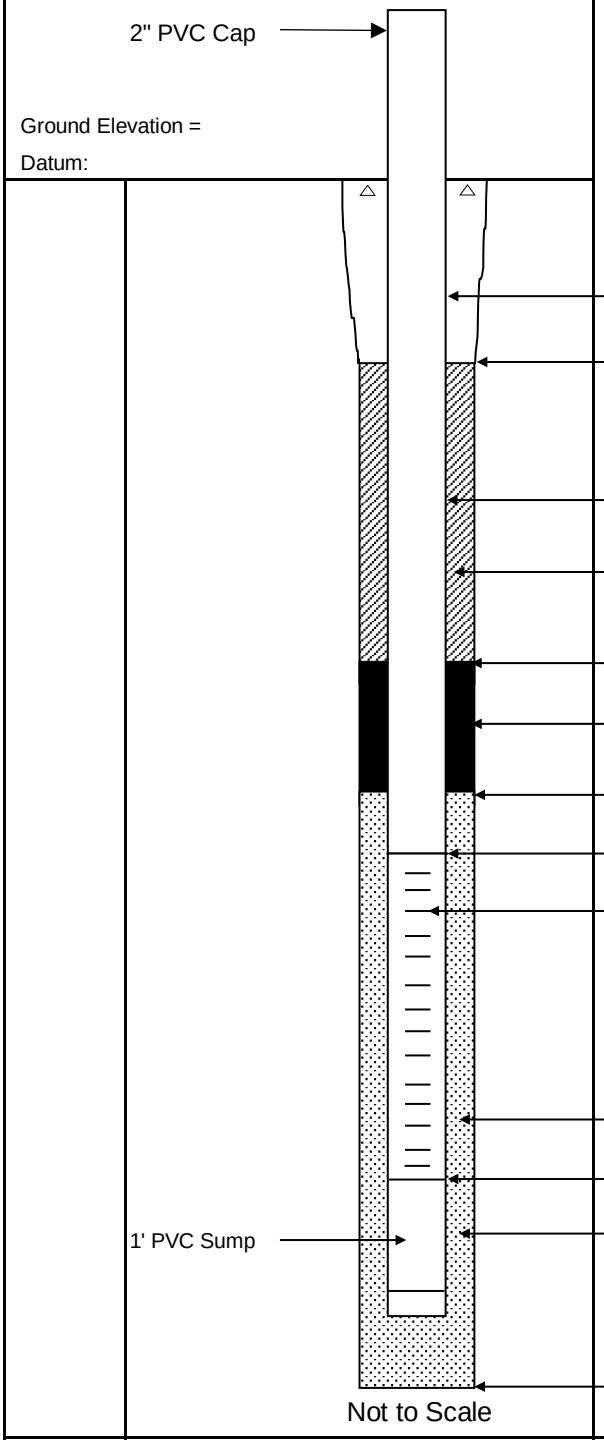
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 35.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 38.0'
Elevation / Depth of Top of Screen:		/ 38.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 40.5'
Elevation / Depth of Bottom of Filter Pack:		/ 41.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0168

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0168
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



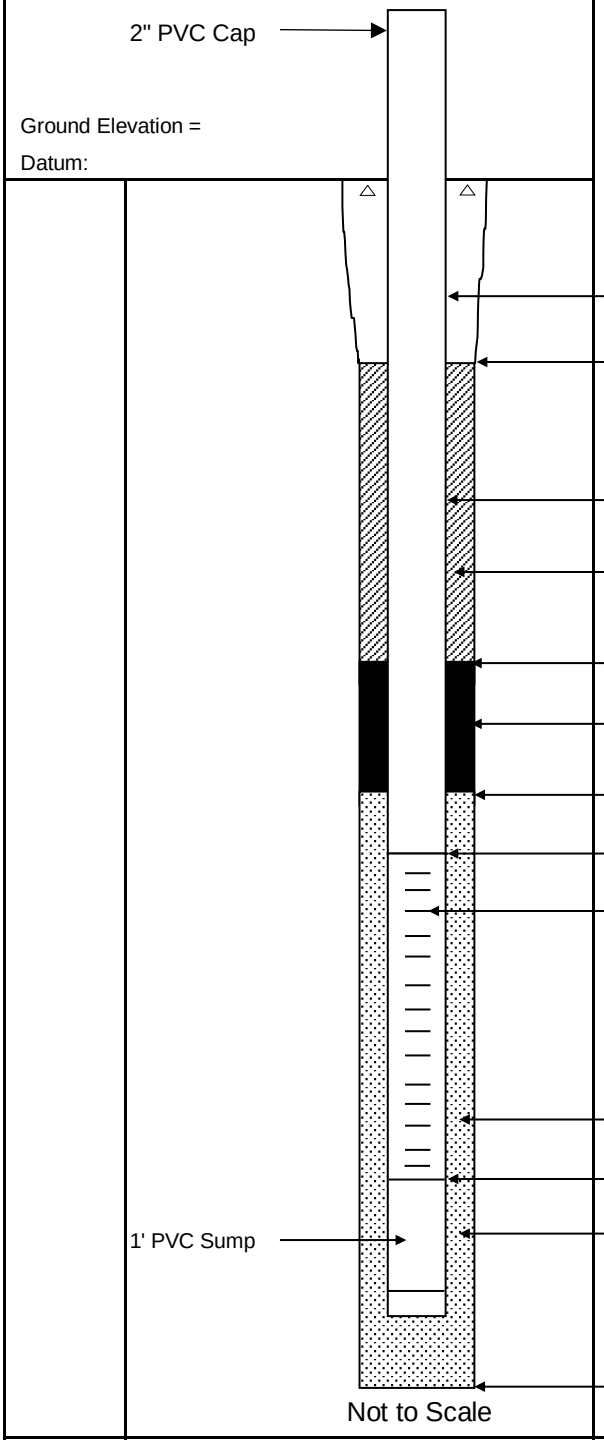
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.0'
Elevation / Depth of Top of Screen:		/ 39.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 41.5'
Elevation / Depth of Bottom of Filter Pack:		/ 42.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0201

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0201
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/09/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



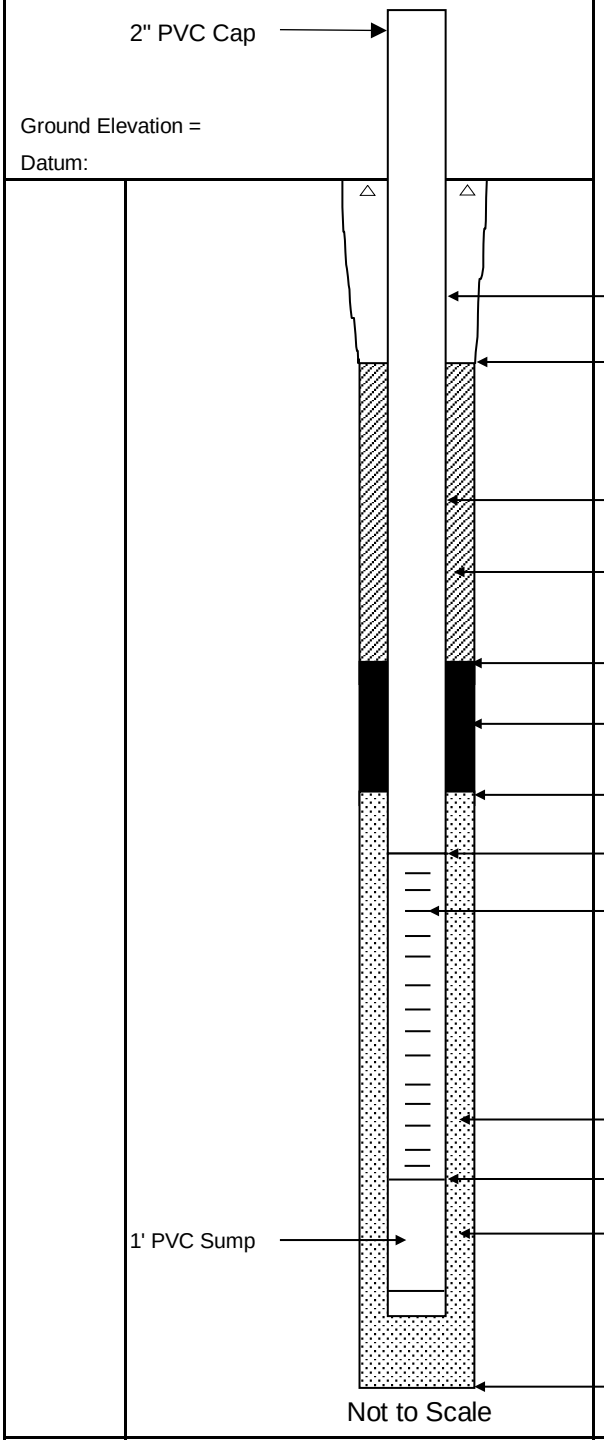
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0200

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0200
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/10/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



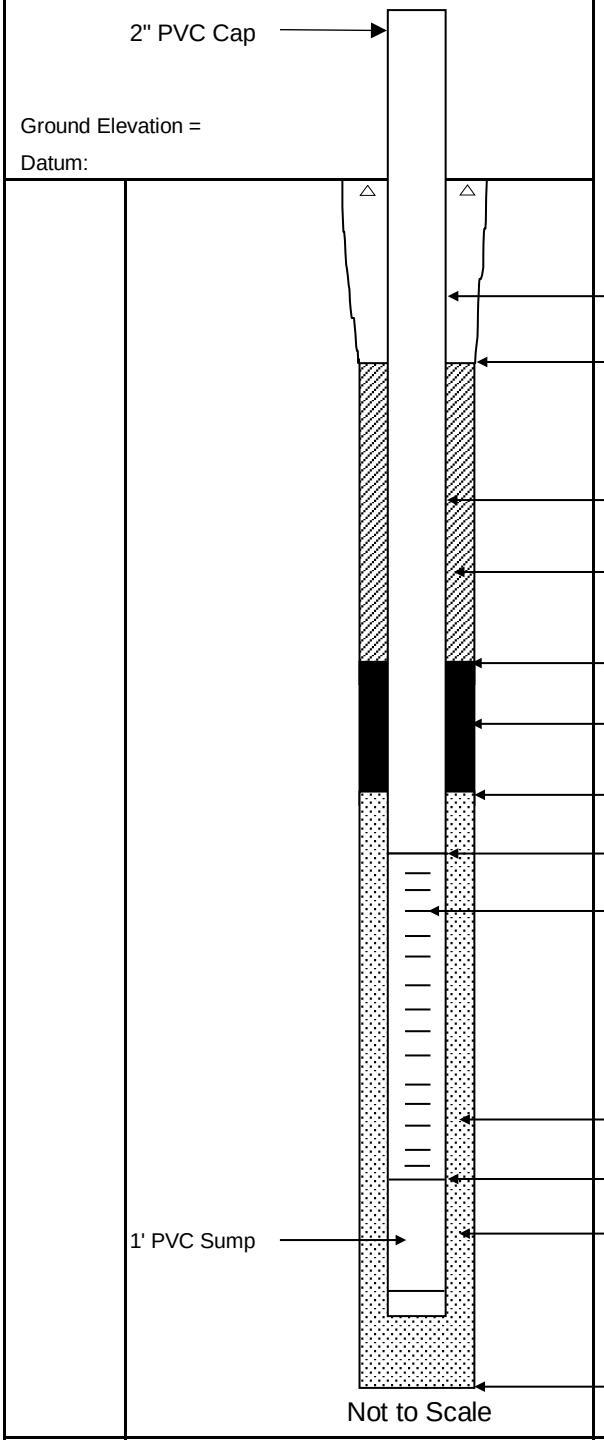
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0''
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0197

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0197
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/10/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



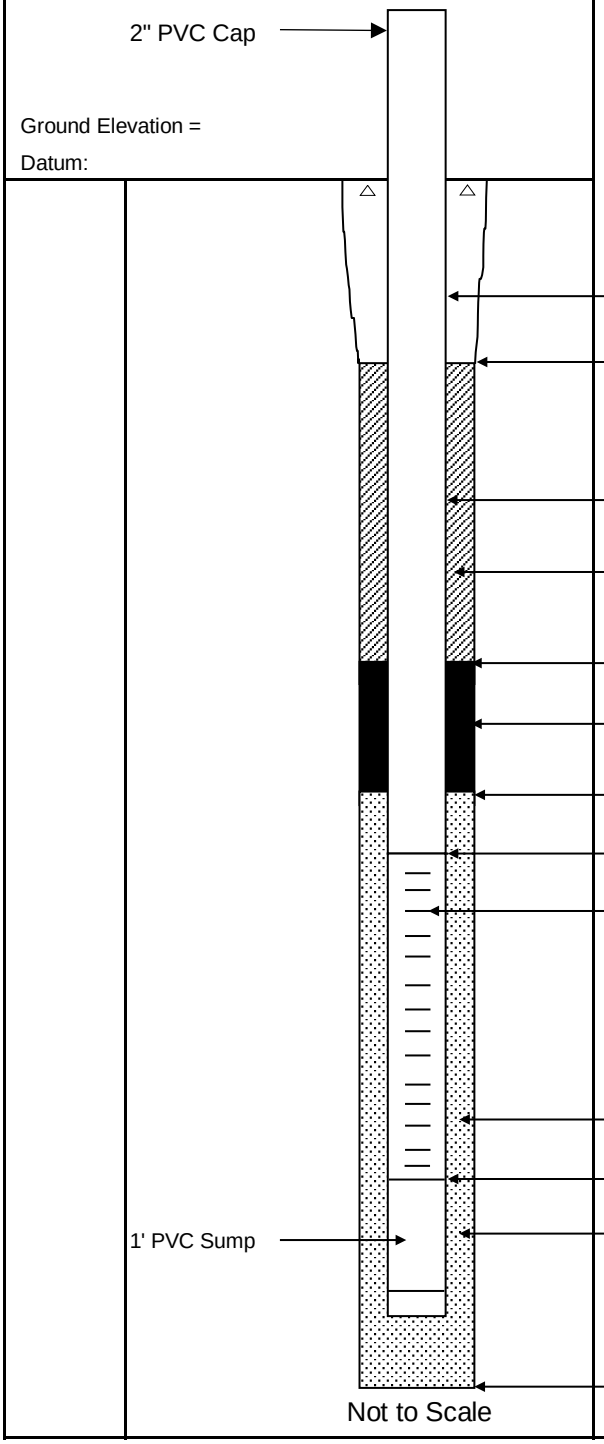
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0153

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0153
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/10/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



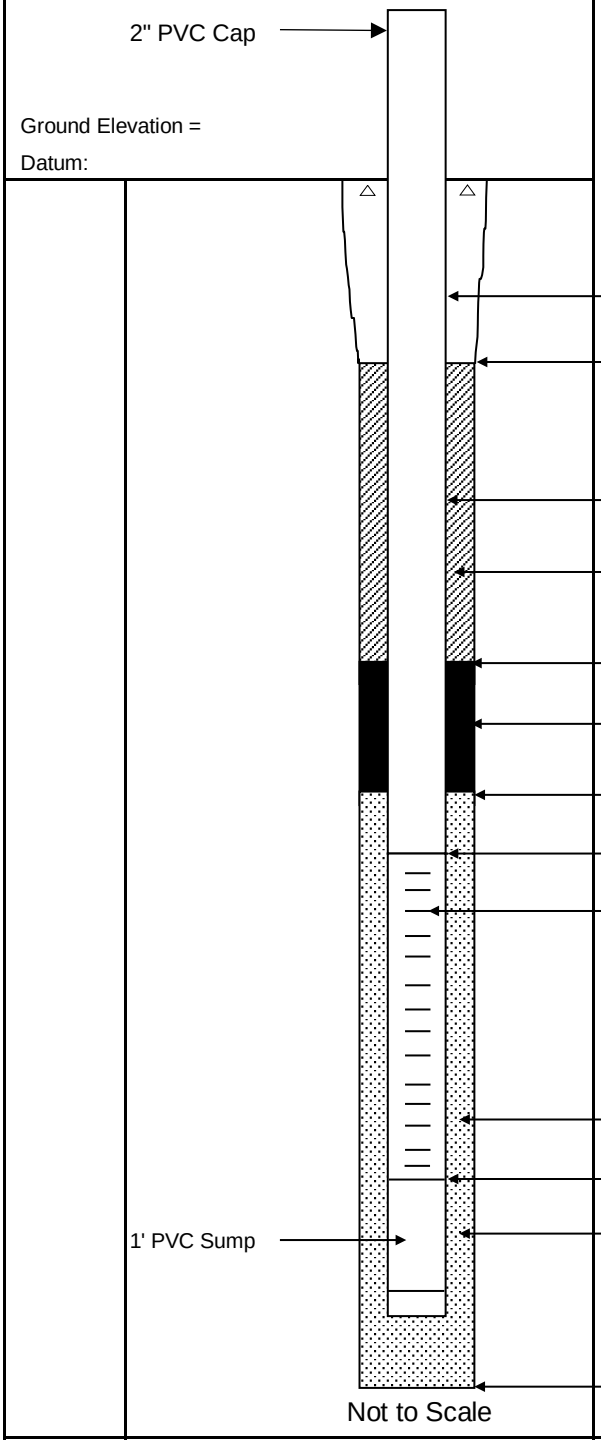
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0141

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0141
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/13/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



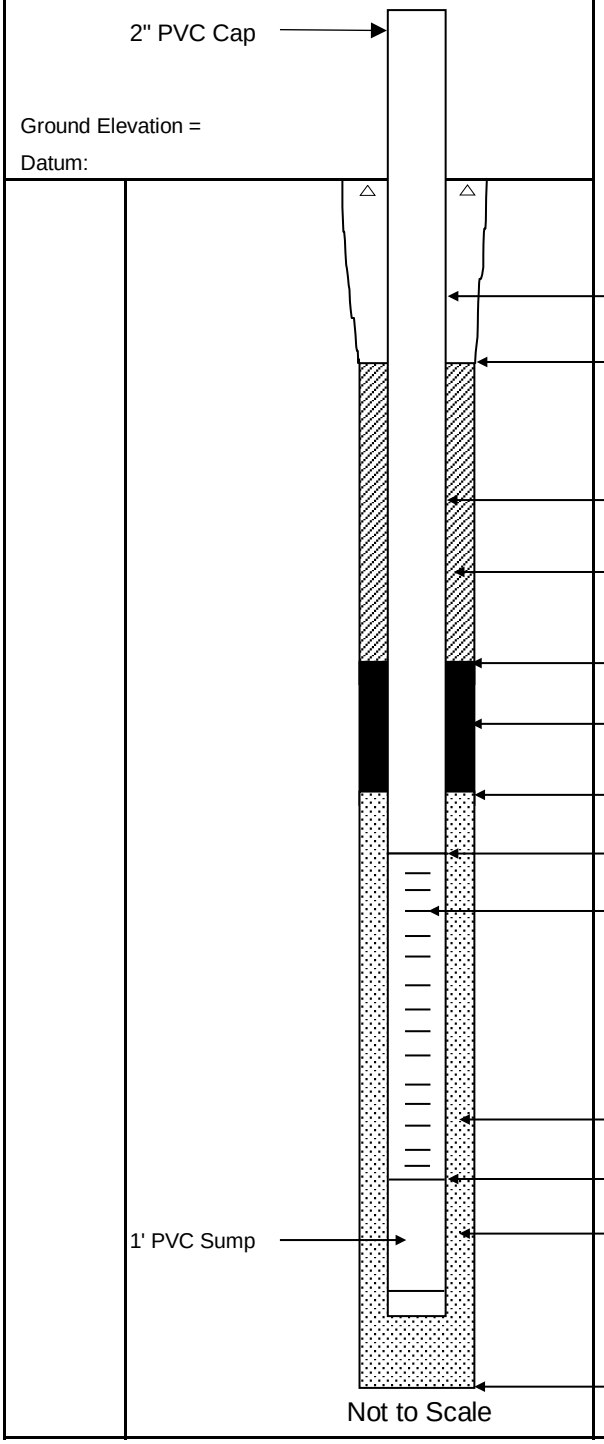
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0114

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0114
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/13/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



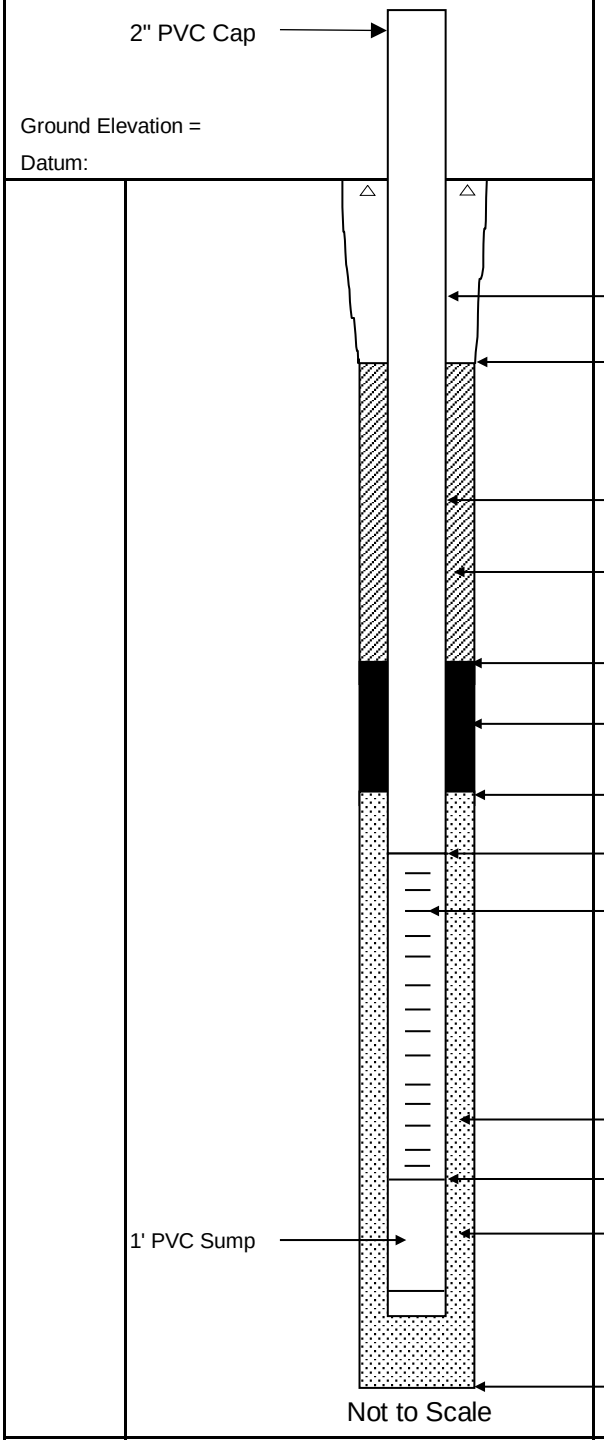
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0125

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0125
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



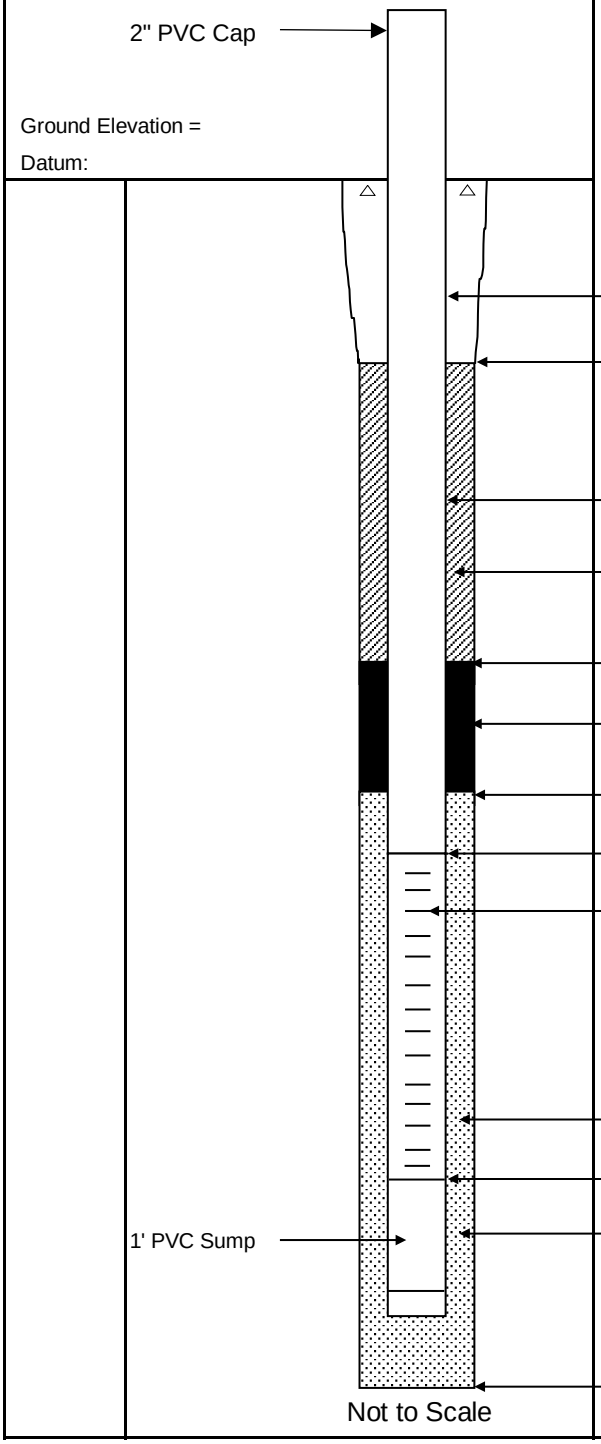
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0137

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0137
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



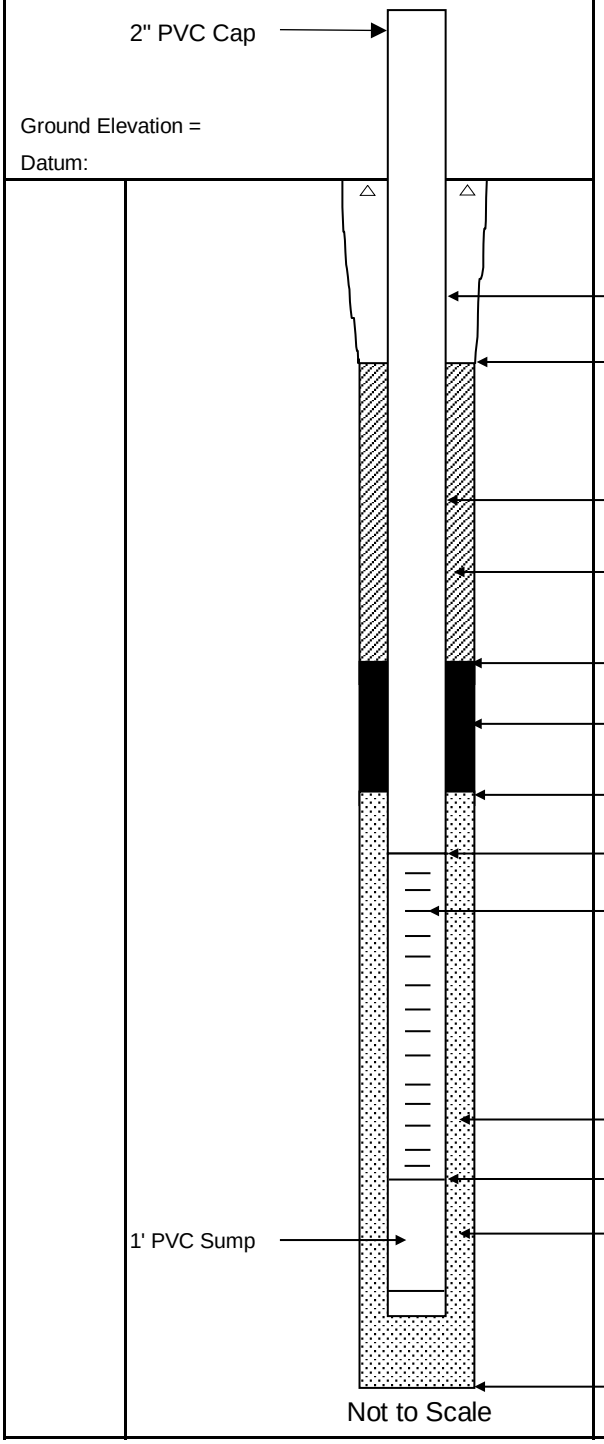
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0149

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0149
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



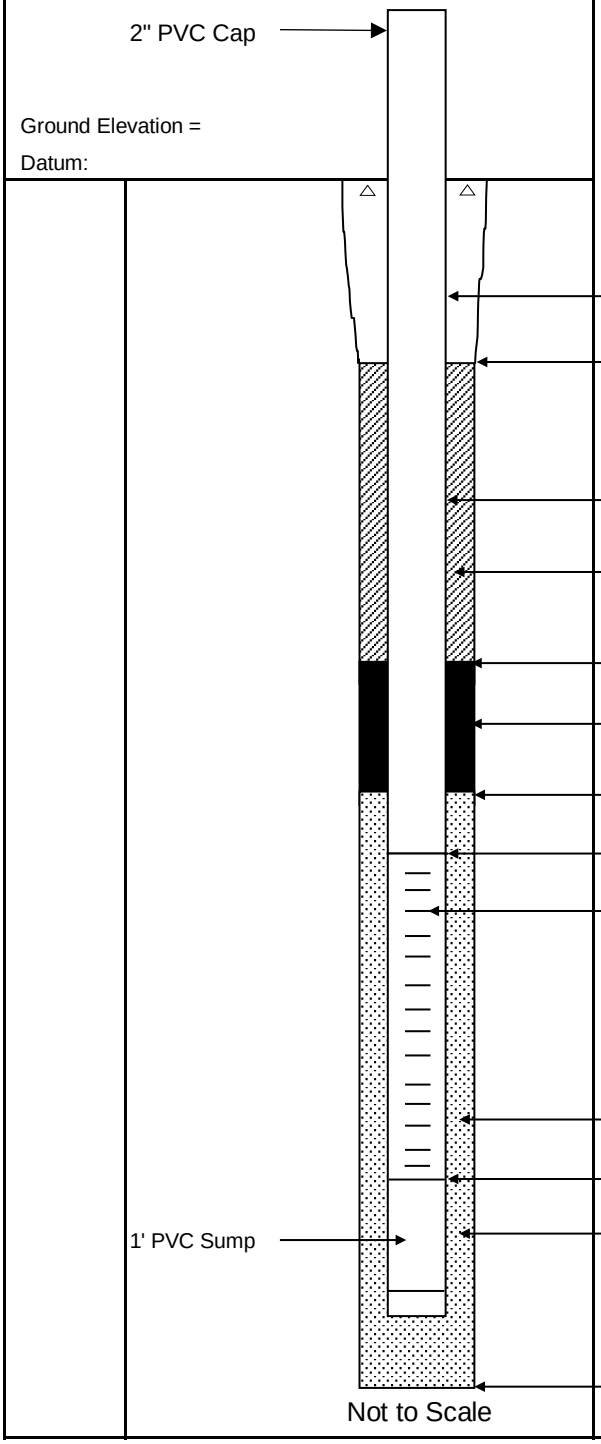
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0195

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0195
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



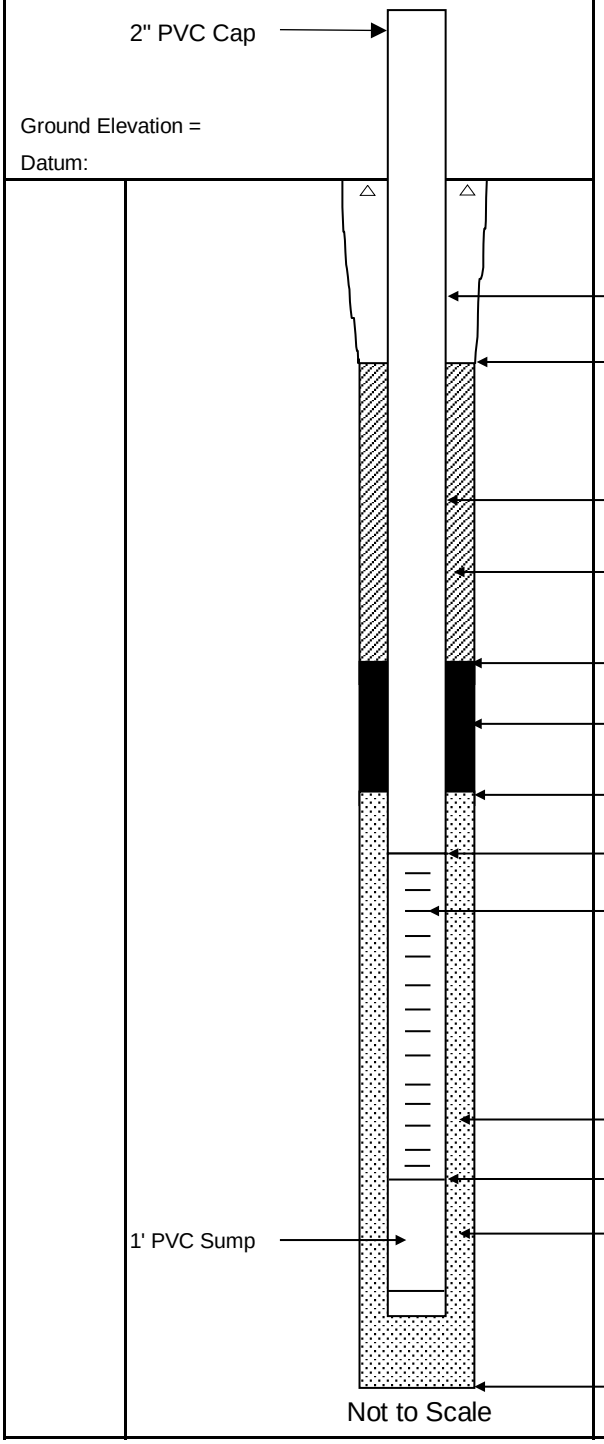
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0150

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0150
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/14/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



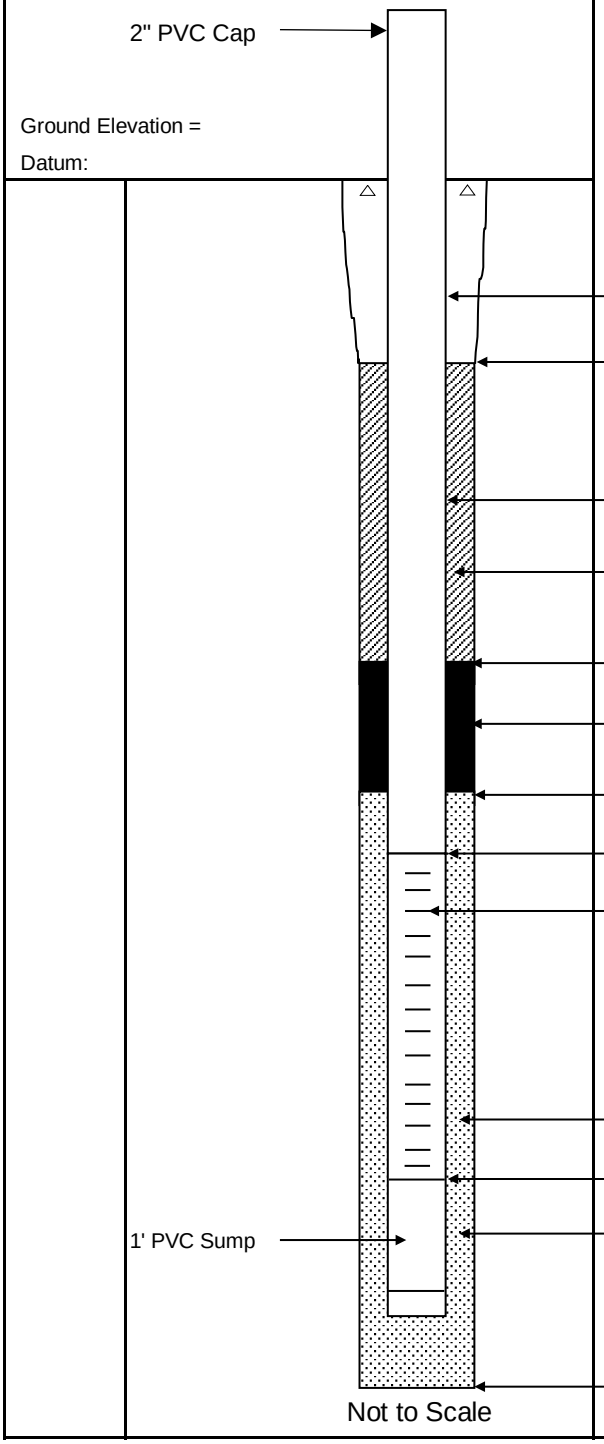
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0148

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0148
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/15/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



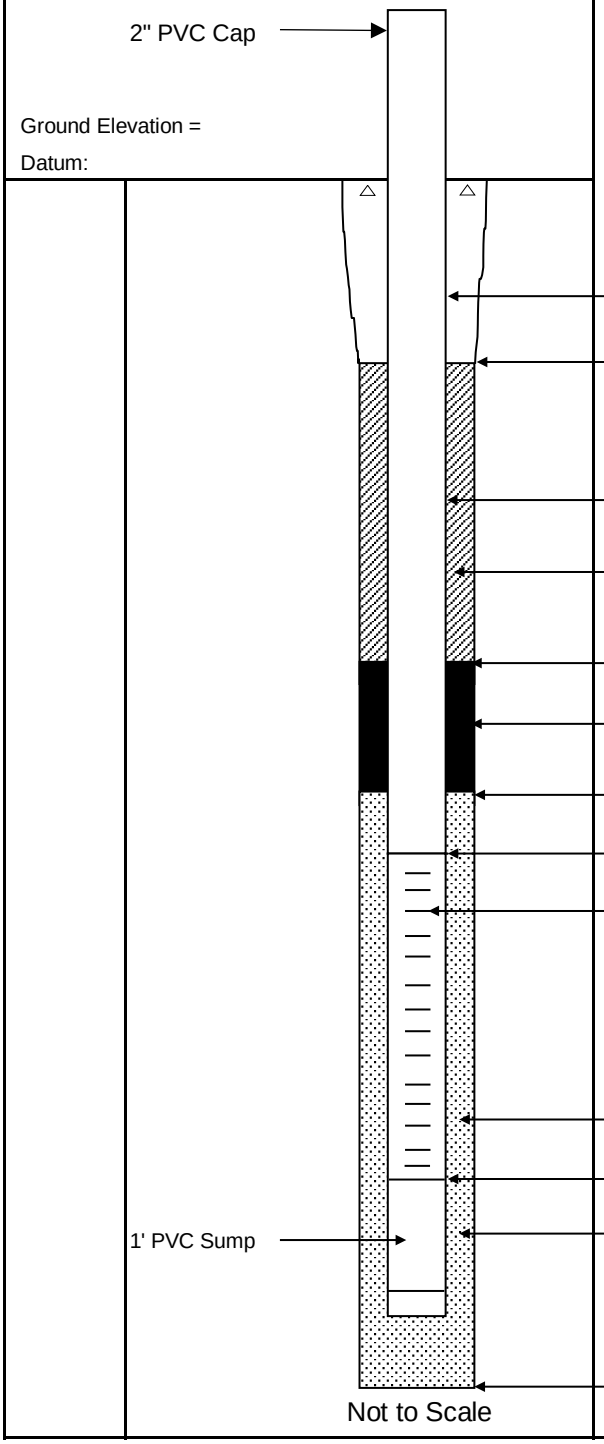
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0136

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0136
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/15/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



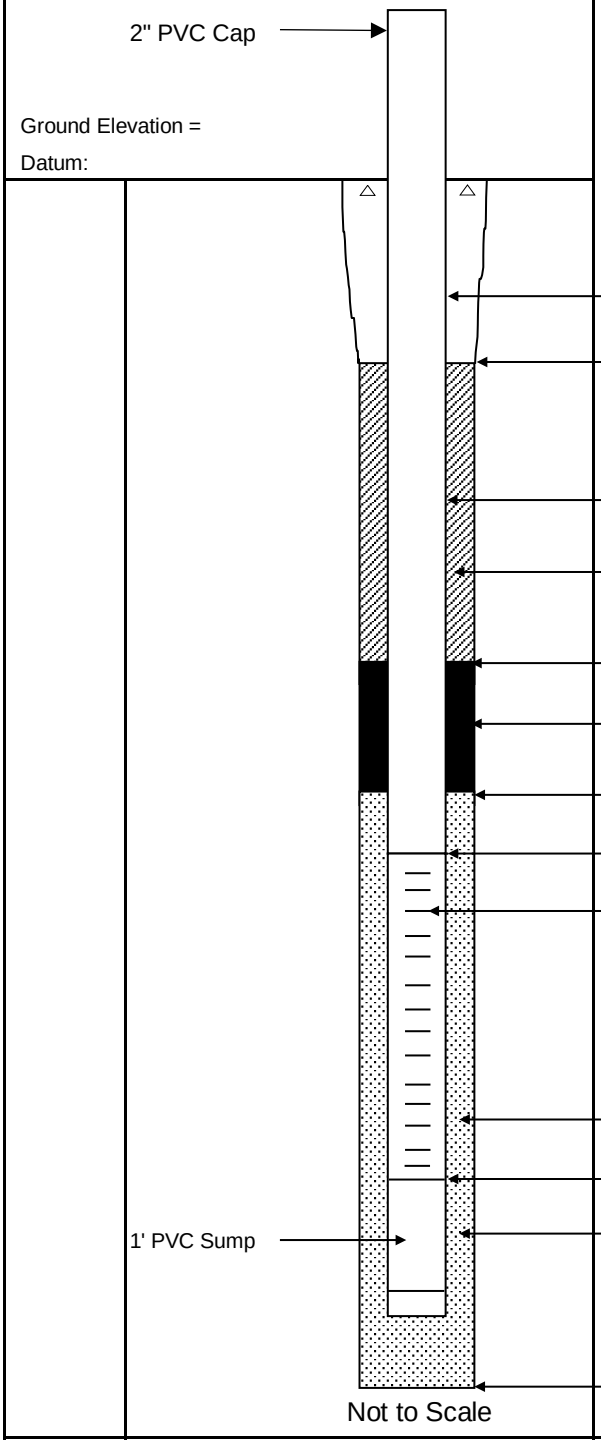
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0115

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0115
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/15/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



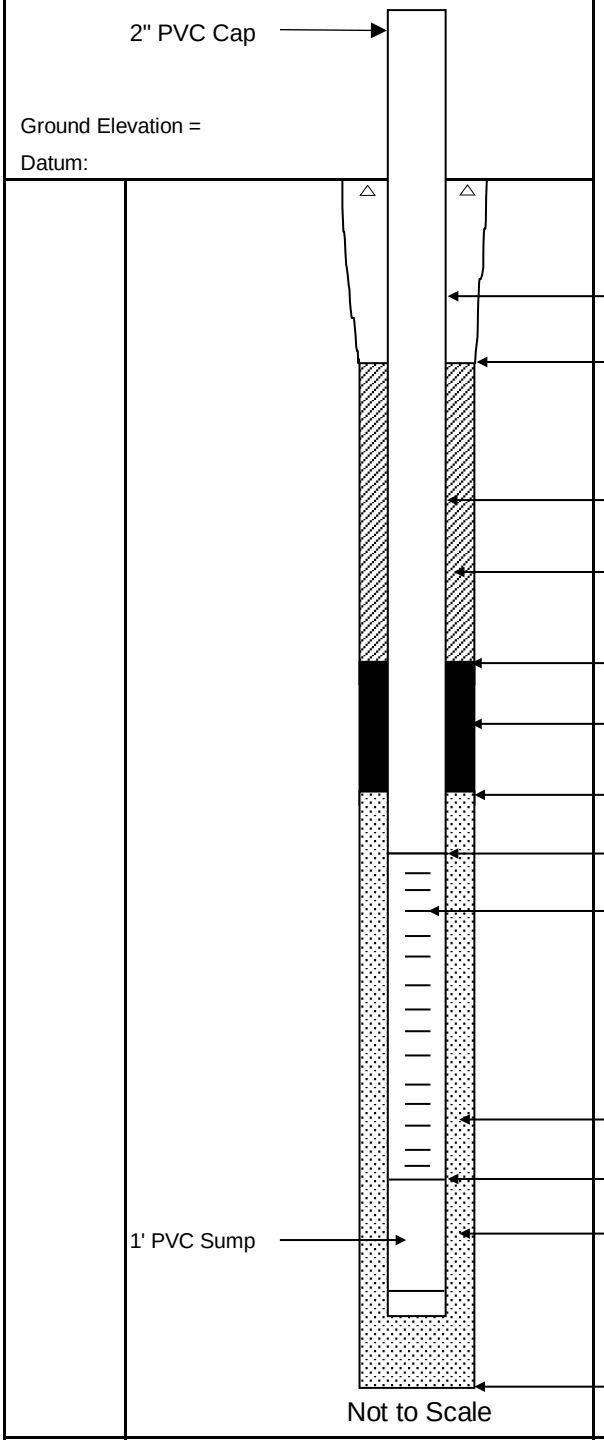
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.0'
Elevation / Depth of Top of Screen:		/ 42.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.5'
Elevation / Depth of Bottom of Filter Pack:		/ 45.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0212

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0212
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/16/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



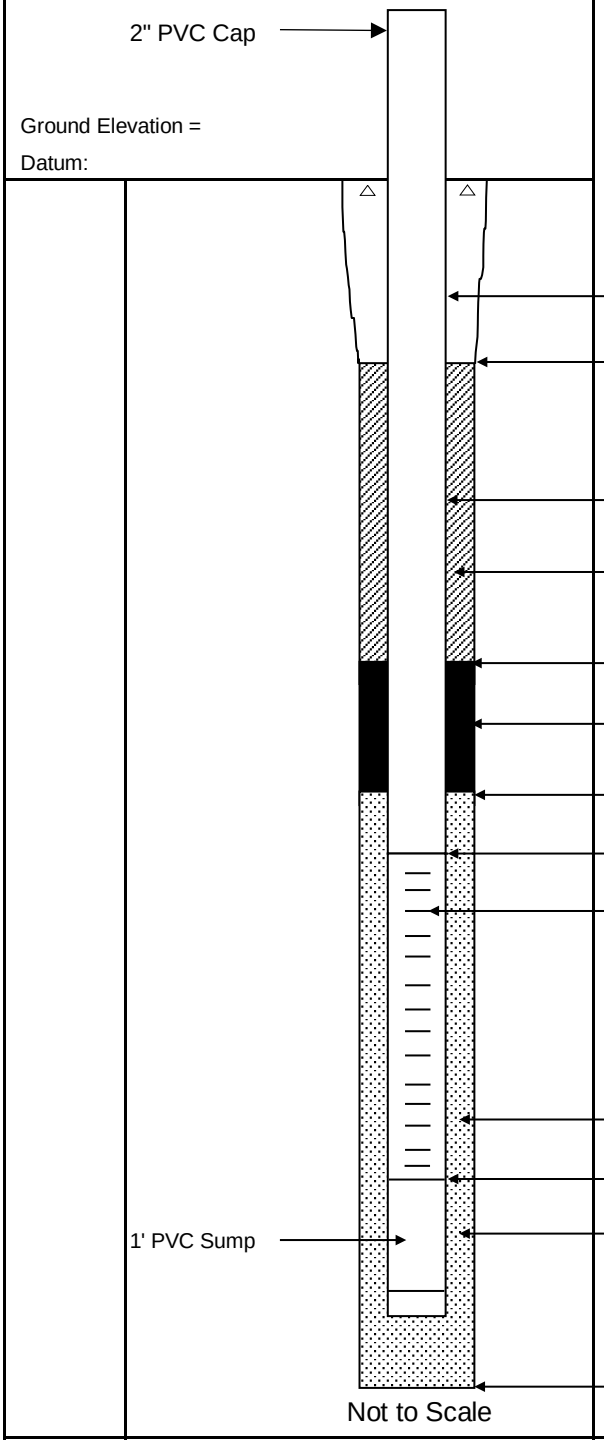
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0211

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0211
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/16/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



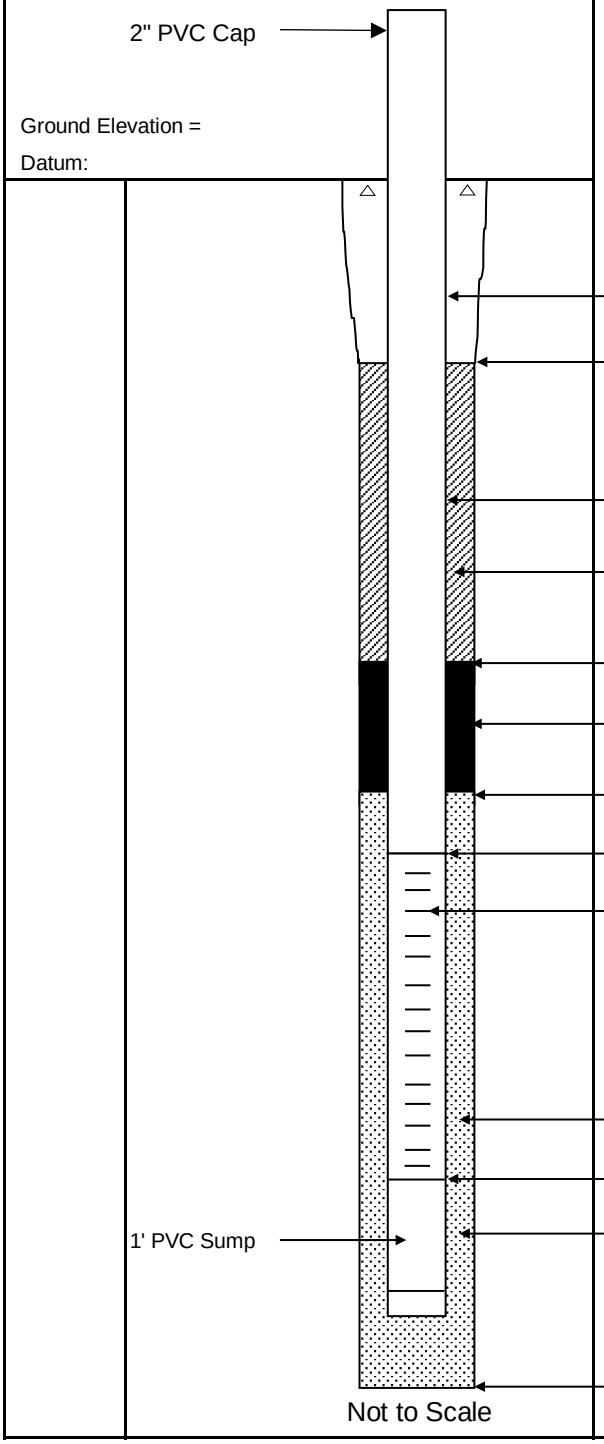
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.5'
Elevation / Depth of Top of Screen:		/ 41.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.0'
Elevation / Depth of Bottom of Filter Pack:		/ 44.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0191

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0191
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/16/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



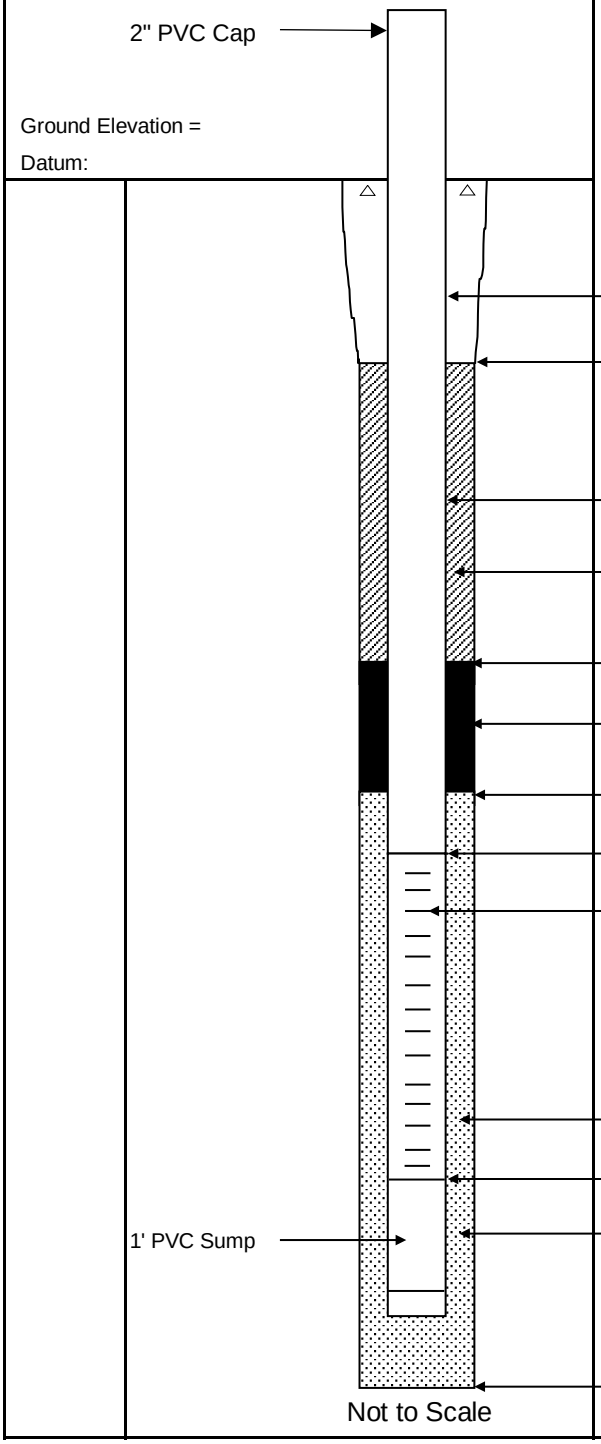
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0189

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0189
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/16/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



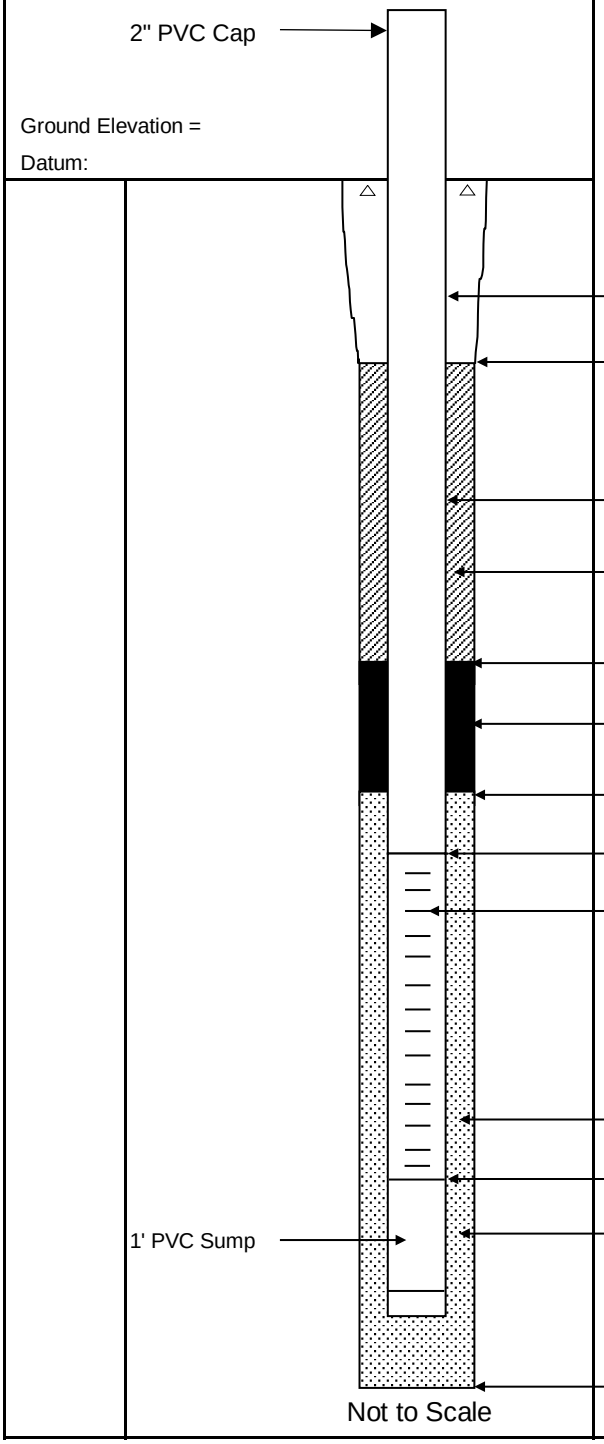
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 40.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 43.5'
Elevation / Depth of Top of Screen:		/ 44.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 46.0'
Elevation / Depth of Bottom of Filter Pack:		/ 47.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0186

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0186
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/16/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



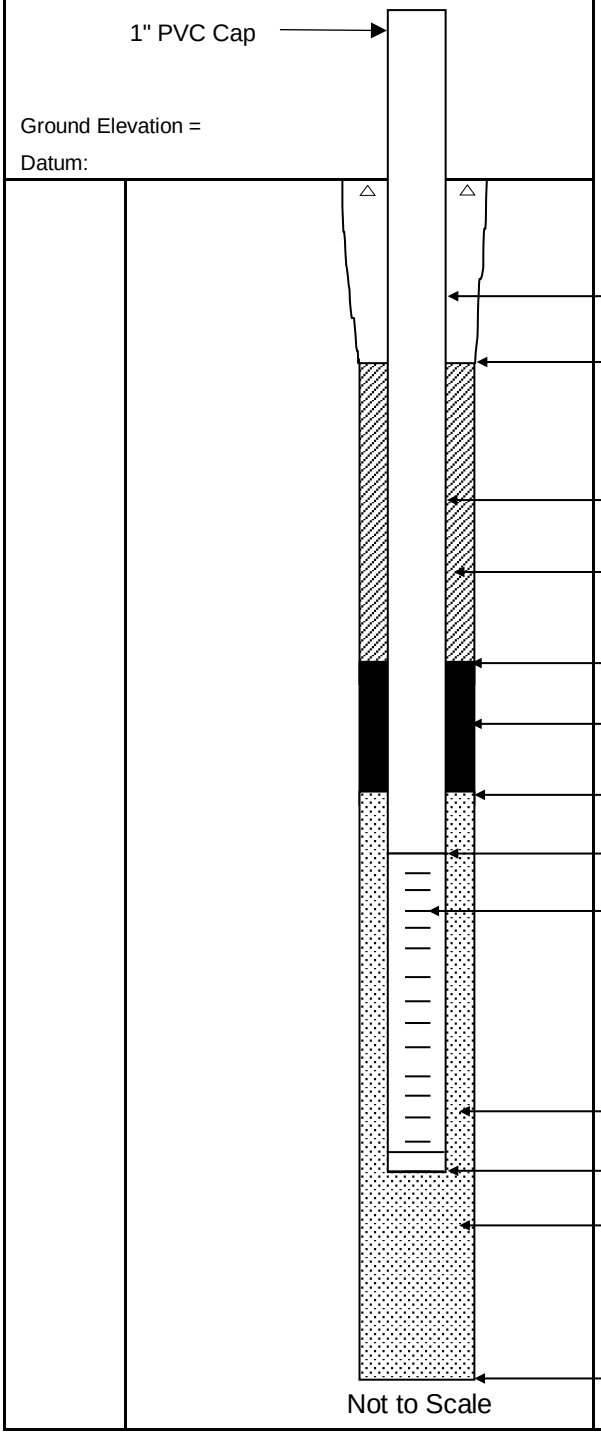
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 39.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 42.5'
Elevation / Depth of Top of Screen:		/ 43.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 45.0'
Elevation / Depth of Bottom of Filter Pack:		/ 46.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0039

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0039
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/17/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



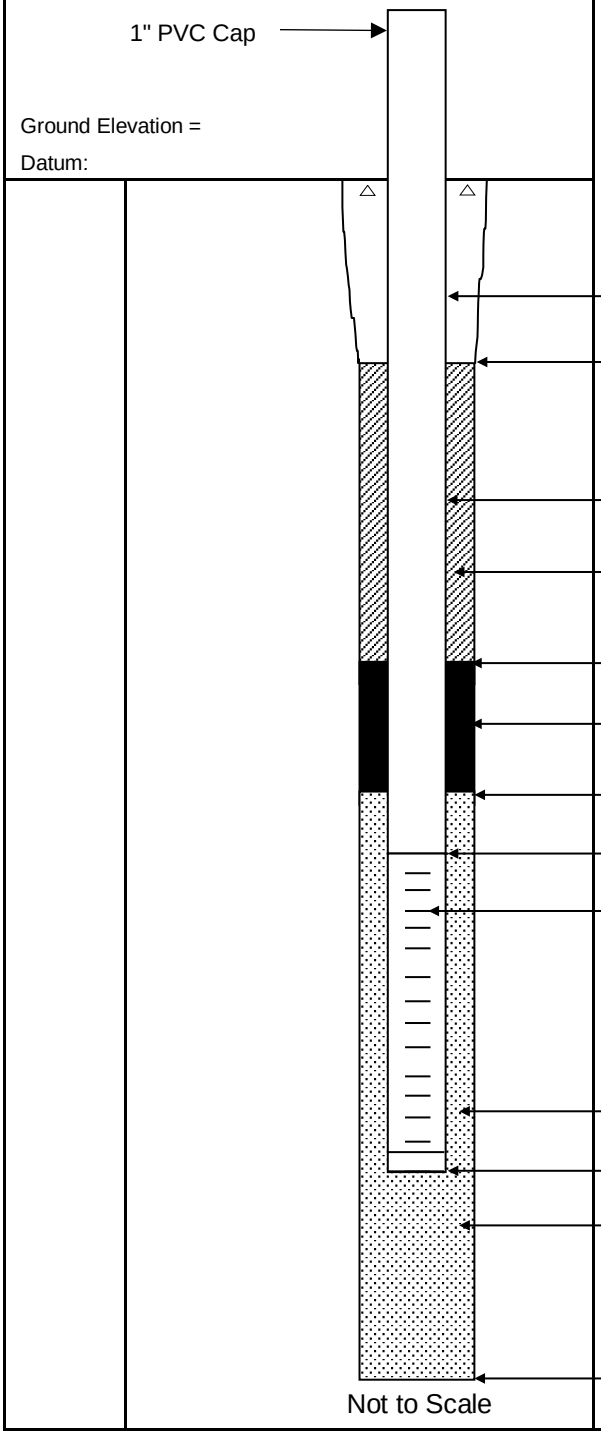
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0038

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0038
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/17/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



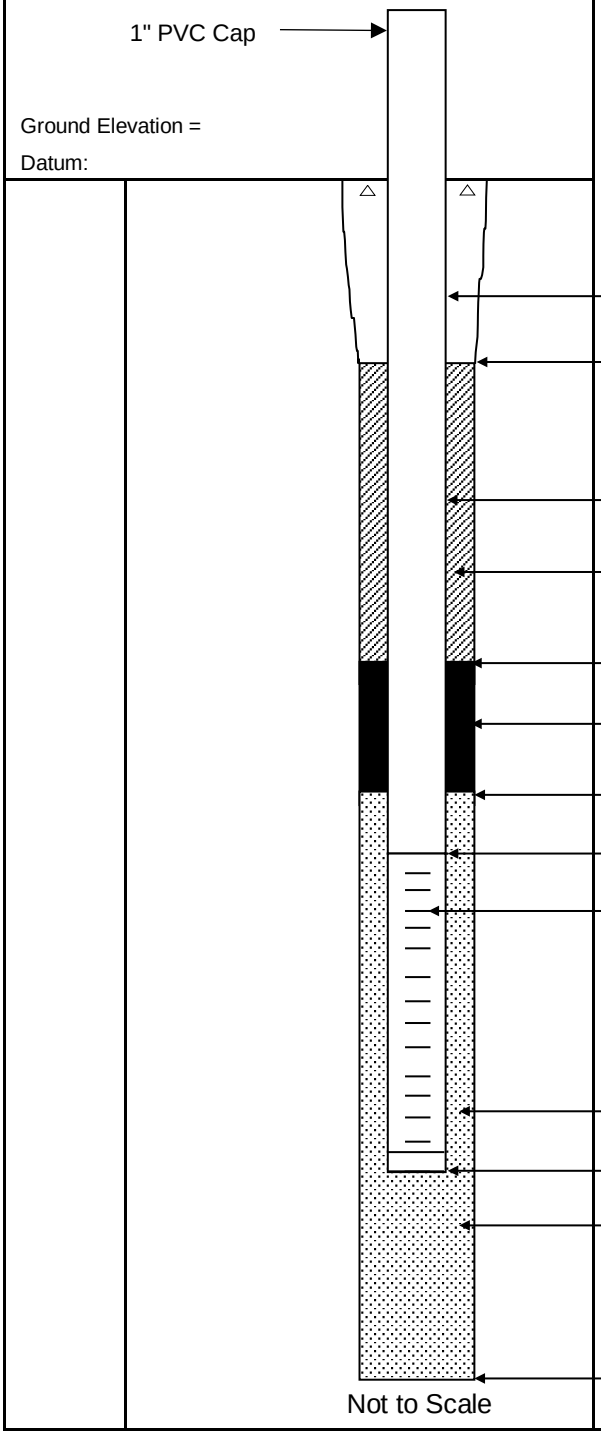
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0036

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0036
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



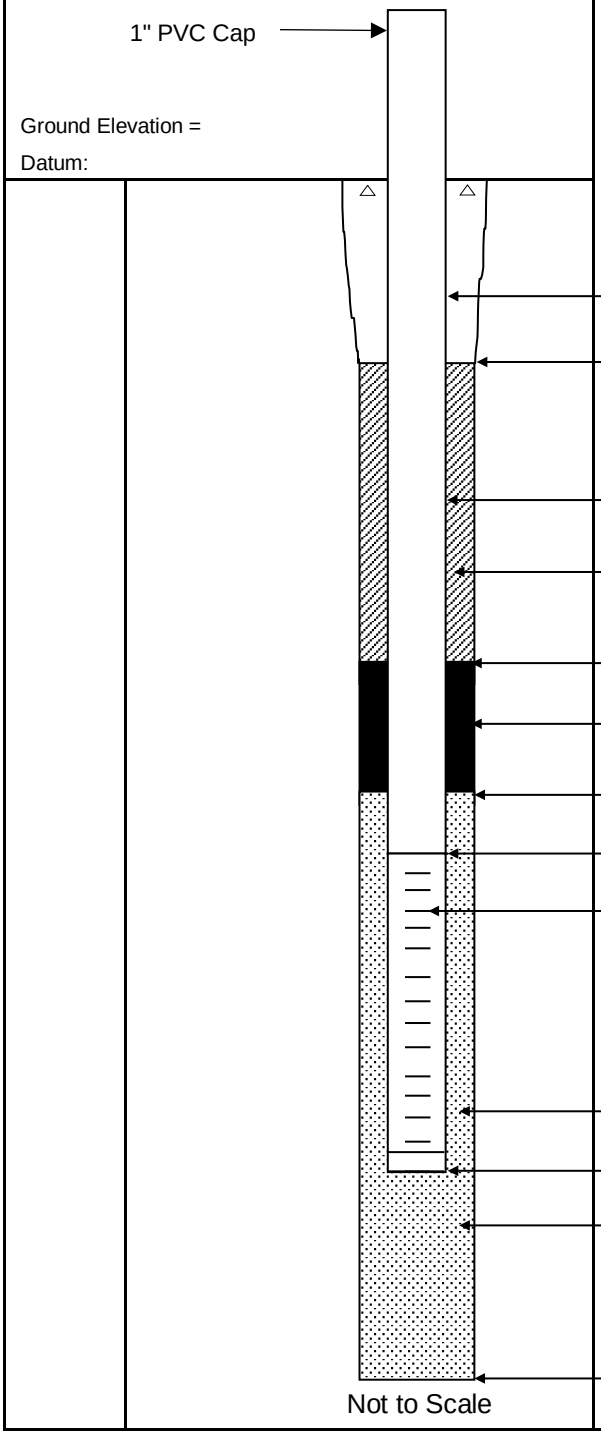
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 26.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 29.5'
Elevation / Depth of Top of Screen:		/ 30.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 32.0'
Elevation / Depth of Bottom of Filter Pack:		/ 32.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0033

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0033
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



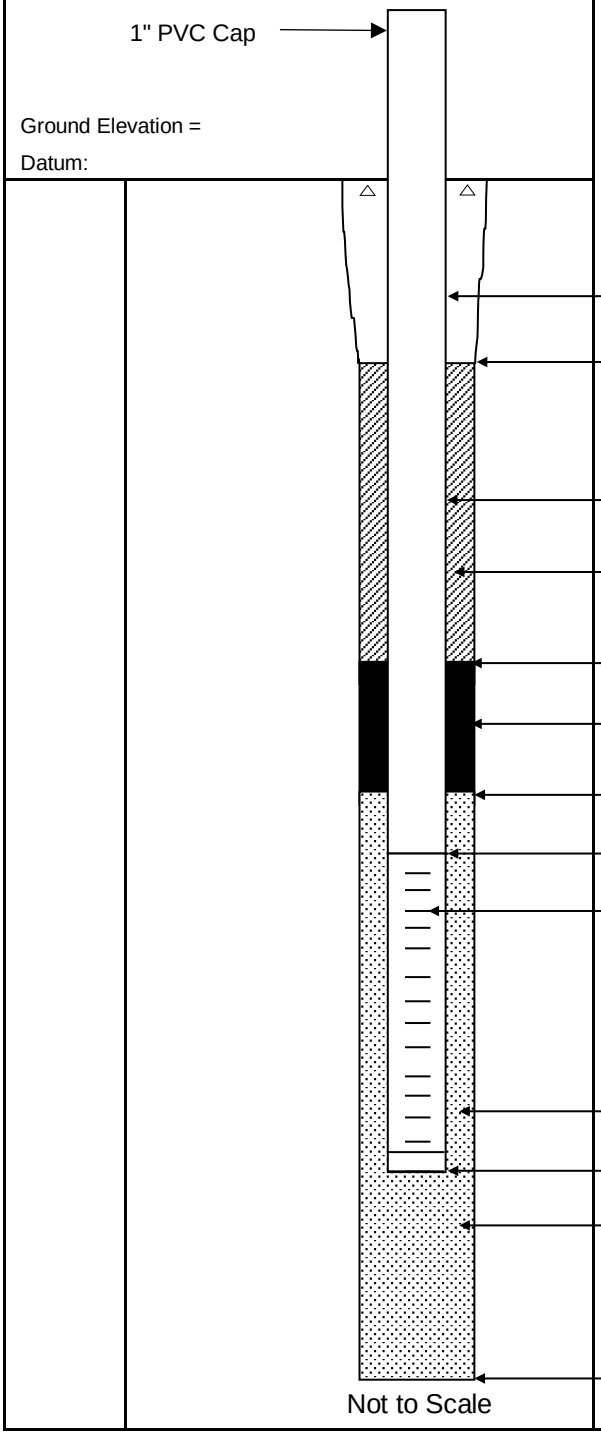
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 25.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 28.5'
Elevation / Depth of Top of Screen:		/ 29.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 31.0'
Elevation / Depth of Bottom of Filter Pack:		/ 31.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0035

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0035
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



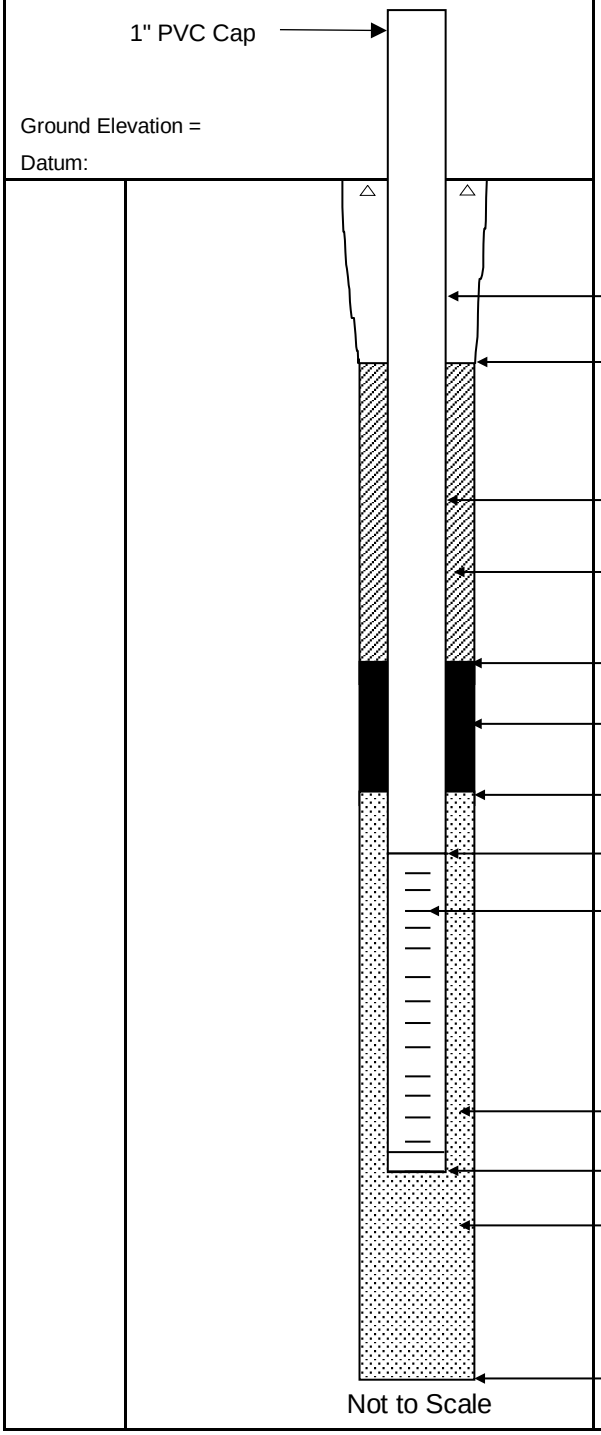
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 24.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 27.0'
Elevation / Depth of Top of Screen:		/ 27.5'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 29.5'
Elevation / Depth of Bottom of Filter Pack:		/ 29.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0037

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0037
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/20/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



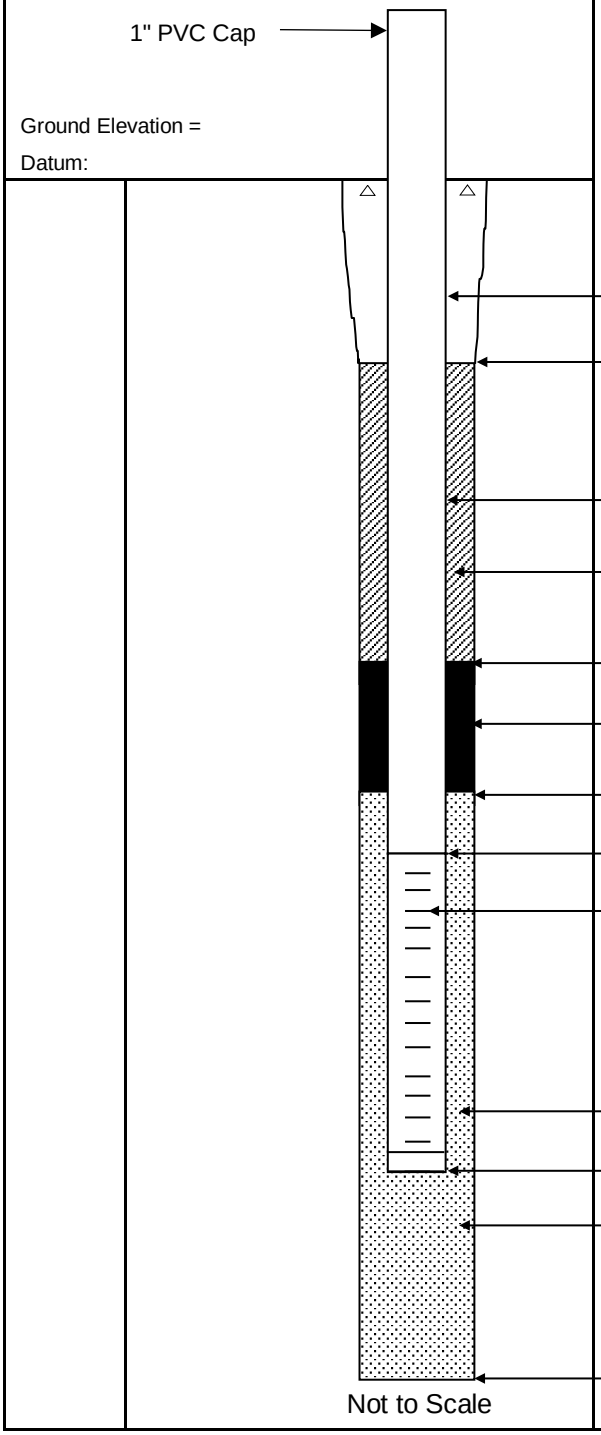
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 24.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 27.5'
Elevation / Depth of Top of Screen:		/ 28.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 30.0'
Elevation / Depth of Bottom of Filter Pack:		/ 30.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0041

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0041
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



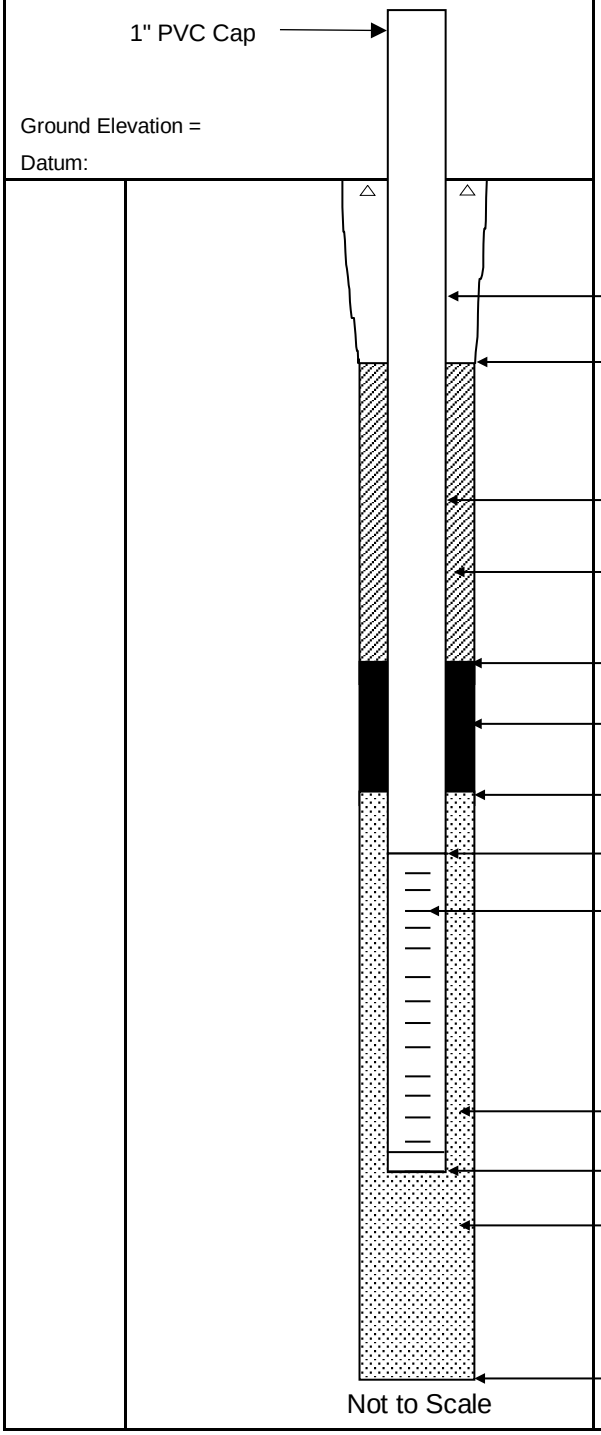
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 24.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 27.0'
Elevation / Depth of Top of Screen:		/ 27.5''
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 29.5'
Elevation / Depth of Bottom of Filter Pack:		/ 29.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0040

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0040
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



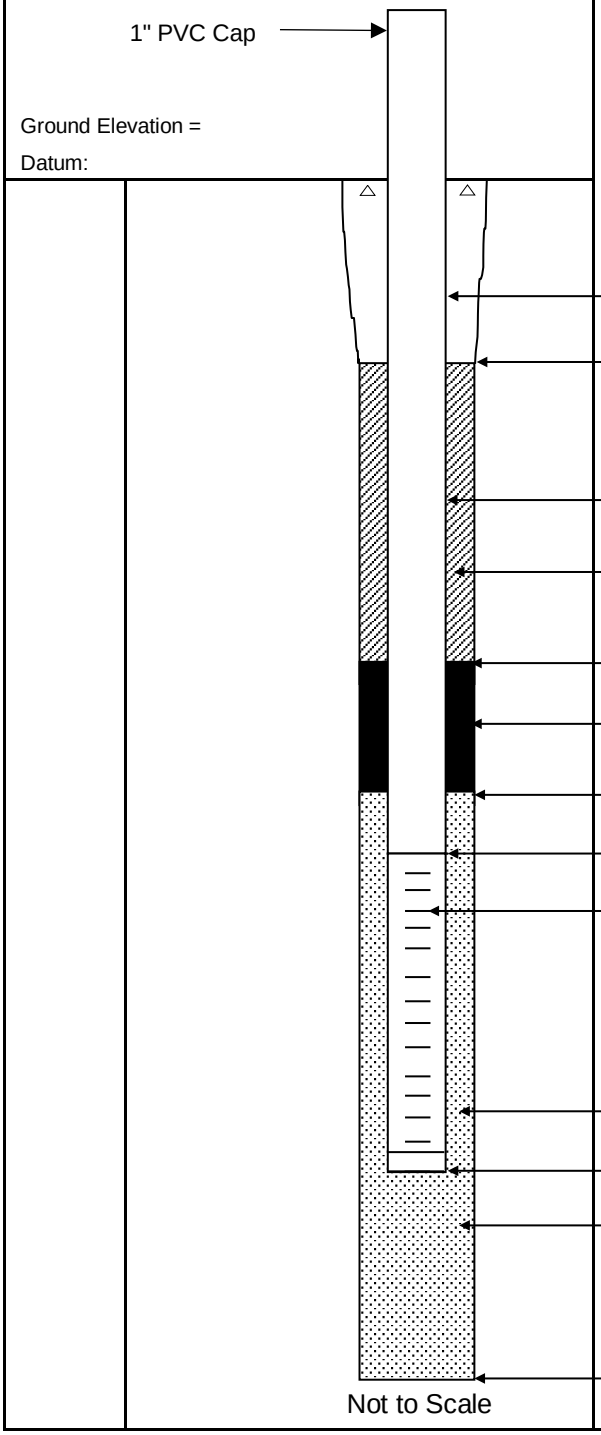
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 24.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 27.0'
Elevation / Depth of Top of Screen:		/ 27.5'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 29.5'
Elevation / Depth of Bottom of Filter Pack:		/ 29.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0042

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0042
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



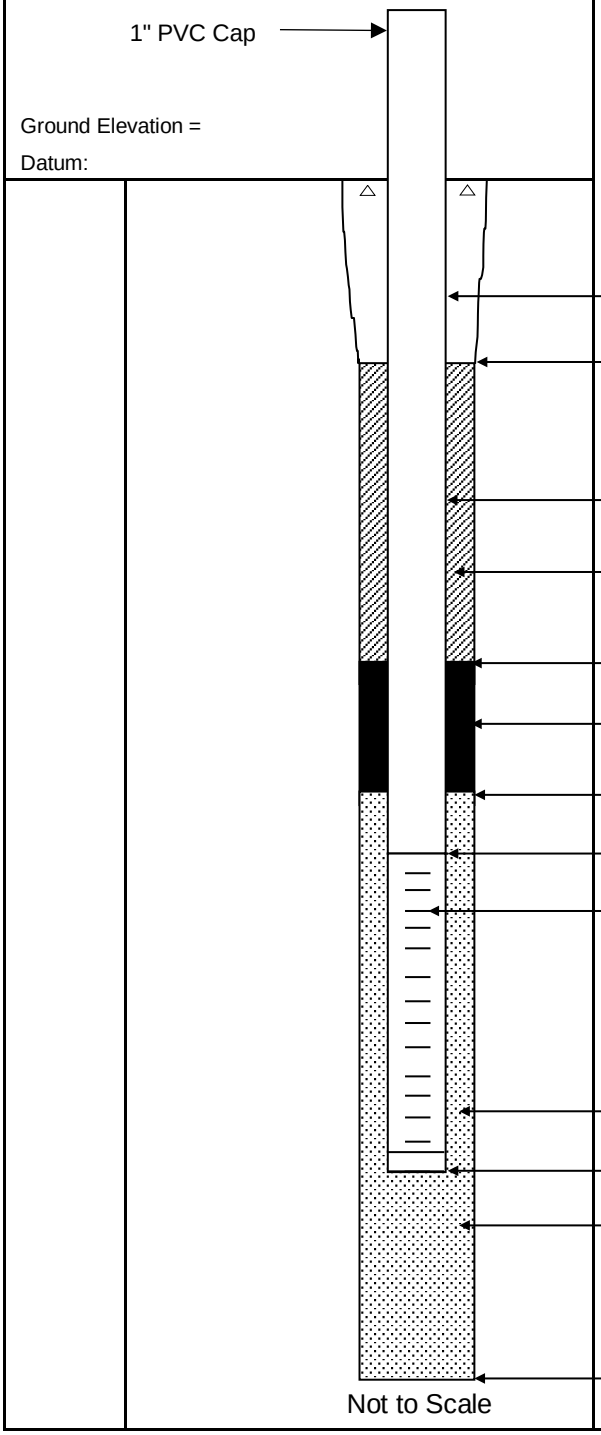
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 23.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 26.5'
Elevation / Depth of Top of Screen:		/ 27.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 29.0'
Elevation / Depth of Bottom of Filter Pack:		/ 29.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0034

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0034
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/21/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



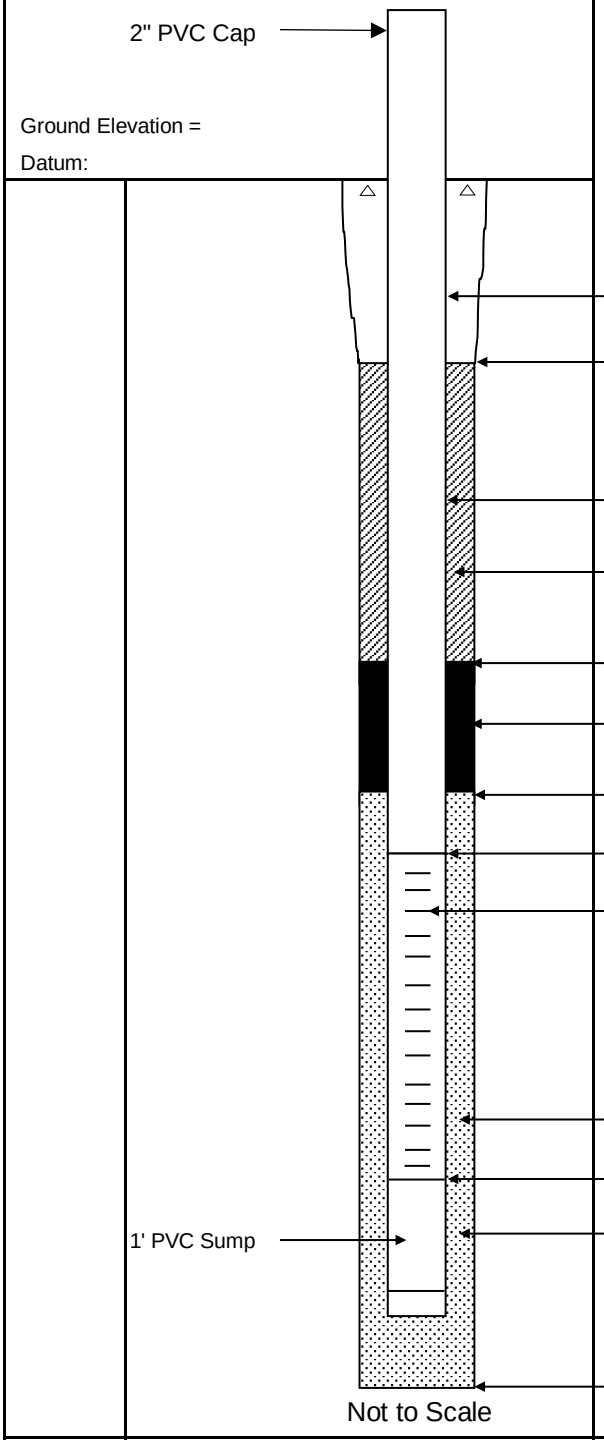
I.D. of Riser:	1"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	4"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 22.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 25.5'
Elevation / Depth of Top of Screen:		/ 26.0'
Type of Screen:	Schumasoil	
Slot Size x Length:	1" x 20" x 40 Micron (24" overall)	
I.D. of Screen:	1"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 28.0'
Elevation / Depth of Bottom of Filter Pack:		/ 28.0'
Type of Backfill Below Well: Bentonite		
Elevation / Total Depth of Borehole:		/ 35.0'

Tetra Tech, Inc.

BORING No.: AS0118

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0118
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/22/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



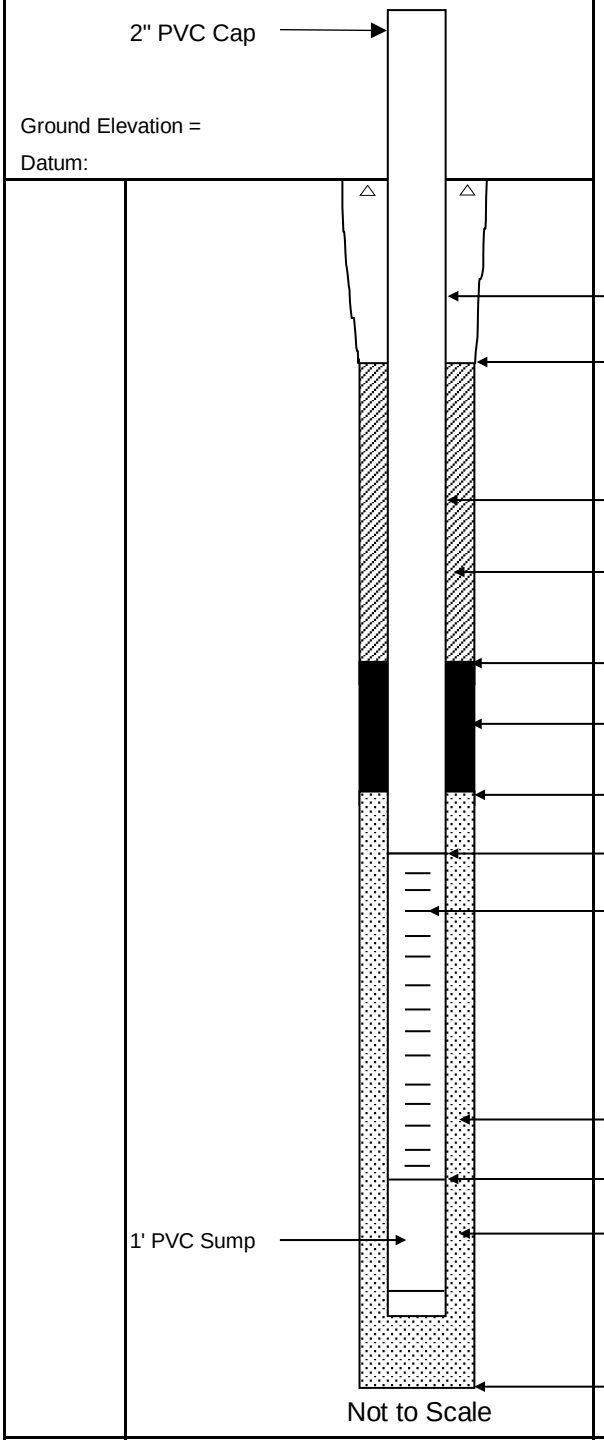
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0152

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0152
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/23/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



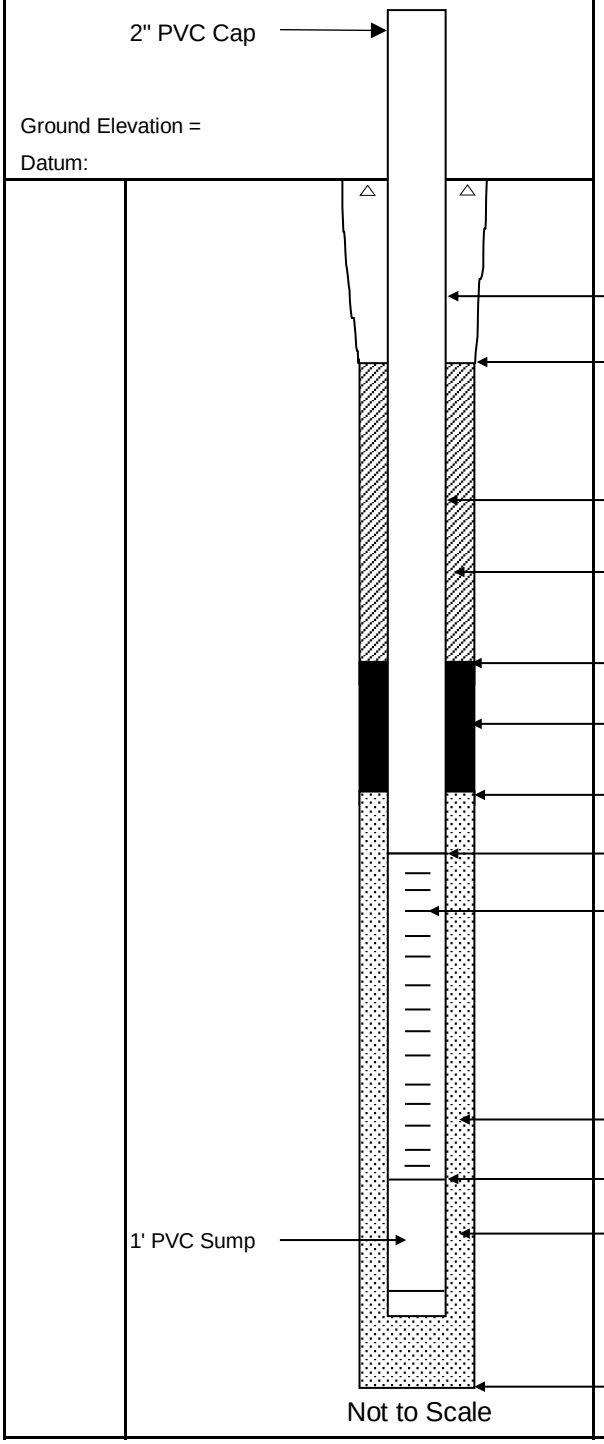
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.5'
Elevation / Depth of Top of Screen:		/ 42.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 44.0'
Elevation / Depth of Bottom of Filter Pack:		/ 45.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0205

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0205
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/23/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



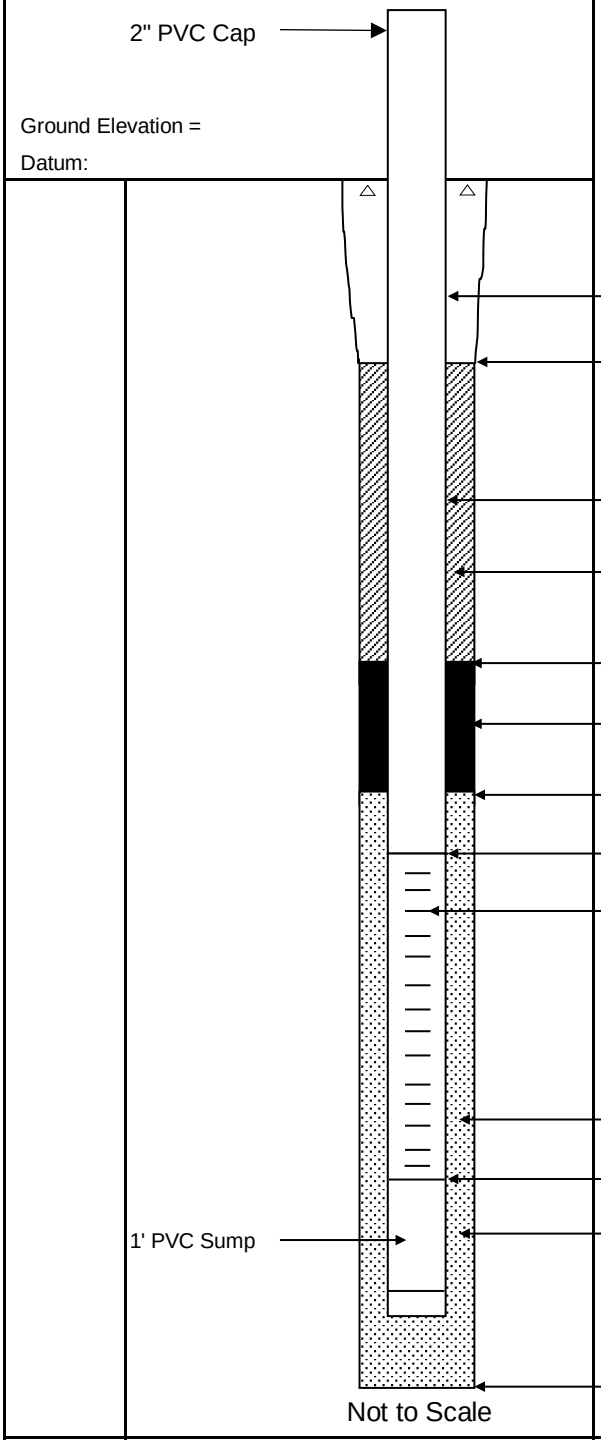
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.0'
Elevation / Depth of Top of Screen:		/ 39.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 41.5'
Elevation / Depth of Bottom of Filter Pack:		/ 42.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0171

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0171
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/28/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



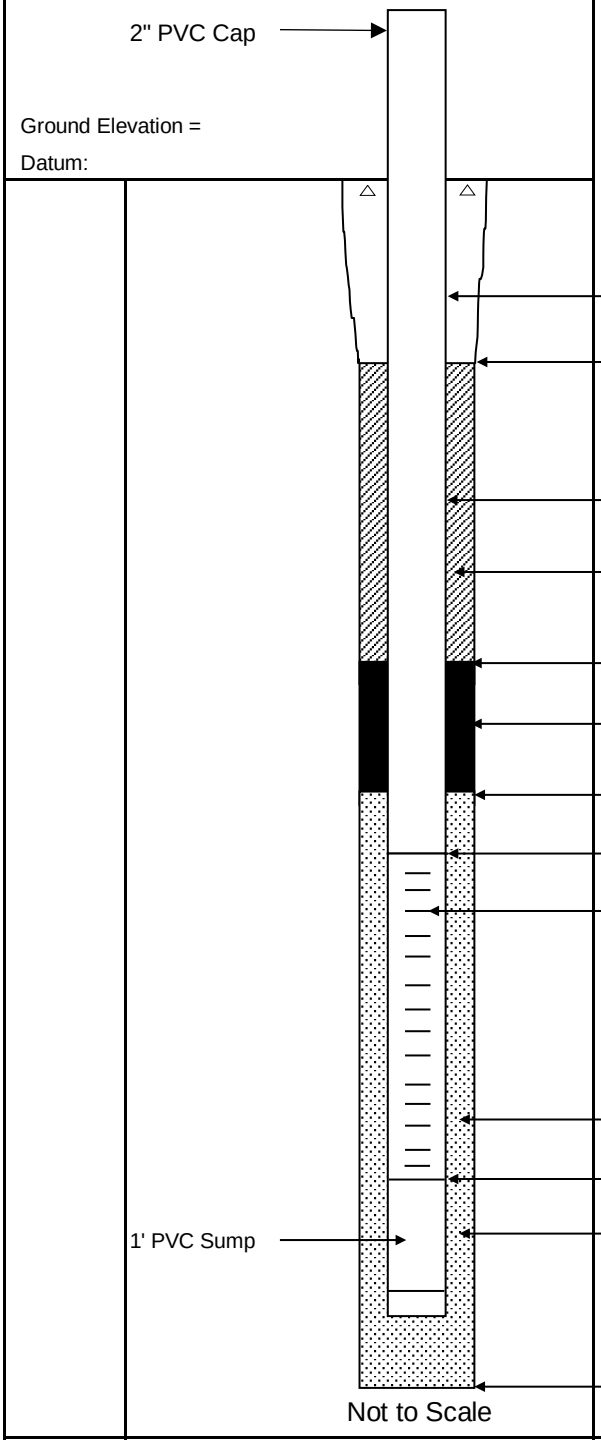
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 38.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 41.0'
Elevation / Depth of Top of Screen:		/ 41.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 43.5'
Elevation / Depth of Bottom of Filter Pack:		/ 44.5'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0192

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0192
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/28/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



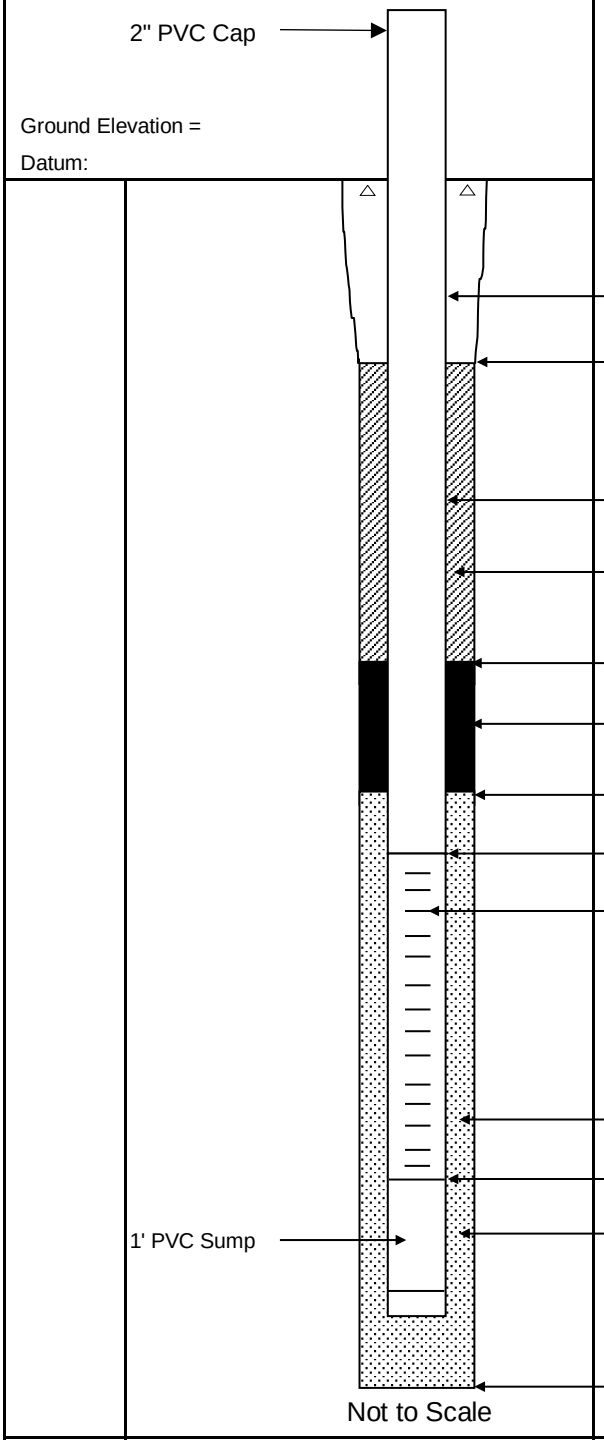
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0190

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0190
PROJECT No.:	112G08982	DRILLER:	Dave Longino	DATE COMPLETED:	01/28/20
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	S. Rogers	DEV. METHOD:	Pump	EASTING:	



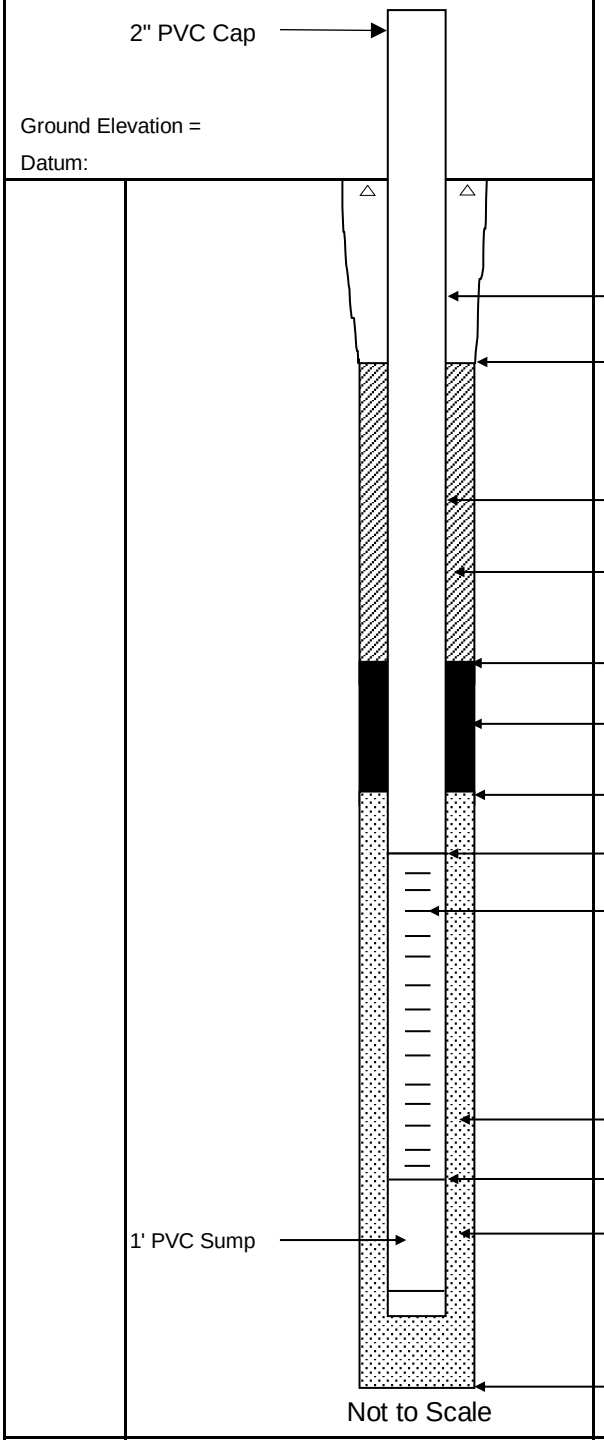
I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 36.5'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 39.5'
Elevation / Depth of Top of Screen:		/ 40.0'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.0'
Elevation / Depth of Bottom of Filter Pack:		/ 43.0'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

Tetra Tech, Inc.

BORING No.: AS0055

AIR SPARGING WELL SHEET with FLUSHMOUNT COMPLETION

PROJECT:	NASA-KSC	DRILLING Co.:	DrillPro, LLC.	WELL No.	AS0055
PROJECT No.:	112G08982	DRILLER:	Jared Link	DATE COMPLETED:	12/02/19
SITE:	HMFN	DRILLING METHOD:	Rotosonic	NORTHING:	
GEOLOGIST:	C. Sorden	DEV. METHOD:	Pump	EASTING:	



I.D. of Riser:	2"	
Elevation / Depth to Top of Grout:		/ 3.0'
Borehole Diameter:	6"	
Type of Riser:	Sch. 40 PVC	
Type of Seal:	Bentonite/ Portland Cement Grout	
Elevation / Depth of Seal:		/ 37.0'
Type of Seal:	Bentonite	
Elevation / Depth of Top of Filter Pack:		/ 40.0'
Elevation / Depth of Top of Screen:		/ 40.5'
Type of Screen:	Sch. 40 PVC	
Slot Size x Length:	0.010" x 24" Pre-Packed Screen	
I.D. of Screen:	2"	
Type of Filter Pack:	20/30 Filter Sand	
Elevation / Depth of Bottom of Screen:		/ 42.5'
Elevation / Depth of Bottom of Filter Pack:		/ 43.5'
Type of Backfill Below Well:	Bentonite and 30/65 Sand	
Elevation / Total Depth of Borehole:		/ 50.0'

APPENDIX E

SAMPLE FIELD NOTES AND LOG SHEETS

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1303 | PAGE 1 OF 3

PROJECT NO: 112G08982	FACILITY: KSC-HMFN	PROJECT MANAGER: Chris HOOK	PHONE NUMBER: 412-921-8790
SAMPLERS (SIGNATURE): Melissa Bennett		FIELD OPERATIONS LEADER: Melissa Bennett	PHONE NUMBER: 321-914-9394
		CARRIER/WAYBILL NUMBER:	

LABORATORY NAME AND CONTACT: ENCO, Kaitlin
ADDRESS: 10775 Central Port Dr
CITY, STATE: Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2020)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: 8260B	COMMENTS
06/02	1105	HMFN-MW0038-020.0-20200602	MW38	15	25	GW	G	3			X	
06/02	1155	HMFN-MW0037-010.0-20200602	MW37	5	15	GW	G	3			X	
06/02	1245	HMFN-MW0046-015.0-20200602	MW46	10	20	GW	G	3			X	
06/02	1325	HMFN-MW0047-025.0-20200602	MW47	20	30	GW	G	3			X	
06/02	1430	HMFN-MW0004-010.0-20200602	MW004	5	15	GW	G	3			X	
06/02	1530	HMFN-MW0039-035.0-20200602	MW39	30	40	GW	G	3			X	
06/02	1600	HMFN-MW0040-042.5-20200602	MW40	40	45	GW	G	3			X	
06/02	1645	HMFN-MW0043-035.0-20200602	MW43	30	40	GW	G	3			X	
06/03	0940	HMFN-MW0044-042.5-20200603	MW44	40	45	GW	G	3			X	
06/03	1035	HMFN-MW0041-035.0-20200603	MW41	30	40	GW	G	3			X	
06/03	1125	HMFN-MW0042-042.5-20200603	MW42	40	45	GW	G	3			X	
06/03	1225	HMFN-MW0011-025.0-20200603	MW11	20	30	GW	G	3			X	
06/03	1310	HMFN-MW0036-015.0-20200603	MW36	10	20	GW	G	3			X	

1. RELINQUISHED BY	DATE 6-5-2020	TIME 1430	1. RECEIVED BY	DATE 6/5/20	TIME 1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1304 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	KSC - HMFN	Chris Hook	412-921-8790	ENCO, Kaitlin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Melissa Bennett		Melissa Bennett	321-914-9394	10775 Central Port Dr
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									PRESERVATIVE USED								
									TYPE OF ANALYSIS								
									8260 B								
06/03	1415	HMFN-MW0009-010.0-20200603	MW9	5	15	GW	G	3	X								
06/03	1725	HMFN-MW0034-015.0-20200603	MW34	10	20	GW	G	3	X								
06/04	0920	HMFN-MW0035-035.0-~~20200603~~ 20200604 MS	MW35	30	40	GW	G	3	X								
06/04	1000	HMFN-MW0008-025.0-20200604	MW08	20	30	GW	G	3	X								
06/04	1045	HMFN-MW0029-015.0-20200604	MW29	10	20	GW	G	3	X								Hot spot
06/04	1120	HMFN-MW0030-025.0-20200604	MW30	~~30~~ 25	~~40~~ 30	GW	G	3	X								Hot spot
06/04	1150	HMFN-MW0031-035.0-20200604	MW31	30	40	GW	G	3	X								Hot spot
06/04	1220	HMFN-MW0032-042.5-20200604	MW32	40	45	GW	G	3	X								Hot spot
06/04	1305	HMFN-MW0033-047.5-20200604	MW33	45	50	GW	G	3	X								Hot spot
06/04	1400	HMFN-MW0024-060.0-20200604	MW24	53	65	GW	G	3	X								Hot spot
06/04	1500	HMFN-MW0002-035.0-20200604	MW02	30	40	GW	G	3	X								Hot spot
06/05	0930	HMFN-MW0027-042.5-20200605	MW27	40	45	GW	G	3	X								Hot spot
06/05	1000	HMFN-MW0028-047.5-20200605	MW28	45	50	GW	G	3	X								Hot spot

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	~~06~~ 06-5-20	1430	1. RECEIVED BY	6/5/20	1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1305 | PAGE 3 OF 3

PROJECT NO: 112G08982	FACILITY: KSC-HMFN	PROJECT MANAGER Chris Hook	PHONE NUMBER 412-921-8790	LABORATORY NAME AND CONTACT: ENCO, Kaitlin
SAMPLERS (SIGNATURE) Melissa Bennett		FIELD OPERATIONS LEADER Melissa Bennett	PHONE NUMBER 321-914-9394	ADDRESS 10775 Central Park D.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS B260 B	HCl	G	COMMENTS
06/05	1100	HMFN-MW0045-030.0-20200605	MW45	25	35	GW	G	3			X			Hot Spot
06/05	1115	HMFN-DRUM209857-20200605	DRUM	—	—	GW	G	3			X			IDW

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	6-5-2020	1430	1. RECEIVED BY	6/5/20	1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

etra Tech EGS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: HMFN
Project No.: 112G08982
Location: Kennedy Space Center (KSC), Florida
Personnel: Melissa Bennett
Weather Conditions: Overcast
Measuring Device: Heron Skinny Dipper
Tidally Influenced: Yes ___ No __X__
Remarks:

Well or Piezometer (HMFN-)	Date	Time	Elevation of Reference Point (feet)*	Screened Interval (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW0002	6/1/2020	1100		30 to 40	1.16	0		
MW0004	6/1/2020	1102		5 to 15	2.32	0		
MW0008	6/1/2020	1105		20 to 30	4.48	0		
MW0009	6/1/2020	1110		5 to 15	3.93	0		
MW0011	6/1/2020	1113		20 to 30	2.33	0		
MW0024	6/1/2020	1117		55 to 65	2.90	0		
MW0027	6/1/2020	1120		40 to 45	4.6	0		
MW0028	6/1/2020	1121		45 to 50	4.44	0		
MW0029	6/1/2020	1123		10 to 20	3.83	0		
MW0030	6/1/2020	1124		20 to 30	3.95	0		
MW0031	6/1/2020	1125		30 to 40	3.90	0		
MW0032	6/1/2020	1126		40 to 45	3.77	0		
MW0033	6/1/2020	1130		45 to 50	3.87	0		
MW0034	6/1/2020	1132		10 to 20	-	0		broken
MW0035	6/1/2020	1133		30 to 40	4.35	0		
MW0036	6/1/2020	1135		10 to 20	2.15	0		
MW0037	6/1/2020	1140		5 to 15	5.01	0		
MW0038	6/1/2020	1142		15 to 25	4.89	0		
MW0039	6/1/2020	1145		30 to 40	3.96	0		
MW0040	6/1/2020	1146		40 to 45	4.07	0		
MW0041	6/1/2020	1148		30 to 40	3.16	0		
MW0042	6/1/2020	1152		40 to 45	3.14	0		
MW0043	6/1/2020	1200		30 to 40	3.05	0		
MW0044	6/1/2020	1204		40 to 45	3.05	0		
MW0045	6/1/2020	1210		25 to 35	5.20	0		
MW0046	6/1/2020	1216		10 to 20	4.50	0		
MW0047	6/1/2020	1218		20 to 30	4.41	0		

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW002	SAMPLE ID: MW0002-035.0-2020 0604 Sample depth (ddd.d)=[botto of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.02	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.55 Liters 0+ (0.002 X 48) + 0.45 = 0.546

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1430	PURGING ENDED AT: 1455	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1450	5.0	5.0	250	4.19	8.67	23.80	2699	0.19	4.31	572.1	clear
1452	0.5	5.5	250	4.22	8.67	23.78	2719	0.17	4.03	565.0	
1455	0.75	6.25	250	4.24	8.66	23.82	2726	0.21	4.67	567.6	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1505
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0004	SAMPLE ID: MW0004-010.0-2020 0206 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06/02/2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.31	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1350	PURGING ENDED AT: 1425	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1410	5.0	5.0	250	2.36	11.65	24.07	185	0.39	3.26	-280.0	yellow
1415	1.25	6.25	250	2.36	11.52	24.09	186	0.36	3.01	-287.2	yellow
1420	1.25	7.50	250	2.36	11.63	24.10	185	0.35	4.62	-273.1	yellow
1425	1.25	8.75	250	2.36	11.61	24.10	183	0.35	4.07	-285.6	yellow

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1430	SAMPLING ENDED AT: 1431
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

Foul odor, Sulfurus

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0008	SAMPLE ID: MW0008-025.0-2020 0604 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.64	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.53 Liters 0+ (0.002 X 38) + 0.45 = 0.526

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 0930	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (Liters): 7.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0950	5.0	5.0	250	3.69	7.48	23.52	855	0.14	9.81	-190.2	clear
0952	1.25	6.25	250	3.69	7.49	23.51	853	0.13	8.67	-191.0	clear
0955	1.25	7.50	250	3.69	7.48	23.53	859	0.12	6.13	-199.4	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1005
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS: ~~foul odor, slightly yellow~~

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0009	SAMPLE ID: MW0009-010.0-2020 0603 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 03 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.32	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1340 1440	PURGING ENDED AT: 1410	TOTAL VOLUME PURGED (Liters): 7.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1400	5.0	5.0	250	5.36	6.27	24.66	3208	0.74	10.6	476.4	clear
1405	1.25	6.25	250	5.30	6.27	24.68	3267	0.73	11.2	473.2	clear
1410	1.25	7.50	250	5.36	6.26	24.66	3092	0.71	10.1	476.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1415	SAMPLING ENDED AT: 1420
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0011	SAMPLE ID: MW0011-025.0-2020 0603 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **06** / 03 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.58	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.53 Liters 0+ (0.002 X 38) + 0.45 = 0.526

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1150	PURGING ENDED AT: 1220	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1210	5.0	5.0	250	3.61	7.72	24.40	1210	0.08	1.63	-238.7	clear
1215	1.25	6.25	250	3.61	7.70	24.46	1213	0.07	1.45	-232.3	
1220	~~1250~~	1.25	7.50	250	3.62	7.63	24.46	1214	0.08	1.23	-236.8	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES: MB	SAMPLING INITIATED AT: 1225	SAMPLING ENDED AT: 1230
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0024	SAMPLE ID: MW0024-060.0-2020 0604 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.10	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 55 to 65

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 55	BOTTOM DEPTH (feet bls): 65

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.59 Liters 0+ (0.002 X 68) + 0.45 = 0.586

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 60	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 60	PURGING INITIATED AT: 1330	PURGING ENDED AT: 1355	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1350	5.0	5.00	250	3.16	8.80	24.16	3422	0.12	6.88	-210.6	clear
1352	0.50	5.50	250	3.16	8.81	24.18	3428	0.10	4.86	-218.2	
1355	0.75	6.25	250	3.16	8.82	24.19	3439	0.09	2.82	-220.5	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 60	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0027	SAMPLE ID: MW0027-042.5-2020 0605 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 05 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.70	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 56 Liters 0+ (0.002 X 53) + 0.45 = 0.556

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 0900	PURGING ENDED AT: 0925	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0920	5.0	5.0	250	6.81	8.49	23.63	3887	0.38	4.18	-217.7	clear
0923	0.75	5.75	250	6.82	8.38	23.71	3892	0.32	2.06	-213.7	↓
0925	0.50	6.25	250	6.82	8.36	23.70	3893	0.32	2.61	-212.5	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0930	SAMPLING ENDED AT: 0935
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT COES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0028	SAMPLE ID: MW0028-047.5-2020 0605 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 05 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.80	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 45-50

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 57 Liters 0+ (0.002 X 58) + 0.45 = 0.566

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 0940	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (Liters): 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0950	2.50	2.50	250	6.83	8.52	23.51	3882	0.27	10.6	-224.8	clear
0952	0.50	3.00	250	6.84	8.51	23.52	3895	0.28	4.93	-226.3	
0955	0.75	3.75	250	6.85	8.50	23.53	3893	0.27	6.82	-227.9	↓
1000	Sample collected										

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1005

PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: Y (N) FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm
Filtration Equipment Type: DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0029	SAMPLE ID: MW0029-015.0-2020 0604 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1010	PURGING ENDED AT: 1043 ~~8.2~~	TOTAL VOLUME PURGED (Liters): 8.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1030	5.0	5.0	250	~~3.03~~ 3.03	7.32	23.87	~~327~~ 327	0.13	8.71	-152.1	clear
1035	1.25	6.25	250	3.04	7.33	23.99	~~326~~ 326	0.11	7.66	-232.5	clear
1040	1.25	7.50	250	3.06	7.38	24.02	~~329~~ 330	0.13	5.13	-233.2	clear
1043	0.75	8.25	250	3.05	7.38	24.02	330	0.18	9.33	-233.7	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1045	SAMPLING ENDED AT: 1050
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS: faul odor, slightly yellow

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT COES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

ypergol Maintenance Facility North (HMFN) at NASA-KSC		SITE LOCATION: **Kennedy Space Center, Florida**
CATION ID: MW0030	SAMPLE ID: MW0030-025.0-2020 0604 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.52 Liters 0+ (0.002 X 33) + 0.45 = 0.516

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1100	PURGING ENDED AT: 1117	TOTAL VOLUME PURGED (Liters): 4.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1110	2.50	2.50	250	4.09	7.40	23.86	833	0.12	10.3	-208.6	clear
1113	0.75	3.25	250	4.10	7.42	23.92	839	0.11	12.6	148.7	↓
1115	0.50	3.75	250	4.12	7.40	23.90	845	0.20	9.15	403.2	
1117	0.50	4.25	250	4.12	7.41	23.89	845	0.18	12.2	411.1	

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1123
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0032	SAMPLE ID: MW0032-042.5-2020 0604 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0. 53 Liters 0+ (0.002 X 48) + 0.45 = 0.526

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1200	PURGING ENDED AT: 1215	TOTAL VOLUME PURGED (Liters): 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1210	2.5	2.5	250	4.13	8.51	24.11	3945	0.26	8.21	-307.9	clear
1212	0.5	3.0	250	4.14	8.50	24.05	3912	0.20	6.52	-415.0	clear
1215	0.75	3.75	250		8.55	24.04	3925	0.17	4.83	-308.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1220	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0033	SAMPLE ID: MW0033-047.5-2020 _____ Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 /__ __ / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 45- 50

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 56 Liters 0+ (0.002 X 53) + 0.45 = 0.556

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 1235	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1250			250	4.09	7.95	24.0	3832	1.84	4.36	-191.3	clear
1255			250	4.09	7.82	24.20	3851	0.60	4.07	-163.2	
1300			250	4.09	7.70	24.24	3830	0.58	1.26	-159.6	
1303			250	4.09	7.71	24.25	3874	0.55	3.22	-153.6	

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1305	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0034	SAMPLE ID: MW0034-015.0-2020 0603 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 03 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.62	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 10-20	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
2.5 Liters (20 - 3.62) x 0.15 =

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0. 50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1430	PURGING ENDED AT: 1720	TOTAL VOLUME PURGED (Liters): 55.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1700	52.5	~~53.75~~ 52.50	350	3.69	8.13	23.84	496	0.17	11.2	-263.2	clear
1715	1.25	53.75	250	3.66	8.14	23.86	489	0.15	9.13	-246.5	clear
1720	1.25	55.00	250	3.66	8.13	23.87	499	0.14	10.6	-244.4	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1725	SAMPLING ENDED AT: 1730
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:
repaired 6-2-20 at 1000, redeveloping well before sampling

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0035	SAMPLE ID: MW0035-035.0-2020 0604 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 04 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.56	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 54 Liters 0+ (0.002 X 43) + 0.45 = 0.536

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 0840	PURGING ENDED AT: 0915	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0905	6.25	~~6.50~~	250	15.23	6.51	24.56	499	0.32	9.61	-243.2	clear
0910	1.25	6.25 ~~7.50~~	250	18.62	6.53	24.55	498	0.30	8.24	-291.6	
0915	1.25	8.75	250	20.01	6.53	24.54	499	0.29	7.61	-282.1	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0920	SAMPLING ENDED AT: 0925
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: _____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0036	SAMPLE ID: MW0036-015.0-2020 0603 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 03 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.42	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1230	PURGING ENDED AT: 1305	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1250	5.0	5.0	250	3.46	8.34	24.44	586	0.09	38.6	-275.7	brown
1255	1.25	6.25	250	3.46	8.05	24.72	593	0.09	35.7	-260.5	↓
1300	1.25	7.50	250	3.46	8.03	24.70	593	0.09	34.6	-260.8	
1305	1.25	8.75	250	3.46	8.05	24.72	593	0.09	35.9	-263.1	

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1310	SAMPLING ENDED AT: 1315
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0037	SAMPLE ID: HMFN-MW0037-010.0-2020 0602 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.51	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1115	PURGING ENDED AT: 1150	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1135	5.0	5.0	250	5.59	9.88	23.67	822	0.23	-131.0 ↔ 1.64		clear
1138	0.75	5.75	250	5.59	9.99	24.10	829	0.21	1.50	-189.3	clear
1140	0.5	6.25	250	5.59	10.03	24.06	828	0.23	1.35	-163.5	clear
1143	0.75	7.00	250	5.59	10.51	24.10	828	0.18	1.23	-172.6	clear
1145	0.5	7.50	250	5.59	10.77	24.08	828	0.20	1.15	-186.3	clear
1150	1.25	8.75	250	5.59	10.89	23.96	827	0.28	1.26	-195.2	clear
1155	sample collected										

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1155	SAMPLING ENDED AT:
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm	DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0038	SAMPLE ID: MW0038-020.0-2020 0602 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 15 to 25	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): 25

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.52 Liters 0+ (0.002 X 33) + 0.45 = 0.516

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1020	PURGING ENDED AT: 1102	TOTAL VOLUME PURGED (Liters): 10.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1040	5.0	5.0	250	5.37	6.09	23.82	1556	0.27	4.02	19.1	clear
1045	1.25	6.25	250	5.37	6.75	23.79	1556	0.30	2.88	-20.7	clear
1048	0.50	6.75	250	5.37	7.97	23.75	1553	0.76	2.15	-87.1	clear
1050	0.75	7.50	250	5.37	8.38	23.78	1552	1.02	1.28	-105.5	clear
1055	1.25	8.75	250	5.37	9.09	23.606	1554	0.77	1.21	-115.5	clear
1058	0.75	9.50	250	5.37	9.53	23.68	1548	0.47	1.20	-116.8	clear
1100	0.50	10.00	250	5.37	9.60	23.60	1546	0.40	1.50	-119.2	clear
1102	0.50	10.50	250	5.37	9.57	23.62	1543	0.39	1.36	-120.2	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1105	SAMPLING ENDED AT: 1115
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS: Slight sheen in purge bucket

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0039	SAMPLE ID: MW0039-035.0-2020 0602 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.02	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.54 Liters 0+ (0.002 X 43) + 0.45 = 0.536

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1445	PURGING ENDED AT: 1525	TOTAL VOLUME PURGED (Liters): 10.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1515	7.50	7.50	250	3.13	9.48	25.38	3678	0.44	5.32	-187.7	clear
1520	1.25	8.75	250	3.13	9.48	25.30	3678	0.45	4.25	-185.2	clear
1525	1.25	10.00	250	3.13	9.47	25.35	3788	0.43	3.61	-183.6	clear
1530	sample collected										

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1538 (1525)	SAMPLING ENDED AT: 1535
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: _____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0040	SAMPLE ID: MW0040-042.5-2020 0602 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.13	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.56 Liters 0+ (0.002 X 53) + 0.45 = 0.556

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet):42.5	PURGING INITIATED AT: 1535	PURGING ENDED AT: 1555	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1545	2.50	2.50	250	3.20	9.91	25.27	2911	0.35	24.4	-259.0	clear
~~1545~~			250								
~~+5~~ 1550	1.25	3.75	250	3.20	9.91	25.24	2888	0.36	23.6	-154.3	clear
1555	1.25	5.00	250	3.20	9.91	25.25	2848	0.39	22.2	-153.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1600	SAMPLING ENDED AT: 1605
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: _____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0045	SAMPLE ID: MW0045-030.0-20200605 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 05 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.60	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 25 to 35

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): 35

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____ Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1030	PURGING ENDED AT: 1055	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1050	5.0	5.0	250	7.61	8.57	23.68	1919	0.16	4.01	602.1	clear
1052	0.5	5.5	250	7.61	8.54	23.65	1919	0.15	3.61	613.2	↓
1055	0.75	6.25	250	7.61	8.56	23.64	1930	0.13	2.09	625.9	↓

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1100	SAMPLING ENDED AT: 1105
PUMP OR TUBING DEPTH IN WELL (feet): 30	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0046	SAMPLE ID: HMFN MW0046-015.0-2020 0 6 0 2 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.04	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.50 Liters 0+ (0.002 X 23) + 0.45 = 0.496

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1205	PURGING ENDED AT: 1240	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1235	5.0	5.0	250	5.09	10.84	23.56	931	0.10	0.58	-173.3	clear
1238	0.75	5.75	250	5.09	10.92	23.68	933	0.05	0.50	-193.8	clear
1240	0.50	6.25	250	5.09	11.01	23.66	933	0.06	0.43	-188.2	clear
1245	sample collected										

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1245	SAMPLING ENDED AT: 1250
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: _____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0041	SAMPLE ID: MW0041-035.0-2020 0603 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.92	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 54 Liters 0+ (0.002 X 43) + 0.45 = 0.536

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1000	PURGING ENDED AT: 1030	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1020	5.0	5.0	250	2.96	6.82	25.04	1453	0.15	1.68	592.3	clear
1025	1.25	6.25	250	2.96	6.82	25.02	1490	0.13	1.63	608.2	clear
1030	1.25	7.50	250	2.96	6.82	25.05	1505	0.15	1.84	617.7	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1035	SAMPLING ENDED AT: 1040
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC	SITE LOCATION: **Kennedy Space Center, Florida**	
LOCATION ID: MW0043	SAMPLE ID: MW0043-035.0-2020 0 6 0 2 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.07	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0. 54 Liters 0+ (0.002 X 43) + 0.45 = 0.536

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet):35	PURGING INITIATED AT: 1610	PURGING ENDED AT: 1640	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1630	5.0	5.0	250	3.13	9.63	25.20	1840	0.31	6.84	-205.0	clear
1635	1.25	6.25	250	3.13	9.63	25.28	1880	0.27	6.73	-205.8	clear
1640	1.25	7.50	250	3.13	9.62	25.35	1901	0.26	5.53	-106.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1645	SAMPLING ENDED AT: 1649
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: ____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: Hypergol Maintenance Facility North (HMFN) at NASA-KSC		SITE LOCATION: **Kennedy Space Center, Florida**
LOCATION ID: MW0044	SAMPLE ID: MW0044-042.5-2020 0 6 02 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 06 / 02 / 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.10	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____ Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0. 56 Liters 0+ (0.002 X 53) + 0.45 = 0.556

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 0900	PURGING ENDED AT: 0935	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (ml/pm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0920	5.0	5.0	250	3.23	4.5.14	24.91	4342	0.49	5.61	5.8	clear
0925	1.25	6.25	250	3.23	5.94	24.97	4360	0.42	4.36	-82.9	clear
0930	1.25	7.50	250	3.24	6.03	24.95	4373	0.39	3.61	-134.4	clear
0935	1.25	8.75	250	3.24	6.13	24.95	4377	0.42	2.85	-126.3	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0940	SAMPLING ENDED AT: 0945
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP 100 FLOW RATE (mL per minute):	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: Y (N)	FIELD-FILTERED: Y (N) Filtration Equipment Type: _____ FILTER SIZE: ____ µm	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL	None	<2	VOCs 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS, Inc.
Date:
Investigative Derived Waste Inventory
NASA - Kennedy Space Center

Site	Generation Date	Media	Source	Number of Drums Present	Pallet ID	Drum ID Number (Bar Code)	Contact	Location of Drums	IDW Origination	pH	Concentrations (ug/L)	Tie Down Strap Yes / No
HMFN	6-2-20	H_2O	purge water gw wells	1	209858	209857	Ryan Omear	HMFN		7.72		Y

LAMOTTE TURBIDITY METER CALIBRATION LOG

Tetra Tech NUS, Inc.

PROJECT NAME : HMFN GW Baseline

INSTRUMENT NAME/MODEL: Lamotte 2020 Turbidimeter

SITE NAME: HMFN

MANUFACTURER: Lamotte

PROJECT No.: 1126 08982

SERIAL NUMBER: 1513-2219

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-Calibration	Post-Calibration	Pre-Calibration	Post-Calibration		
(mm/dd/yy)	(Number)	(Name)	Nephelometric Turbidity Units (NTUs)				(Number)	
06/02/20		MB	1.0	1.0	1.02	1.00		
			10.0	10.0	10.08	10.00		
6/3/20		MB	1.0	1.0	0.96	1.00		
			10.0	10.0	9.63	10.00		
6/4/20		MB	1.0	1.0	0.89	1.0		
			10.0	10.0	9.91	10.00		
6/5/20		MB	1.0	1.0	0.90	1.0		
			10.0	10.0	10.1	10.0		
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
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			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				
			1.0	1.0				
			10.0	10.0				

YSI 556 EQUIPMENT CALIBRATION SHEET

Tetra Tech, Inc.

PROJECT NAME : HMFN Baseline GW sampling **INSTRUMENT NAME/MODEL:** YSI 556 MPS

SITE NAME: HMFN **MANUFACTURER:** YSI

PROJECT No.: 112G089 82 **SERIAL NUMBER:**

Date of Calibration	Person Performing Calibration	pH			Cond.	Temp.	Dissolved Oxyden	ORP	Calibration Standard (Lot#/Expiration Date)	Comments
(mm/dd/yy)	(Name)	(S.U.)			(µS/cm)	(Celsius)	(%)	(mV)		
06/02/20	MB	5.47 / 4.0	/ 7.0	6.23 / 10.0	1422 / 1413	25.81	98.3 / 100.0	193 / 220	Lot# 1910318 Exp.Date: 5/21	Ph 4.0
06/03/20	MB	6.81 / 4.0	6.93 / 7.0	9.97 / 10.0	1436 / 1413	25.01	95.2 / 100.0	179 / 220	Lot# 200180C Exp.Date: 8/21	Ph 7.0
06/04	MB	5.62 / 4.0	6.62 / 7.0	9.86 / 10.0	1433 / 1412	24.82	101.2 / 100.0	209 / 220	Lot# 200300A Exp.Date: 10/21	Ph 10.0
06/05	MB	6.96 / 4.0	6.82 / 7.0	9.91 / 10.0	1436 / 1412	25.92	102.3 / 100.0	211 / 220	Lot# OGA959 Exp.Date: 10/20	ORP
		/ 4.0	/ 7.0	/ 10.0	/		/	/	Lot# 200150A Exp.Date: 2/21	Conductivity
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		
		/ 4.0	/ 7.0	/ 10.0	/		/	/		

HMFN Q1 sampling

HMFN
ive Q1 performance monitoring
el MB. Melissa Bennett, TT, Env Eng.
Level D
er 74°F, overcast

MB onsite uncapping MW to allow to equilibrate
1030 All wells uncapped, MB calibrating equiptment
MB begin collecting WL.

Well ID	Screen Int	WL		
MW16	5-15			
MW2	30-40			
MW4	5-15			
MW8	20-30			
MW9	5-15	3.63		
MW11	20-30			
MW24	55-65			
MW27	40-45			
MW28	45-50			
MW29	10-20			
MW30	20-30	3.68		
MW31	30-40	3.58		
MW32	40-45	3.47		
MW33	45-50	3.50		
MW34	10-20	4.10		
MW35	30-40	4.05		
MW36	10-20	3.91		
MW37	5-15	4.10		
MW38	15-25	~~3.65~~	~~3.91~~	3.63
MW39	30-40	~~3.70~~	~~3.005~~	3.70
MW40	40-45	3.70		
MW41	30-40	2.84		
MW42	40-45	2.84		
MW43	30-40	2.70		
MW44	40-45	2.79		
MW45	25-35			
MW46	10-20	3.94		
MW47	20-30	3.90		

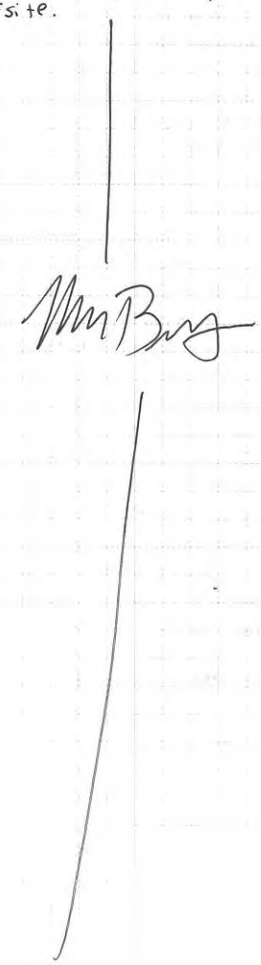
NOTE: pouring rain begins at 1130, unable to complete WL collection

MB begin collection of MW38, tubing missing. MB checks nearby MW39, no tubing.
MB to LC34 to collect tubing for wells
MB onsite HMFN
MB initiate purge at MW38 → MW40
HMFN-MW0038-020.0-20201026
~~MW44~~ HMFN-MW0040-042.5-20201026
MB initiate purge at MW39

たちの前に立ちはだかる壁とどう向き合い、どう乗り越えていくか。
までそれぞれの世代の人々が、その術を一所懸命編み出しては、
世代に伝えてきました。そして、いちばん効果的なのは
り」だということに終着するのではないでしょうか。
ばり「笑い」は人間が生み出した最大の、幸せを生み出すための知恵だと思います。
ー ヤマザキマリさんが『世界をつくってくれたもの。』の中で

Oct 26

1400 sample HMFN-MW0039-035.0-20201026 (turb >600)
1410 initiate purge MW0043
1435 sample HMFN-MW0043-035.0-20201026 (turb 36)
1440 initiate purge MW0044
1500 sample HMFN-MW0044-042.5-20201026 (turb 40)
1515 purge initiated at MW0034
1540 sample collected HMFN-MW0034-015.0-20201026
1550 purge initiated at MW0035
1620 sample collected HMFN-MW0035-035.0-20201026
1630 MB begin cleaning equiptment + housekeeping
1700 MB offsite.



習慣になることほど強いことはない。
習慣はつくれるはず。
—— 糸井重里が『今日のダーリン』の中で

1 HMFN MW sampling

HMFN
ctive MW Sampling
nnel MB, Melissa Bennett, Tt Eng Eng
Level D
her 79°F

30 MB onsite
30 MB calibrating equipment
30 MB initiate purge at MW46
30 HMFN-MW0046-015.0-20201027 collected
~~0~~05 MB initiate purge at MW47
30 HMFN-MW0047-025.0-20201027 collected
40 MB initiate purge MW37
0 HMFN-MW0037-010.0-20201027 collected
10 MB initiate purge ~~MW38~~ ~~MW36~~ MW38
~~HMFN-MW0038-020.0-20201027~~ HMFN-MW0038-020.0-2020 1027
40 HMFN-MW0036-015.0-20201027 collected
50 MB initiate purge MW29
20 HMFN-MW0029-015.0-20201027 collected
25 MB initiate purge at MW30
50 HMFN-MW0030-025.0-20201027 collected
00 MB initiate purge at MW31
30 HMFN-MW0031-035.0-20201027 collected
40 HMFN-MW0032 purge initiated
300 HMFN-MW0032-042.5-20201027 collected
310 MB initiate purge at MW38
340 HMFN-MW0033-047.5-20201027 collected
350 MB initiate purge at MW9
120 HMFN-MW0009-010.0-20201027 collected
130 MB initiate purge at MW8
200 HMFN-MW0008-025.0-20201027 collected
230 MB out of purge buckets, collecting bucket + containerizing IDW.
100 MB offsite HMFN
130 MB meet Dan Forrester at POC for CRCA influent/effluent samples

のために」ということと、「誰かのために」ということを考えるとき、
になるのは「時間軸」だと思います。
ときに「誰かのために力を発揮しよう」と考えることは、正直言って難しいです。
の中で決断するときは、どの年齢でなにを考えるのか、
軸とともに見極めていくことが重要です。
－早野龍五が『学ぶこと、盗むこと、仕入れること。』の中で

Oct 28 HMFN MW Sampling

Site HMFN
Objective MW sampling
Personnel MB, Melissa Bennett
PPE Level D
Weather 79°F

0730 MB onsite HMFN (stop this AM for supplies from Walmart) calibrating equ
0800 MB containerizing IDW
0810 MB initiate purge at MW45
0845 HMFN-MW0045-030.0-20201028 collected
0850 MB initiate purge 27 MW27
0920 HMFN-MW0027-042.5-20201028
0930 MB initiate purge MW04
1000 HMFN-MW0004-010.0-20201028
1010 MB initiate purge MW16
1040 HMFN-MW0016-010.0-20201028 collected
1050 MB initiate purge at MW41
1120 HMFN-MW0041-035.0-20201028 collected
1130 MB initiate purge at MW42
1200 HMFN-MW0042-042.5-20201028 collected
1230 MB initiate purge at MW36
1300 HMFN-MW0036-015.0-20201028 collected
1310 MB initiate purge at MW11
1340 HMFN-MW0011-025.0-20201028 collected
1350 MB initiate purge at MW24
1420 HMFN-MW0024-060.0-20201028 collected
1440 MB putting away equipment + cleaning area- housekeeping
1545 MB offsite

見通しの悪い交差点で一時停止。
安全を確認していると、
右からも耕運機。左からも耕運機。前からも耕運機。
もしかして、耕運機以外通行禁止？
――『今日のミラクル』より

HMFN. Performance Monitoring

HMFN
:tive GW. modeling
'nnel MB, Melissa Bennett TT Eng
Level D
ther 81°F

)0 MB onsite uncapping MWs
0 MWs all uncapped
) MB collecting mw levels
, MB calibrating YSI, Lamotte
, MB purge MW02
, HMFN- MW0002-035.0-20201029
) MB purge MW028
, HMFN- MW0028-047.5-20201029
) MB containerizing IDW.
MB pH balance IDW
HMFN- DRUM220284-20201029 colleted
MB offsite

の中に出てくる人たちが底抜けに明るいのは、未来を考えないからです。
言えば、怖いものを知っているからいつ死んでも仕方ないみたいな感じで、
対する執着が少ないのかもしれない。
ゆえなのか、純情で、思いに身を捧げる度合いが強い。
、後先考えず人に迷惑かけまくるんですけどね。
ー 玉川奈々福さんが『出版社をやめて浪曲師になりました。』の中で

[redacted]

料理を食べて、おいしいって言ってごらんなさい。
必ず顔はニッコリするから。
おいしいっていう気持ちが顔をほほえませてくれるし、
なにより、おいしいって言うと自然と口角があがって
笑顔のようになるものネ。
—— サカキシンイチロウさんが『おいしい店とのつきあい方。』の中で

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: HMFN **Project No.:** 112G08982

Location: Kennedy Space Center (KSC), Florida **Personnel:** Melissa Bennett

Weather Conditions: Sunny **Measuring Device:** Heron Skinny Dipper

Tidally Influenced: Yes ___ No __X__ **Remarks:**

Well or Piezometer (HMFN-)	Date	Time	Elevation of Reference Point (feet)*	Screened Interval (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW0002	10/29/2020	1000		30 to 40	0.60			
MW0004	10/29/2020	1012		5 to 15	1.77			
MW0008	10/29/2020	1005		20 to 30	4.03			
MW0009	10/29/2020	1008		5 to 15	3.49			
MW0011	10/29/2020	1105		20 to 30	1.96			
MW0016	10/29/2020	1014			5.41			
MW0024	10/29/2020	1054		55 to 65	1.85			
MW0027	10/29/2020	1021		40 to 45	4.01			
MW0028	10/29/2020	1024		45 to 50	3.85			
MW0029	10/29/2020	1055		10 to 20	3.36			
MW0030	10/29/2020	1034		20 to 30	3.45			
MW0031	10/29/2020	1043		30 to 40	3.40			
MW0032	10/29/2020	1048		40 to 45	3.20			
MW0033	10/29/2020	1033		45 to 50	3.25			
MW0034	10/29/2020	1002		10 to 20	3.96			
MW0035	10/29/2020	1014		30 to 40	3.89			
MW0036	10/29/2020	1007		10 to 20	1.80			
MW0037	10/29/2020	1010		5 to 15	4.15			
MW0038	10/29/2020	1107		15 to 25	3.97			
MW0039	10/29/2020	1016		30 to 40	3.54			
MW0040	10/29/2020	1056		40 to 45	3.61			
MW0041	10/29/2020	1023		30 to 40	2.70			
MW0042	10/29/2020	1026		40 to 45	2.66			
MW0043	10/29/2020	1057		30 to 40	2.54			
MW0044	10/29/2020	1036		40 to 45	2.59			
MW0045	10/29/2020	1045		25 to 35	4.85			
MW0046	10/29/2020	1050		10 to 20	4.06			
MW0047	10/29/2020	1035		20 to 30	3.94			

* All measurements to the nearest 0.01 foot

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0004	SAMPLE ID: **HMFN-MW0004-010.0-20201028** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 28 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 1.77	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 1.77	WELL SCREEN INTERVAL DEPTH (feet bls): 5 -15
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5 — BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 23) + 0.25 = 0.365 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10			PURGING INITIATED AT: 0930		PURGING ENDED AT: 0959		TOTAL VOLUME PURGED 7.25	
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR
0940	2.50	2.50	250	1.89	7.35	24.7	3799	1.85	54.9	60.1	clear
0945	1.25	3.75	250	1.89	7.32	24.4	3777	1.76	32.9	59.0	clear
0948	0.75	4.50	250	1.89	7.31	24.2	3786	1.76	14	53.1	clear
0951	0.75	5.25	250	1.89	7.31	24.1	3791	1.78	10.7	48.0	clear
0955	1.00	6.25	250	1.89	7.31	24	3784	1.85	8.34	43.4	clear
0957	0.50	6.75	250	1.89	7.31	24.7	3785	1.89	4.34	40.1	clear
0959	0.50	7.25	250	1.89	7.31	24.7	3784	1.86	2.21	36.3	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1005
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N — FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0008	SAMPLE ID: **HMFN-MW0008-025.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.03	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.03		WELL SCREEN INTERVAL DEPTH (feet bls):	20-30
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls):	30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 38) + 0.25 = 0.44 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25		PURGING INITIATED AT: 1430		PURGING ENDED AT: 1450		TOTAL VOLUME PURGED	5	
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1435	1.25	1.25	250	4.19	7.80	29.3	20.6	6.86	13.9	74.9	clear
1438	0.75	2.00	250	4.19	7.16	27.6	2687	0.24	10.2	-5.6	clear
1441	0.75	2.75	250	4.19	7.14	27.4	2693	0.17	5.4	-21.6	clear
1444	0.75	3.50	250	4.19	7.00	27.5	2701	0.13	2.00	-20.3	clear
1447	0.75	4.25	250	4.19	6.89	27.4	2733	0.13	1.98	-16.9	clear
1450	0.75	5.00	250	4.19	6.85	27.4	2744	0.14	0.13	-13.7	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1505
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0009	SAMPLE ID: **HMFN-MW0009-010.0-20201027**	DATE: 10 27 2020
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	3.49	CASING HEIGHT (feet als):	0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	3.49	WELL SCREEN INTERVAL DEPTH (feet bls):	5 -15
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls):	15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 23) + 0.25 = 0.365 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	10	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	10	PURGING INITIATED AT:	1350	PURGING ENDED AT: 1405	TOTAL VOLUME PURGED 6.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1350	0.00	0.00	250	3.87	7.94	30.1	25.4	6.18	87.4	26.8	clear
1353	0.75	0.75	250	3.87	7.27	26.5	4542	0.74	65.4	40.9	clear
1356	0.75	1.50	250	3.87	7.30	26.3	4486	1.24	65.3	44	clear
1359	0.75	2.25	250	3.87	7.30	26.1	4462	1.78	45.9	48.5	clear
1402	0.75	3.00	250	3.87	7.30	25.9	4476	2.18	30.1	53.1	clear
1405	0.75	3.75	250	3.87	7.30	25.8	4478	2.32	21.9	56.9	clear
1408	0.75	4.50	250	3.87	7.30	25.8	4475	2.36	15.4	60	clear
1411	0.75	5.25	250	3.87	7.30	26.1	4478	2.57	11.3	63.3	clear
1414	0.75	6.00	250	3.87	7.30	26.1	4483	2.7	7.2	66.4	clear
1417	0.75	6.75	250	3.87	7.30	26.6	4477	2.2	4.8	69.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1420	SAMPLING ENDED AT: 1425
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0011	SAMPLE ID:	**HMFN-MW0011-025.0-20201028**
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	
DATE:	10 28 2020		

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	1.96	CASING HEIGHT (feet als):	0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	1.96	WELL SCREEN INTERVAL DEPTH (feet bls):	20-30
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE:	PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	20
BOTTOM DEPTH (feet bls):	30						

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 38) + 0.25 = 0.44 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	25	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	25	PURGING INITIATED AT:	1310	PURGING ENDED AT:	1333
TOTAL VOLUME PURGED	5.75						

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1318	2.00	2.00	250	2.18	6.72	25.5	2491	0.09	8.93	-5.4	clear
1321	0.75	2.75	250	2.18	6.72	25.6	2466	0.08	4.43	-4.5	clear
1324	0.75	3.50	250	2.18	6.72	25.7	2457	0.07	2.21	-3.7	clear
1327	0.75	4.25	250	2.18	6.72	25.9	2435	0.07	1.89	-2.9	clear
1330	0.75	5.00	250	2.18	6.72	25.5	2427	0.07	0.38	-1.7	clear
1333	0.75	5.75	250	2.18	6.72	25.8	2428	0.06	0.23	-0.9	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	Melissa Bennett /Tt	SAMPLER(S) SIGNATURES:	Melissa Bennett	SAMPLING INITIATED AT:	1340
SAMPLING ENDED AT:	1345				
PUMP OR TUBING DEPTH IN WELL (feet):	25	SAMPLE PUMP FLOW RATE (mL per	100	TUBING MATERIAL CODE:	Teflon
FIELD DECONTAMINATION:	N	FIELD-FILTERED:	N	FILTER SIZE:	
DUPLICATE:	N				

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0016	SAMPLE ID: **HMFN-MW0016-010.0-20201028**	DATE: 10 28 2020
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	5.41	CASING HEIGHT (feet als):	3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	2.41
WELL SCREEN INTERVAL DEPTH (feet bls):	5-15				
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE:	PP
TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	5	BOTTOM DEPTH (feet bls):	15		

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.002 x 23) + 0.25 = 0.296 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	10	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	10	PURGING INITIATED AT:	1010	PURGING ENDED AT:	1036	TOTAL VOLUME PURGED	6.5		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1012	0.50	0.50	250	5.53	5.75	25.1	280.5	9.9	54.9	82.4	clear
1015	0.75	1.25	250	5.53	5.35	23.6	489.4	0.39	22	76.1	clear
1018	0.75	2.00	250	5.53	5.33	23.6	440.5	0.25	14.5	77.1	clear
1021	0.75	2.75	250	5.53	5.36	23.5	411.9	0.18	11	66.6	clear
1024	0.75	3.50	250	5.53	5.36	23.6	397.7	0.17	9.32	55.0	clear
1027	0.75	4.25	250	5.53	5.36	23.5	390.1	0.15	8.34	43.6	clear
1030	0.75	5.00	250	5.53	5.35	23.4	382.3	0.12	5.98	33.2	clear
1033	0.75	5.75	250	5.53	5.34	23.5	373.4	0.11	3.08	25.0	clear
1036	0.75	6.50	250	5.53	5.33	23.5	368.9	0.13	2.01	19.0	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	Melissa Bennett /Tt	SAMPLER(S) SIGNATURES:	Melissa Bennett	SAMPLING INITIATED AT:	1040
SAMPLING ENDED AT:	1045				
PUMP OR TUBING DEPTH IN WELL (feet):	10	SAMPLE PUMP FLOW RATE (mL per	100	TUBING MATERIAL CODE:	Teflon
FIELD DECONTAMINATION:	N	FIELD-FILTERED:	N	FILTER SIZE:	DUPLICATE: N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	G	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0024	SAMPLE ID: **HMFN-MW0024-060.0-20201028** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 28 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 1.85	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 1.85		WELL SCREEN INTERVAL DEPTH (feet bls):	55-65
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 55	BOTTOM DEPTH (feet bls):	65

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 73) + 0.25 = 0.615 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 60	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 60	PURGING INITIATED AT: 1350	PURGING ENDED AT: 0920	TOTAL VOLUME PURGED 4.5		

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1400	1.50	1.50	250	1.86	7.45	26.2	3477	2.49	45.3	28.3	hazy
1403	0.75	2.25	250	1.86	7.4	25.5	3463	0.19	14.3	-36.9	clear
1406	0.75	3.00	250	2.86	7.41	25.3	3470	0.09	12.9	-54	clear
1409	0.75	3.75	250	3.86	7.42	25.2	3471	0.04	10.2	-63.3	clear
1412	0.75	4.50	250	4.86	7.43	25	3473	0.02	9.31	-69.7	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1420	SAMPLING ENDED AT: 925
PUMP OR TUBING DEPTH IN WELL (feet): 60	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0027	SAMPLE ID: **HMFN-MW0027-042.5.0-20201028** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 28 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.01	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.01		WELL SCREEN INTERVAL DEPTH (feet bls): 40-45	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls):	45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 53) + 0.25 = 0.515 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5		PURGING INITIATED AT: 850		PURGING ENDED AT: 0920		TOTAL VOLUME PURGED 7.5		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
0856	1.50	1.50	250	4.33	7.87	25.6	23.8	7.19	126.4	52.6	hazy
0859	0.75	2.25	250	4.33	7.35	24.7	3799	1.85	75.4	60.1	clear
0902	0.75	3.00	250	4.33	7.32	24.4	3777	1.76	25.3	59.0	clear
0905	0.75	3.75	250	4.33	7.31	24.2	3786	1.76	25.9	53.1	clear
0908	0.75	4.50	250	4.33	7.31	24.1	3791	1.78	13.1	48.0	clear
0911	0.75	5.25	250	4.33	7.31	24	3784	1.85	17.9	43.4	clear
0914	0.75	6.00	250	4.33	7.31	24.7	3785	1.89	6.4	40.1	clear
0917	0.75	6.75	250	4.33	7.31	24.7	3784	1.86	4.3	36.3	clear
0920	0.75	7.50	250	4.33	7.31	24.7	3784	2.03	2.2	33.9	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 920	SAMPLING ENDED AT: 925
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0029	SAMPLE ID: **HMFN-MW0029-015.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.36	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.36	WELL SCREEN INTERVAL DEPTH (feet bls): 10-20
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10 — BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 28) + 0.25 = 0.39 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1050	PURGING ENDED AT: 1113	TOTAL VOLUME PURGED 5.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1052	0.00	0.00	250	3.45	6.66	23.2	1913	0.29	60.9	-173.5	clear
1055	0.75	0.75	250	3.45	6.96	22.8	1986	0.15	34.5	-166	clear
1058	0.75	1.50	250	3.45	7.00	22.7	2010	0.12	29.4	-162.9	clear
1101	0.75	2.25	250	3.45	7.02	23	2012	0.1	19.7	-161.9	clear
1104	0.75	3.00	250	3.45	7.03	22.8	2000	0.09	10.4	-160.9	clear
1107	0.75	3.75	250	3.45	7.04	23	1992	0.08	14.9	-160.1	clear
1110	0.75	4.50	250	3.45	7.04	23	1976	0.07	10.3	-158.9	clear
1113	0.75	5.25	250	3.45	7.05	22.6	2003	0.07	9.6	-158.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1125
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N — FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0030	SAMPLE ID: **HMFN-MW0030-025.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.45	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.45	WELL SCREEN INTERVAL DEPTH (feet bls): 20-30
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20 / BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 38) + 0.25 = 0.44 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25			PURGING INITIATED AT: 1125		PURGING ENDED AT: 1136		TOTAL VOLUME PURGED 6	
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1135	2.50	2.50	250	3.53	3.52	28.7	3405	0.97	20.6	352.3	clear
1138	0.75	3.25	250	3.53	4.75	27.4	4350	0.22	17.2	263.8	clear
1141	0.75	4.00	250	3.53	5.05	27.5	4218	0.12	14.4	233.5	clear
1144	0.75	4.75	250	3.53	5.26	27.6	4186	0.1	11.8	212.1	clear
1147	0.75	5.50	250	3.53	5.40	27.7	4173	0.09	7.22	193.5	clear
1149	0.50	6.00	250	3.53	5.48	28	4175	0.10	4.19	180.3	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1155
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N / FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0031	SAMPLE ID: **HMFN-MW0031-035.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.40	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.4	WELL SCREEN INTERVAL DEPTH (feet bls): 30-40
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30 — BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 48) + 0.25 = 0.49 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1200	PURGING ENDED AT: 1223	TOTAL VOLUME PURGED 3.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1210	0.00	0.00	250	3.56	7.36	26.3	4494	5.67	42	161	clear
1213	0.75	0.75	250	3.56	7.36	26.5	4507	3.99	31.8	156.8	clear
1215	0.50	1.25	250	3.56	7.37	26.5	4511	1.53	29.4	143.1	clear
1217	0.50	1.75	250	3.56	7.36	26.5	4534	1.01	15.5	127.4	clear
1220	0.75	2.50	250	3.56	7.35	26.6	4601	0.95	11.3	114.9	clear
1223	0.75	3.25	250	3.56	7.37	26.5	4629	0.84	9.32	118.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1235
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N — FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0032	SAMPLE ID: **HMFN-MW0032-042.5.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.20	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.2	WELL SCREEN INTERVAL DEPTH (feet bls): 40-45
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40 / BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 53) + 0.25 = 0.515 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1230	PURGING ENDED AT: 1257	TOTAL VOLUME PURGED 6.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1230	0.00	0.00	250	3.45	7.44	26.9	4126	3.89	112.4	152.3	hazy
1233	0.75	0.75	250	3.45	7.42	26.2	4139	3.67	95.4	151.7	hazy
1236	0.75	1.50	250	3.45	7.39	26.7	4125	3.44	65.3	149.8	hazy
1239	0.75	2.25	250	3.45	7.39	26.6	4116	3.5	45.9	147.8	clear
1242	0.75	3.00	250	3.45	7.40	26.7	4125	3.65	33.1	144.8	clear
1245	0.75	3.75	250	3.45	7.39	27.3	4123	3.35	27.9	144.3	clear
1248	0.75	4.50	250	3.45	7.40	26.2	4111	3.87	23.4	140.7	clear
1251	0.75	5.25	250	3.45	7.39	25.9	4103	3.69	19.3	135.2	clear
1254	0.75	6.00	250	3.45	7.39	25.9	4107	3.78	17.2	130.1	clear
1257	0.75	6.75	250	3.45	7.40	25.9	4124	3.34	14.8	126.2	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1300	SAMPLING ENDED AT: 1305
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N / FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0033	SAMPLE ID:	**HMFN-MW0033-047.5.0-20201027**
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	
DATE:	10 27 2020		

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	3.25	CASING HEIGHT (feet als):	0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	3.25	WELL SCREEN INTERVAL DEPTH (feet bls):	45-50
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls):	50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 58) + 0.25 = 0.54 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	47.5	PURGING INITIATED AT: 1310	PURGING ENDED AT: 1335	TOTAL VOLUME PURGED 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1323	3.25	3.25	250	3.39	7.20	26.0	3968	0.17	21.3	-40.3	clear
1325	0.50	3.75	250	3.39	7.21	26.1	3978	0.15	12.8	-40.0	clear
1327	0.50	4.25	250	3.39	7.21	26.1	4019	0.10	10.9	-39.1	clear
1330	0.75	5.00	250	3.39	7.21	26.1	4028	0.10	3.45	-38.2	clear
1335	1.25	6.25	250	3.39	7.21	26.2	4035	0.09	5.42	-37.8	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1340	SAMPLING ENDED AT: 1345
PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0035	SAMPLE ID: **HMFN-MW0035-035.0-20201026** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 26 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.45	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.45	WELL SCREEN INTERVAL DEPTH (feet bls): 30-40
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30 / BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 48) + 0.25 = 0.49 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1550	PURGING ENDED AT: 1613	TOTAL VOLUME PURGED 5.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1552	0.50	0.50	250	3.59	3.00	30.4	29.0	5.15	45.7	359.8	clear
1555	0.75	1.25	250	3.59	3.10	30.8	25.2	4.41	30.9	353.7	clear
1558	0.75	2.00	250	3.59	6.59	26.4	4717	4.45	25.9	242	clear
1601	0.75	2.75	250	3.59	7.02	25.9	4627	4.24	21.7	247	clear
1604	0.75	3.50	250	3.59	7.14	25.8	4609	4.19	14.9	243.5	clear
1607	0.75	4.25	250	3.59	7.24	25.6	4639	4.11	12.0	241.3	clear
1610	0.75	5.00	250	3.59	7.28	25.5	4612	3.97	11.8	238.9	clear
1613	0.75	5.75	250	3.59	7.30	25.4	4621	3.92	10.7	236.8	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1620	SAMPLING ENDED AT: 1625
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N / FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0034	SAMPLE ID: **HMFN-MW0034-015.0-20201026** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 26 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.45	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.45		WELL SCREEN INTERVAL DEPTH (feet bls): 10-20	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls):	20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 28) + 0.25 = 0.39 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15		PURGING INITIATED AT: 1515		PURGING ENDED AT: 1531		TOTAL VOLUME PURGED 4.503		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1513	0.00	0.00	250	3.56	3.34	27.9	4502	3.50	32	261.3	clear
1516	0.75	0.75	250	3.56	2.84	28.2	5396	3.48	19.7	353.3	clear
1519	0.75	1.50	250	3.56	2.83	28.2	5343	0.83	11.3	363.3	clear
1522	0.75	2.25	250	3.56	2.83	28.1	5272	0.27	5.89	370	clear
1525	0.75	3.00	250	3.56	2.82	28	5254	0.18	3.4	373.3	clear
1528	0.75	3.75	250	3.56	2.82	28.1	5190	0.17	2.08	375.1	clear
1531	0.75	4.50	251	3.56	2.82	28.1	5138	0.17	1.74	376.3	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1540	SAMPLING ENDED AT: 1545
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0036	SAMPLE ID: **HMFN-MW0036-015.0-20201028** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 28 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 1.80	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 1.8		WELL SCREEN INTERVAL DEPTH (feet bls):	10-20
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls):	20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 28) + 0.25 = 0.39 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15		PURGING INITIATED AT: 1230		PURGING ENDED AT: 1258		TOTAL VOLUME PURGED 7		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1240	2.50	2.50	250	1.99	7.29	27	3812	1.49	56.9	-18.9	clear
1243	0.75	3.25	250	1.99	7.47	25.3	2757	5.99	35.8	34.0	clear
1246	0.75	4.00	250	1.99	6.34	26	3545	0.35	31.4	16.3	clear
1249	0.75	4.75	250	1.99	6.36	25.8	3544	0.21	17.3	10.9	clear
1252	0.75	5.50	250	1.99	6.41	25.9	3513	0.16	12.0	6.8	clear
1255	0.75	6.25	250	1.99	6.43	25.7	3498	0.14	4.9	4.2	clear
1258	0.75	7.00	250	1.99	6.45	25.8	3474	0.13	2.2	2.2	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1300	SAMPLING ENDED AT: 1305
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0037	SAMPLE ID: **HMFN-MW0037-010.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.15	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.15		WELL SCREEN INTERVAL DEPTH (feet bls): 5 -15	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls):	15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 23) + 0.25 = 0.365 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10		PURGING INITIATED AT: 940		PURGING ENDED AT: 0958		TOTAL VOLUME PURGED 4		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
0942	0.00	0.00	250	4.34	6.60	23.6	1401	1.52	54.8	-40.8	clear
0945	0.75	0.75	250	4.34	6.23	23.6	1585	0.15	33.1	-90.8	clear
0948	0.75	1.50	250	4.34	6.24	23.8	1592	0.14	28.9	-114.1	clear
0951	0.75	2.25	250	4.34	6.25	24	1599	0.12	20.7	-130.8	clear
954	0.75	3.00	250	4.34	6.25	24.1	1601	0.08	13.5	-143.2	clear
0956	0.50	3.50	250	4.34	6.24	24.3	1599	0.07	11.5	-152	clear
0958	0.50	4.00	250	4.34	6.24	24.5	1597	0.06	12.9	-155.4	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1005
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0038	SAMPLE ID: **HMFN-MW0038-020.0-20201027**	DATE: 10 27 2020
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	3.97	CASING HEIGHT (feet als):	0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	3.97	WELL SCREEN INTERVAL DEPTH (feet bls):	15-25
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls):	25

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 33) + 0.25 = 0.415 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	20	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	20	PURGING INITIATED AT:	1010	PURGING ENDED AT: 1029	TOTAL VOLUME PURGED 6.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1015	1.25	1.25	250	4.11	6.66	23.2	1913	0.29	66.9	-173.5	clear
1018	0.75	2.00	250	4.11	6.96	22.8	1986	0.15	34.7	-166.0	clear
1021	0.75	2.75	250	4.11	7.00	22.7	2010	0.12	31.4	-162.9	clear
1024	0.75	3.50	250	4.11	7.02	23	2012	0.10	29.8	-161.9	clear
1027	0.75	4.25	250	4.11	7.03	22.8	2000	0.09	10.4	-160.9	clear
1030	0.75	5.00	250	4.11	7.04	23	1992	0.08	11.9	-160.1	clear
1033	0.75	5.75	250	4.11	7.04	23	1976	0.07	10.3	-158.9	clear
1036	0.75	6.50	250	4.11	7.05	22.6	2003	0.07	10.0	-158.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1040	SAMPLING ENDED AT: 1045
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0039	SAMPLE ID: **HMFN-MW0039-035.0-20201026** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 26 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.45	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.45	WELL SCREEN INTERVAL DEPTH (feet bls): 30-40
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30 — BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 48) + 0.25 = 0.49 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35		PURGING INITIATED AT: 1345		PURGING ENDED AT: 1402		TOTAL VOLUME PURGED 4.25		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1347	0.50	0.50	250	3.52	7.35	25.3	3888	1.73	34	91.6	clear
1350	0.75	1.25	250	4.52	7.35	25.3	3896	1.67	25.9	96.3	clear
1353	0.75	2.00	250	5.52	7.34	25.2	3899	1.67	19.8	100.4	clear
1356	0.75	2.75	250	6.52	7.34	25.4	3884	1.75	12.2	103.6	clear
1359	0.75	3.50	250	7.52	7.34	25.5	3887	1.72	9.59	106.4	clear
1402	0.75	4.25	250	8.52	7.35	25.4	3912	1.87	8.56	109.1	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N — FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0040	SAMPLE ID: **HMFN-MW0040-042.5.0-20201026**	DATE: 10 26 2020
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	3.45	CASING HEIGHT (feet als):	0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	3.45	WELL SCREEN INTERVAL DEPTH (feet bls):	40-45
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls):	45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 53) + 0.25 = 0.515 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	42.5	PURGING INITIATED AT:	1310	PURGING ENDED AT: 1336	TOTAL VOLUME PURGED 5.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1312	0.50	0.50	250	3.50	7.2	27.2	2974	4.41	89.2	197.7	hazy
1315	0.75	1.25	250	3.51	7.13	27	2807	2.35	40.8	199.2	clear
1318	0.75	2.00	250	3.52	7.09	26.5	2711	1.78	31.5	198.3	clear
1321	0.75	2.75	250	3.52	7.07	26.3	2759	1.14	23.6	163.3	clear
1324	0.75	3.50	250	3.52	7.05	26.1	3133	0.61	19.8	112.7	clear
1327	0.75	4.25	250	3.52	7.06	26	3239	0.42	8.7	89.7	clear
1330	0.75	5.00	250	3.52	7.09	26.1	3284	0.62	7.3	78.1	clear
1333	0.75	5.75	250	3.52	7.1	26.2	3282	0.5	5.6	71.7	clear
1336	0.00	5.75	250	3.52	7.09	26.2	3283	0.47	4.6	66.4	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1340	SAMPLING ENDED AT: 1345
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0041	SAMPLE ID: **HMFN-MW0041-035.0-20201028** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 28 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.70	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 2.7	WELL SCREEN INTERVAL DEPTH (feet bls): 30-40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls):	40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 48) + 0.25 = 0.49 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1050	PURGING ENDED AT: 1117	TOTAL VOLUME PURGED 6.75	

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1050	0.00	0.00	250	2.89	5.69	28	3.3	6.48	51.9	73.7	Clear
1053	0.75	0.75	250	2.89	7.25	28.3	4122	3.71	31.9	59.7	Clear
1056	0.75	1.50	250	2.89	7.41	29.1	4178	3.51	14	56.9	Clear
1059	0.75	2.25	250	2.89	7.36	29.7	4173	2.05	8.98	56.2	Clear
1102	0.75	3.00	250	2.89	7.36	29.5	4174	1.96	6.32	56.5	Clear
1105	0.75	3.75	250	2.89	7.36	29.5	4165	1.64	4.34	56.6	Clear
1108	0.75	4.50	250	2.89	7.34	29.5	4172	1.25	3.98	55.8	Clear
1111	0.75	5.25	250	2.89	7.33	29.6	4170	1.13	1.08	55.7	Clear
1114	0.75	6.00	250	2.89	7.35	28.5	4194	2.08	0.81	56.6	Clear
1117	0.75	6.75	250	2.89	7.33	29	4164	1.9	0.87	56.5	Clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1125
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center, Florida
LOCATION ID:	MW0042	SAMPLE ID: **HMFN-MW0042-042.5.0-20201028**	DATE: 10 28 2020
		Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen	

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	2.66	CASING HEIGHT (feet als):	0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	2.66	WELL SCREEN INTERVAL DEPTH (feet bls):	40-45
WELL DIAMETER (inches):	1"	TUBING DIAMETER (inches):	3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls):	45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 53) + 0.25 = 0.515 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	42.5	PURGING INITIATED AT: 1130	PURGING ENDED AT: 1149	TOTAL VOLUME PURGED 4.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1140	2.50	2.50	250	2.74	7.41	29.1	4178	2.51	23.9	56.9	Clear
1143	0.75	3.25	250	2.74	7.38	29.7	4173	0.45	12.4	56.2	Clear
1146	0.75	4.00	250	2.74	7.38	29.5	4174	0.40	9.80	56.5	Clear
1149	0.75	4.75	250	2.74	7.38	29.5	4165	0.36	8.30	56.6	Clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1200	SAMPLING ENDED AT: 1205
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0043	SAMPLE ID: **HMFN-MW0043-035.0-20201026** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 26 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.45	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.45		WELL SCREEN INTERVAL DEPTH (feet bls): 30-40	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls):	40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 48) + 0.25 = 0.49 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35		PURGING INITIATED AT: 1410		PURGING ENDED AT: 1430		TOTAL VOLUME PURGED 5		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR
1415	1.25	0.00	250	3.50	7.92	26.3	3740	4.88	28	131.9	clear
1418	0.75	0.75	250	3.51	7.4	26.1	3704	4.02	20.7	137.5	clear
1421	0.75	1.50	250	3.52	7.39	26.5	3657	3.57	18.3	132.2	clear
1424	0.75	2.25	250	3.52	7.39	26.5	3621	3.48	14.2	124.1	clear
1427	0.75	3.00	250	4.52	7.38	26.5	3600	3.46	12.8	113.7	clear
1430	0.75	3.75	250	5.52	7.4	26.4	3610	3.31	9.8	115.3	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1435	SAMPLING ENDED AT: 1440
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0044	SAMPLE ID: **HMFN-MW0044-042.5.0-20201026** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 26 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.45	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.45	WELL SCREEN INTERVAL DEPTH (feet bls): 40-45
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40 / BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 53) + 0.25 = 0.515 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5			PURGING INITIATED AT: 1440		PURGING ENDED AT: 1508		TOTAL VOLUME PURGED 7.003	
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
1441	0.25	0.00	250	3.52	6.98	26.3	4221	4.28	89.8	98.5	clear
1444	0.75	0.75	250	3.52	6.98	26.3	4227	4.32	63.8	87.9	clear
1447	0.75	1.50	250	3.52	6.98	26.1	4217	4.36	40.9	79.8	clear
1450	0.75	2.25	250	3.52	6.98	26.1	4215	4.39	32.8	73.4	clear
1453	0.75	3.00	250	3.52	6.98	26	4215	4.34	21.8	68.1	clear
1456	0.75	3.75	250	3.52	6.98	25.9	4201	4.27	17.9	63.3	clear
1459	0.75	4.50	251	3.52	6.99	25.9	4229	3.08	12.0	61.1	clear
1502	0.75	5.25	252	3.52	7.67	26.3	35	3.95	9.80	75.3	clear
1505	0.75	6.00	253	3.52	7.77	26.3	47.9	4.03	8.09	88.7	clear
1508	0.75	6.75	254	3.52	7.80	26.5	45.9	4.02	7.11	99.2	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1505
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N / FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0045	SAMPLE ID: **HMFN-MW0045-030.0-20201028** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 28 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.85	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.85		WELL SCREEN INTERVAL DEPTH (feet bls): 25-35	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls):	35

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 43) + 0.25 = 0.465 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30			FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30		PURGING INITIATED AT: 810		PURGING ENDED AT: 0837		TOTAL VOLUME PURGED 6.75		
TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
0819	2.25	2.25	250	4.90	7.59	23.3	3552	8.06	34.4	268.6	clear
0822	0.75	3.00	250	4.90	7.20	23.7	4248	1.31	29.8	181.3	clear
0825	0.75	3.75	250	4.90	7.22	23.6	4284	0.97	18	65.4	clear
0828	0.75	4.50	250	4.90	7.23	23.6	4288	0.91	12.8	-12.0	clear
0831	0.75	5.25	250	4.90	7.23	23.6	4278	0.9	10.9	-44.8	clear
0834	0.75	6.00	250	4.90	7.22	23.6	4272	0.9	4.87	-56.0	clear
0837	0.75	6.75	250	4.90	7.22	23.7	4269	0.92	2.88	-61.0	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 845	SAMPLING ENDED AT: 850
PUMP OR TUBING DEPTH IN WELL (feet): 30	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0046	SAMPLE ID: **HMFN-MW0046-015.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.06	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.06		WELL SCREEN INTERVAL DEPTH (feet bls): 10-20
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 28) + 0.25 = 0.39 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 830	PURGING ENDED AT: 0857	TOTAL VOLUME PURGED 5.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
0836	0.00	0.00	250	4.15	7.30	23.4	1464	6.5	34.8	223.0	clear
0839	0.75	0.75	250	4.15	7.12	23.5	1399	2.9	20.8	222.5	clear
0842	0.75	1.50	250	4.15	7.05	23.6	1810	1.12	13.8	94.0	clear
0845	0.75	2.25	250	4.15	7.04	23.5	1937	0.46	12.0	42.9	clear
0848	0.75	3.00	250	4.15	7.04	23.4	1925	0.30	19.7	22.3	clear
0851	0.75	3.75	250	4.15	7.04	23.3	1924	0.23	16.7	10.1	clear
0854	0.75	4.50	250	4.15	7.04	23.4	1924	0.19	12.6	2.6	clear
0857	0.75	5.25	250	4.15	7.04	23.5	1924	0.19	13.0	-1.9	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 900	SAMPLING ENDED AT: 905
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech / FDEP Groundwater Sampling Sheet

SITE NAME: HMFN		SITE LOCATION: Kennedy Space Center, Florida	
LOCATION ID: MW0047	SAMPLE ID: **HMFN-MW0047-025.0-20201027** Sample depth (ddd.d) = (bottom of screen - Top depth) - 0.5xbottom of screen		DATE: 10 27 2020

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.94	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.94	WELL SCREEN INTERVAL DEPTH (feet bls): 20-30
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 3/16"	PURGE PUMP TYPE: PP	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20 — BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

(-) x = Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0 + (0.005 x 38) + 0.25 = 0.44 Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 905	PURGING ENDED AT: 0925	TOTAL VOLUME PURGED 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	Color
0910	0.00	0.00	250	4.38	7.07	23.6	1484	1.62	54.4	53.6	hazy
0913	0.75	0.75	250	4.38	7.02	23.7	1443	1.18	34	64.9	clear
0916	0.75	1.50	250	4.38	7.00	22.9	1552	0.49	20.9	42.3	clear
0919	0.75	2.25	250	4.38	7.00	22.8	1575	0.25	18.4	14.9	clear
0922	0.75	3.00	250	4.38	7.01	23.1	1577	0.2	14.3	9.0	clear
0925	0.75	3.75	250	4.38	7.03	23.2	1580	0.47	12.9	8.0	clear

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /Tt	SAMPLER(S) SIGNATURES: Melissa Bennett	SAMPLING INITIATED AT: 930	SAMPLING ENDED AT: 935
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP FLOW RATE (mL per 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: N	FIELD-FILTERED: N — FILTER SIZE:	DUPLICATE: N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
	3	CG	40mL	HCl	0	<2	VOC	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING APP = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump
EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

January 21, 2021

HMFN WL

112608982

Site CRCA

Objective WL CRCA/HMFN

Personnel MB, Melissa Bennett, T+ Env Engineer

Weather 62 OF sunny

PPE Level D

1000 MB onsite HMFN uncapping wells.

1200 MB collecting WLs.

1600 WL collection complete. See WL sheet for details. MB offsite.

1-28-21

HMFN

112608982

NOTE: samples labeled HMPN

Site HMFN

Objective GW Sampling

Personnel MB Melissa Bennett Tetra tech

Weather 57°F, windy

PPE Level D

1400 MB onsite HMFN. 57°F, windy, sunny.

1410 MB begin calibrating YSI, turbidity meter. (see calibration sheet)

1450 Calibration complete.

1500 MB initiate purge at MW 43. Well in good condition. Screened 30-40

1520 MB collect HMPN-MW0043-035.0-20210128 . 3 vials collected for VOC analysis

1530 MB initiate purge at MW 44 Well in good condition. Screened 40-50

1605 MB collect HMPN-MW0044-045.0-20210128 3 vials collected for VOC analysis

1610 MB initiate purge at 41

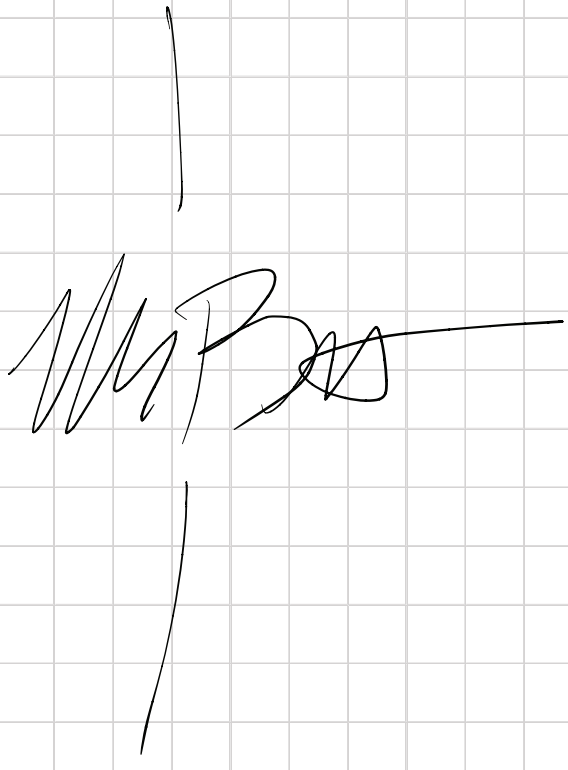
1645 HMPN-MW0041-035.0-20210128 . 3 vials collected for VOC analysis

1655 MB initiate purge at 42

1735 HMPN-MW0042-042.5-20210128 . 3 vials collected for VOC analysis

1750 MB cleaning / storing equipment.

1830 MB offsite



1-29-21

HMFN

112608982

NOTE: samples labeled HMPN

Site HMFN

Objective GW Sampling

Personnel MB Melissa Bennett Tetra Tech, Environmental Engineer

Weather 57°F, windy

PPE Level D

0700 MB onsite. Tailgate, gaiters, hydration, slips/trips, falls.

0720 MB calibrating, YSI, Camolle

0840 MB initiate purge at MW37

0920 HMPN-MW0037-010.0-20210129 collected by MB for VOC analysis (3 VOA vials)

0930 MB initiate purge at MW38

0955 HMPN-MW0038-020.0-20210129 collected by MB for VOC analysis

1005 MB initiate purge at MW46

1030 HMPN-MW0046-015.0-20210129 collected by MB for VOC analysis

1040 MB initiate purge at 47

1100 HMPN-MW0047-025.0-20210129 collected by MB for VOC analysis

1110 MB initiate purge 36

1130 HMPN-MW0036-015.0-20210129 collected by MB for VOC analysis

1140 MB initiate purge at MW11

1205 HMPN-MW0011-025.0-20210129 collected by MB for VOC analysis

1210 MB initiate purge MW29

1230 HMPN-MW0029-015.0-20210129 collected by MB for VOC analysis

1240 MB initiate purge at MW30

1300 HMPN-MW0030-025.0-20210129 collected by MB for VOC analysis

1310 MB initiate purge at MW31

1330 HMPN-MW0031-035.0-20210129 collected by MB for VOC analysis

1340 MB initiate purge at MW30

1400 HMPN-MW0032-042.5-20210129 collected by MB for VOC analysis

1410 MB initiate purge at MW33

1435 HMPN-MW0033-047.5-20210129 collected by MB for VOC analysis

1450 MB initiate purge at MW08

1515 HMPN-MW0008-025.0-20210129 collected by MB for VOC analysis

1-29-21

HMFN

112608982

1525 MB initiate purge at MW24

1545 HMPN-MW0024-060.0-20210129 collected by MB for VOC analysis

1600 MB initiate purge at MW35

1640 HMPN-MW0035-035.0-20210129 collected by MB for VOC analysis

1650 MB initiate purge at MW34

1730 HMPN-MW0034-015.0-20210129 collected by MB for VOC analysis

1800 MB cleaning / storing equipment. No Drum on pallet. IDW stored in labelled 5-gallon buckets + placed in HMFN trailer with equipment. Locked.

1840 MB offsite.

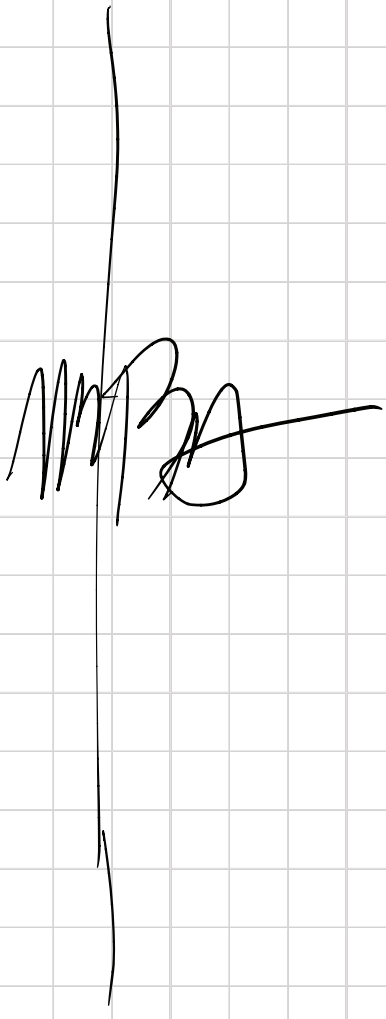
1-30-21

HMFN

1126089 82

Site HMFN
Objective GW Sampling
Personnel MB Melissa Bennett Tetra Tech, Environmental Engineer
Weather 57°F, windy
PPE Level D

0800 MB onsite. HMFN, moving equipment to make way for IDW drum in vehicle.
0830 MB to CC34 to gather drum.
0900 MB at CC34 loading drum into vehicle.
0930 MB at HMFN with 55-gallon drum + place on pallet. MB container all IDW from yesterday into drum, and label (DRUM# 222803)
1030 MB begin calibrating YSI, Lamotte.
1100 Call from home. Babysitter is sick, unable to find replacement. MB cleaning eqm
1110 MB offsite



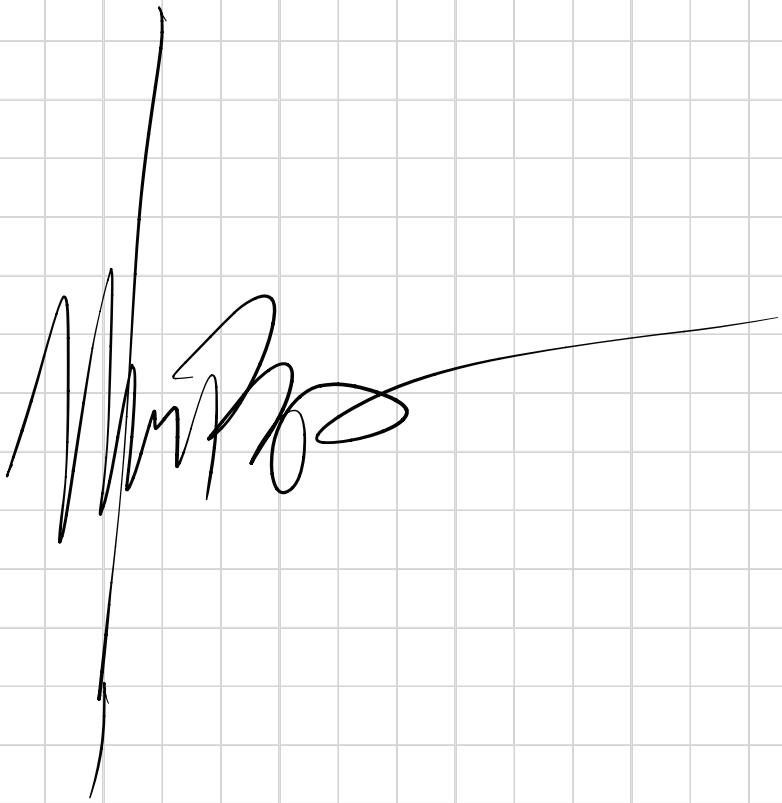
1-31-21

HMFN

112608982

Site HMFN
Objective GW Sampling
Personnel MB Melissa Bennett Tetra Tech, Environmental Engineer
Weather 53°F, sunny
PPE Level D

1240 MB onsite HMFN, gathering equipment
1300 MB calibrating YSI, Lamotte. Tailgate: slip/trip/Falls, biological hazard, heat
1400 MB initiate purge at MW39
1440 HMPN-MW0039-035.0-20210131 collected by MB for VOC analysis (3 VOA vials)
1500 MB initiate purge at MW40
1530 HMPN-MW0040-042.5-20210131 collected by MB for VOC analysis.
1540 MB initiate purge at MW09
1610 HMPN-MW0009-020.0-20210131 collected by MB for VOC analysis.
1620 MB initiate purge at MW04
1700 HMPN-MW0004-010.0-20210131 collected by MB for VOC analysis.
1720 MB repacking samples, so all are double bagged + in full contact with ice
1735 MB clean/store eqt.
1800 MB offsite



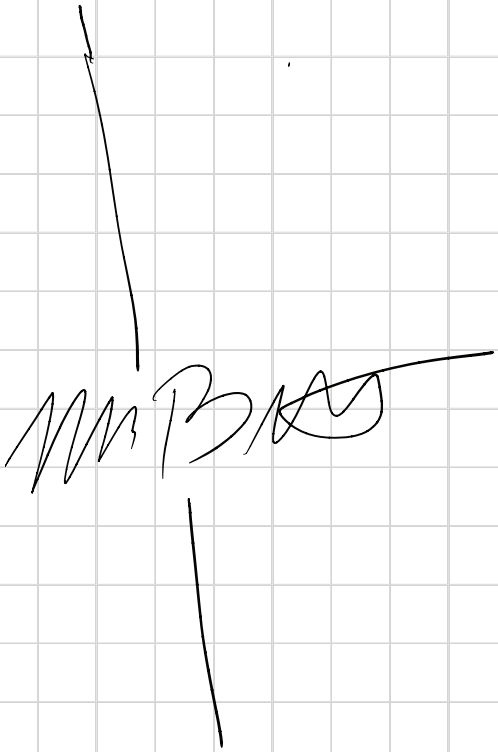
2-1-21

HMFN

1126O8982

Site HMFN
Objective GW Sampling
Personnel MB Melissa Bennett Tetra Tech, Environmental Engineer
Weather 62°F, windy
PPE Level D

0630 MB onsite HMFN. Gatering equipment.
0700 MB begin calibration of YSI, Lamotte.
0800 MB initiate purge at MW27
0830 HMPN-MW0027-042.5-20210201 collected by MB for VOC analysis (3 VOA vials)
0840 MB initiate purge at MW28
0915 HMPN-MW0028-047.5-20200201 collected by MB for VOC analysis
0925 MB initiate purge at MW16
0945 HMPN-MW0016-010.0-20210201 collected by MB for VOC analysis
1000 MB initiate purge at MW45
1030 HMPN-MW0045-030.0-20210201 collected by MB for VOC analysis
1040 MB initiate purge at MW02
1110 HMPN-MW0002-035.0-20210201 collected by MB for VOC analysis
1200 MB putting away equipment + cleaning equipment.
1300 MB offsite.



SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 43	SAMPLE ID: HPFN-MW0043-035.0-20210128 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-28-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.20	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40	
WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.334 Liters (42 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1500	PURGING ENDED AT: 1518	TOTAL VOLUME PURGED (Liters): 4.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1510	2.5	2.50	250	4.20	7.13	20.1	2460	2.76	25.6	291.2	clear
1512	0.5	3.00	250	4.20	7.14	20.5	2475	1.98	20.2	285.1	↓
1515	0.75	3.75	250	4.20	7.14	20.6	2480	1.87	19.2	284.6	
1518	0.75	4.50	250	4.20	7.14	20.6	2484	1.90	16.3	284.2	

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / KT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1520	SAMPLING ENDED AT: 1525
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 44	SAMPLE ID: HPFN-MW0044-045.0-20210128 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-28-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.02	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-50

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.354 Liters (52 x 002) + 0.25 = 0.354

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1530	PURGING ENDED AT: 1602	TOTAL VOLUME PURGED (Liters): 8.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1540	2.50	2.50	250	4.14	6.78	20.7	3877	1.07	114.0	216.8	hazy
1542	0.50	3.00	250	4.14	6.77	20.1	3879	1.03	99.3	216.9	hazy
1545	0.75	3.75	250	4.13	6.78	19.9	3879	0.99	74.8	217.0	mostly clear
1547	0.50	4.25	250	4.13	6.78	19.5	3880	0.97	69.7	217.6	clear
1550	0.75	5.00	250	4.14	6.78	19.6	3884	0.94	66.1	214.3	clear
1552	0.50	5.50	250	4.13	6.78	19.5	3886	0.94	48.9	214.9	clear
1555	0.75	6.25	250	4.13	6.79	19.5	3888	0.90	37.2	214.0	clear
1558	0.50	6.75	250	4.13	6.79	19.6	3890	0.89	26.7	216.3	clear
1600	0.75	7.50	250	4.14	6.79	19.6	3890	0.89	25.1	217.2	clear
1602	0.50	8.00	250	4.14	6.79	19.6	3893	0.88	24.6	217.9	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1605	SAMPLING ENDED AT: 1610
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 41	SAMPLE ID: HPFN-MW0041-0350-20210128 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-28-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.01	CASING HEIGHT (feet als): 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): V8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42 x .002) + .25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1610	PURGING ENDED AT: 1640	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1620	2.50	2.50	250	4.08	6.51	19.2	3888	0.99	20.7	214.3	clear
1625	1.25	3.75	250	4.08	6.62	19.4	3890	0.86	19.5	216.5	
1630	1.25	5.00	250	4.08	6.71	19.5	3890	0.84	18.2	216.0	
1635	1.25	6.25	250	4.08	6.78	19.5	3893	0.83	17.0	216.7	
1640	1.25	7.50	250	4.08	6.79	19.6	3893	0.83	16.4	217.9	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1645	SAMPLING ENDED AT: 1650

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HPFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 42	SAMPLE ID: HPFN-MW0042-0425-20210128 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-28-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.97	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.35 Liters (48 x .002) + .25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1655	PURGING ENDED AT: 1730	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1710	2.50	2.50	250	4.03	7.01	22.6	3901	1.59	40.1	208.1	mostly clear
1715	1.25	3.75	250	4.03	7.03	24.0	3903	1.58	26.9	208.6	"
1720	1.25	5.00	250	4.03	7.03	24.0	3901	1.56	25.6	209.1	"
1725	1.25	6.25	250	4.03	7.05	24.1	3903	1.54	22.3	209.4	"
1730	1.25	7.50	250	4.03	7.05	24.1	3905	1.54	24.3	209.5	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TF	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1735	SAMPLING ENDED AT: 1740
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS: high turb likely due to high DO - upon letting sample sit for 2 mins, turbidity was ≤ 12NTU. DO is high, but stable

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 37	SAMPLE ID: HPFN-MW0037-010 D-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.15	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/6	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.286 Liters (18 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0840	PURGING ENDED AT: 0915	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0850	2.50	2.50	250	5.28	6.25	16.5	1916	0.25	40.7	73.0	mostly clear
0855	1.25	3.75	250	5.28	6.27	16.0	1915	0.23	40.3	73.2	clear
0900	1.25	5.0	250	5.28	6.30	16.5	1910	0.22	33.9	73.9	clear
0905	1.25	6.25	250	5.28	6.30	16.8	1900	0.19	33.0	74.6	clear
0910	1.25	7.50	250	5.28	6.31	16.8	1905	0.18	32.6	74.8	clear
0915	1.25	8.75	250	5.28	6.31	16.9	1905	0.19	32.1	74.9	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0920	SAMPLING ENDED AT: 0915

PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 38	SAMPLE ID: HMPW-MW0038-020.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.00	CASING HEIGHT (feet als): 3'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 15-25

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/6	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): 25

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.306 Liters (28 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 0930	PURGING ENDED AT: 0950	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0940	2.50	2.50	250	5.11	6.68	17.0	1851	0.23	12.1	46.1	clear
0943	0.75	3.27	250	5.11	6.70	17.2	1855	0.22	10.6	45.0	"
0945	0.50	3.75	250	5.11	6.72	17.3	1856	0.21	9.81	45.3	"
0947	0.50	4.25	250	5.11	6.73	17.4	1857	0.19	8.89	45.0	"
0950	0.75	5.00	250	5.11	6.75	17.4	1858	0.19	8.71	45.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES: MBen	SAMPLING INITIATED AT: 0955	SAMPLING ENDED AT: 1000

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 46	SAMPLE ID: HPTN-MW0046-015.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.35	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.296 Liters (23x.002)+ 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1022	TOTAL VOLUME PURGED (Liters): 4.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1015	2.50	2.50	250	6.37	6.50	19.3	2487	0.51	11.8	48.1	clear
1017	0.50	3.0	250	6.38	6.55	19.1	2503	0.12	7.16	50.3	↓
1020	0.75	3.75	250	6.37	6.57	19.0	2500	0.12	8.13	51.6	↓
1022	0.50	4.25	250	6.38	6.59	19.1	2513	0.10	6.23	51.4	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /	SAMPLER(S) SIGNATURES: MB	SAMPLING INITIATED AT: 1030	SAMPLING ENDED AT: 1035

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 47	SAMPLE ID: HMPN-MW0047-025.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.35	CASING HEIGHT (feet als): 3.0'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): Y8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.316 Liters (33 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1055	TOTAL VOLUME PURGED (Liters): 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1050	2.50	2.50	250	5.48	6.55	19.2	2250	0.44	7.01	47.9	clear
1052	0.56	3.06	250	5.48	6.56	19.3	2251	0.42	5.31	48.1	clear
1055	0.75	3.75	250	5.48	6.57	19.4	2250	0.41	4.91	48.7	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1100	SAMPLING ENDED AT: 1105

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 36	SAMPLE ID: HMPN-MW0036-015.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-20

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.07	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20	
WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.290 Liters (23x.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1110	PURGING ENDED AT: 1125	TOTAL VOLUME PURGED (Liters): 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1120	2.50	2.50	250	3.13	6.25	22.4	3103	0.15	8.63	47.7	clear
1122	0.50	3.00	250	3.13	6.25	22.1	3111	0.14	5.95	48.0	clear
1125	0.75	3.75	250	3.13	6.25	22.2	3125	0.12	5.07	48.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1130	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 11	SAMPLE ID: HMPN-MW0011-025.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.91	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.316 Liters (33 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1140	PURGING ENDED AT: 1200	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1150	2.50	2.50	250	3.99	6.50	22.1	2950	0.24	21.0	51.0	clear
1152	0.50	3.00	250	3.99	6.47	22.5	2958	0.22	19.7	50.7	"
1155	0.75	3.75	250	3.99	6.45	22.6	2960	0.20	18.0	49.9	"
1157	0.50	4.25	250	3.99	6.44	22.7	2961	0.19	15.9	49.1	"
1200	0.75	5.00	250	3.99	6.44	22.7	2964	0.18	15.6	49.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1205	SAMPLING ENDED AT: 1210

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 29	SAMPLE ID: HMPN-mw0029-015.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-20

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.60	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.55	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.296 Liters (23 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1210	PURGING ENDED AT: 1225	TOTAL VOLUME PURGED (Liters): 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1220	2.50	2.50	250	3.65	3.06	23.5	3232	0.14	8.77	22.9	clear
1222	0.56	3.06	250	3.65	3.07	23.5	3230	0.13	6.50	21.30	clear
1225	0.75	3.75	250	3.65	3.09	23.5	3238	0.12	4.13	21.32	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /TT	SAMPLER(S) SIGNATURES: MBB	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1235

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 30	SAMPLE ID: HMPN-MW0030-025.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.10	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.15	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.316 Liters (33×0.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1240	PURGING ENDED AT: 1257	TOTAL VOLUME PURGED (Liters): 4.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1250	2.50	2.50	250	3.21	6.55	25.0	4347	5.30	25.7	76.3	clear
1252	0.50	3.00	250	3.21	6.55	25.1	4343	5.28	18.9	77.0	clear
1255	0.75	3.75	250	3.21	6.56	25.2	4350	5.30	17.6	77.2	clear
1257	0.75	4.50	250	3.21	6.57	25.2	4362	5.32	18.1	77.5	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES: MB	SAMPLING INITIATED AT: 1300	SAMPLING ENDED AT: 1305
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 31	SAMPLE ID: HMFN-MW0031-0350-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.15	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1310	PURGING ENDED AT: 1327	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1320	2.50	2.50	250	3.20	7.05	22.8	4779	5.01	19.7	176.0	clear
1322	0.50	3.00	250	3.20	7.02	23.1	4771	5.12	16.9	176.1	"
1325	0.75	3.75	250	3.20	7.02	23.2	4770	5.09	18.7	178.1	"
1327	0.75	4.50	250	3.20	7.04	23.3	4778	5.07	17.1	179.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1335

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 32	SAMPLE ID: HMPF-MW0032-042.5-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.01	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.346 Liters (48 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1340	PURGING ENDED AT: 1357	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1350	2.50	2.50	250	3.04	7.07	22.2	4180	3.51	11.7	163.9	clear
1352	0.50	3.00	250	3.04	7.08	22.4	4178	3.21	9.91	166.1	clear
1355	0.75	3.75	250	3.04	7.09	22.4	4173	3.19	8.63	170.7	clear
1357	0.50	4.25	250	3.04	7.09	22.5	4170	3.19	9.17	171.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett KT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1405

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 33	SAMPLE ID: HMPN-mw0033-047.5-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.10	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 45-50

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.3606 Liters (52 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1410	PURGING ENDED AT: 1430	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1420	2.50	2.50	250	3.21	3.87	24.8	3940	0.51	36.1	141.3	clear
1422	0.50	3.00	250	3.22	3.33	25.1	3951	0.27	23.7	155.7	↓
1425	0.75	3.75	250	3.22	3.97	25.6	3961	0.24	17.2	150.9	↓
1427	0.50	4.25	250	3.22	3.98	25.6	3938	0.21	18.5	152.1	↓
1430	0.75	5.00	250	3.22	3.99	22.5	3939	0.20	15.1	153.7	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1435	SAMPLING ENDED AT: 1440

PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 8	SAMPLE ID: HMPN-mw0008-025.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.31	CASING HEIGHT (feet als):- 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.310 Liters (33 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1450	PURGING ENDED AT: 1510	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1500	2.50	2.50	250	3.37	3.51	24.3	4662	0.36	32.7	158.7	slightly yellow
1502	0.50	3.00	250	3.37	3.49	24.7	4680	0.17	30.1	161.1	↓
1505	0.75	3.75	250	3.37	3.49	24.8	4687	0.15	26.3	164.3	
1507	0.50	4.25	250	3.37	3.47	24.9	4691	0.14	27.6	166.1	
1510	0.75	5.00	250	3.37	3.47	24.9	4692	0.13	26.4	167.4	

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TE	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1515	SAMPLING ENDED AT: 1520
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 24	SAMPLE ID: HMPN-MW0024-060.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.75	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 55-65

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 55	BOTTOM DEPTH (feet bls): 65

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.386 Liters (68 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 60	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 60	PURGING INITIATED AT: 1525	PURGING ENDED AT: 1542	TOTAL VOLUME PURGED (Liters): 4.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1535	2.50	2.50	250	3.81	6.91	23.0	3360	0.10	32.1	49.3	clear
1537	0.50	3.00	250	3.81	6.91	23.1	3366	0.07	19.4	50.1	"
1540	0.75	3.75	250	3.81	6.91	23.1	3371	0.06	17.6	50.7	"
1542	0.50	4.25	250	3.81	6.91	23.0	3382	0.05	12.1	50.7	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/ATT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1545	SAMPLING ENDED AT: 1550

PUMP OR TUBING DEPTH IN WELL (feet): 60	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 35	SAMPLE ID: HMPN-MW0035-035.0-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.22	CASING HEIGHT (feet als): 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42x.002) 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1600	PURGING ENDED AT: 1635	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1610	2.50	2.50	250	3.31	6.51	20.6	5103	0.99	39.3	70.3	clear
1615	1.25	3.75	250	3.31	6.66	21.9	5156	0.73	30.7	72.3	
1620	1.25	5.00	250	3.31	6.97	21.7	5155	0.55	22.3	80.7	
1625	1.25	6.25	250	3.31	6.98	22.6	5160	0.38	19.7	81.5	
1630	1.25	7.50	250	3.31	6.99	22.7	5167	0.35	17.0	86.0	
1635	1.25	8.75	250	3.31	7.00	22.7	5166	0.34	17.3	86.3	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett KT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1640	SAMPLING ENDED AT: 1645

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 34	SAMPLE ID: HMPN-MW0034-015.0-20211029 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.07	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.290 Liters (23×0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1650	PURGING ENDED AT: 1725	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1700	2.50	2.50	250	4.09	2.40	22.5	4027	0.59	45.1	198.1	clear
1705	1.25	3.75	250	4.11	2.35	22.8	4034	0.47	34.7	201.3	
1710	1.25	5.00	250	4.11	2.33	23.0	4037	0.41	29.2	204.0	
1715	1.25	6.25	250	4.11	2.29	23.1	4043	0.22	24.7	205.1	
1720	1.25	7.50	250	4.11	2.29	23.1	4040	0.19	22.1	205.3	
1725	1.25	8.75	250	4.11	2.58	23.3	4050	0.18	21.3	205.5	

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Brandt / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1730	SAMPLING ENDED AT: 1735

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 39	SAMPLE ID: HMPN-mw0039-035.0-20210131 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-31-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.00	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42×0.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1400	PURGING ENDED AT: 1435	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1420	2.50	2.50	250	5.11	6.97	23.5	4068	0.97	21.3	275.6	clear
1425	1.25	3.75	250	5.11	6.98	23.8	4070	0.74	12.7	277.3	"
1430	1.25	5.00	250	5.11	7.00	23.8	4077	0.72	10.3	278.1	"
1435	1.25	6.25	250	5.11	7.00	23.9	4075	0.69	8.01	278.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1440	SAMPLING ENDED AT: 1445

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 40	SAMPLE ID: HMPN-mw0040-0425-20210131 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-31-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.14	CASING HEIGHT (feet als): 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.35 Liters (48 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1500	PURGING ENDED AT: 1520	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1510	2.50	2.50	250	5.25	6.83	25.5	4289	0.23	27.3	275.0	clear
1515	1.25	3.75	250	5.25	6.91	25.3	4299	0.19	15.1	273.1	"
1520	1.25	5.00	250	5.25	6.91	25.2	4291	0.18	13.8	270.6	"
1525	1.25	6.25	250	5.26	6.94	25.1	4292	0.17	11.3	271.3	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1530	SAMPLING ENDED AT: 1535

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 9	SAMPLE ID: HMPN-MW0009-020.0-20210131 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-31-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.81	CASING HEIGHT (feet als): ~0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.308 Liters (28 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1540	PURGING ENDED AT: 1605	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1550	2.50	2.50	250	4.91	6.81	23.7	4943	1.36	50.1	264.1	clear
1555	1.25	3.75	250	4.92	6.90	23.7	4951	1.29	36.3	266.0	clear
1600	1.25	5.00	250	4.92	6.92	23.8	4958	1.33	33.7	267.1	clear
1605	1.25	6.25	250	4.92	6.93	23.9	4961	1.29	32.1	267.5	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1610	SAMPLING ENDED AT: 1615

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMPN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 4	SAMPLE ID: HMPN-mw0004-010.0-20210131 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-31-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.01	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.286 Liters (18 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1620	PURGING ENDED AT: 1650	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1630	2.50	2.50	250	3.11	3.28	21.9	2630	0.69	66.4	212.3	clear
1635	1.25	3.75	250	3.11	3.29	22.0	2641	0.55	59.7	215.2	clear
1640	1.25	5.00	250	3.11	3.31	22.3	2640	0.45	50.3	215.3	clear
1645	1.25	6.25	250	3.11	3.33	22.5	2641	0.41	46.1	216.5	clear
1650	1.25	7.50	250	3.11	3.37	22.5	2644	0.43	47.3	216.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1700	SAMPLING ENDED AT: 1705
PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 27	SAMPLE ID: HMPN-mw0027-0425-20210201 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 2-1-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.81	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.346 Liters (48 x.002)+ 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 0800	PURGING ENDED AT: 0852	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0810	2.50	2.50	250	5.88	6.71	21.5	3890	1.11	223	297.1	clear
0815	1.25	3.75	250	5.88	6.71	21.8	3894	0.92	19.7	298.6	"
0820	1.25	5.00	250	5.88	6.72	21.8	3891	0.89	17.3	301.1	"
0825	1.25	6.25	250	5.88	6.73	21.9	3894	0.87	18.1	300.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett ITA	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0830	SAMPLING ENDED AT: 0835
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 28	SAMPLE ID: HMPN-MW0028-0475-20200201 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 2-1-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.21	CASING HEIGHT (feet als): 3'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 2.21	WELL SCREEN INTERVAL DEPTH (feet bls): to 45-50

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.35 Liters (50 x .002)+.025

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 0840	PURGING ENDED AT: 0910	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0850	2.50	2.50	250	5.30	6.01	21.3	3811	0.59	29.3	214.2	clear
0855	1.25	3.75	250	5.30	6.51	21.5	3950	0.52	26.0	215.3	clear
0900	1.25	5.00	250	5.30	6.62	21.7	3960	0.47	26.3	218.3	clear
0905	1.25	6.25	250	5.30	6.73	21.8	3971	0.44	25.7	218.1	clear
0910	1.25	7.50	250	5.30	6.70	21.8	3976	0.43	24.1	219.6	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES: MMBA	SAMPLING INITIATED AT: 0915	SAMPLING ENDED AT: 0920

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: KMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 16	SAMPLE ID: KMPN-MW0016-010.0-20210201 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 2-1-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.15	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): Y8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.280 Liters (1 8 + 0.003 4 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0925	PURGING ENDED AT: 0940	TOTAL VOLUME PURGED (Liters): 3.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0930	1.25	1.25	250	7.20	3.80	17.9	561	0.41	14.7	211.7	clear
0935	1.25	2.50	250	7.20	3.81	17.9	572	0.33	15.1	217.6	1
0940	1.25	3.75	250	7.20	3.70	18.1	573	0.32	17.6	210.5	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/KF	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0945	SAMPLING ENDED AT: 0950
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 45	SAMPLE ID: HMDN-mw0045-030.0-20210201 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 2-1-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.81	CASING HEIGHT (feet als): 3'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 25-35

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8"	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): 35

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (40 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1000	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1010	2.50	2.50	250	4.90	6.63	22.3	4897	0.27	15.3	227.6	clear
1015	1.25	3.75	250	4.90	6.55	21.5	4905	0.20	10.7	221.7	
1020	1.25	5.00	250	4.90	6.50	21.6	4913	0.18	7.19	223.1	
1025	1.25	6.25	250	4.90	6.51	21.7	4922	0.17	6.13	224.2	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /TF	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1030	SAMPLING ENDED AT: 1035

PUMP OR TUBING DEPTH IN WELL (feet): 30	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 2	SAMPLE ID: HMPN-MW0002-035.0-20210201 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 2-1-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 0.81	CASING HEIGHT (feet als): −0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30 - 40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.33 Liters (42×0.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1105	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1050	2.50	2.50	250	0.91	6.15	19.3	4790	1.11	9.11	193.1	Clear
1055	1.25	3.75	250	0.91	6.15	19.6	4797	0.47	4.36	191.7	↓
1100	1.25	5.00	250	0.91	6.15	19.6	4801	0.45	2.15	196.1	↓
1105	1.25	6.25	250	0.91	6.15	19.7	4813	0.43	1.13	197.1	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1110	SAMPLING ENDED AT: 1115

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID:	SAMPLE ID: Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE:

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls):

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

_____Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech EGS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: HMFN
Project No.: 112G08982
Location: Kennedy Space Center (KSC), Florida
Personnel: Melissa Bennett
Weather Conditions: Overcast
Measuring Device: Heron Skinny Dipper
Tidally Influenced: Yes ____ No __X__
Remarks:

Well or Piezometer (HMFN-)	Date	Time	Elevation of Reference Point (feet)*	Screened Interval (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW0002	1/21/2021		0.81	30 to 40		0		
MW0004	1/21/2021		3.41	5 to 15		0		
MW0008	1/21/2021		5.69	20 to 30		0		
MW0009	1/21/2021		4.81	5 to 15		0		
MW0011	1/21/2021		3.50	20 to 30		0		
MW0024	1/21/2021		3.75	55 to 65		0		
MW0027	1/21/2021		5.58	40 to 45		0		
MW0028	1/21/2021		5.37	45 to 50		0		
MW0029	1/21/2021		4.98	10 to 20		0		
MW0030	1/21/2021		5.11	20 to 30		0		
MW0031	1/21/2021		5.02	30 to 40		0		
MW0032	1/21/2021		4.85	40 to 45		0		
MW0033	1/21/2021		4.89	45 to 50		0		
MW0034	1/21/2021		5.52	10 to 20		0		
MW0035	1/21/2021		5.50	30 to 40		0		
MW0036	1/21/2021		3.28	10 to 20		0		
MW0037	1/21/2021		5.15	5 to 15		0		
MW0038	1/21/2021		5.00	15 to 25		0		
MW0039	1/21/2021		5.04	30 to 40		0		
MW0040	1/21/2021		5.16	40 to 45		0		
MW0041	1/21/2021		4.36	30 to 40		0		
MW0042	1/21/2021		4.37	40 to 45		0		
MW0043	1/21/2021		4.19	30 to 40		0		
MW0044	1/21/2021		4.17	40 to 45		0		
MW0045	1/21/2021		6.47	25 to 35		0		
MW0046	1/21/2021		5.35	10 to 20		0		
MW0047	1/21/2021		5.35	20 to 30		0		

* All measurements to the nearest 0.01 foot

Tetra Tech, Inc.

CHAIN OF CUSTODY | **NUMBER** No. 2377 | **PAGE** 2 **OF** ____

PROJECT NO: 112G08982	**FACILITY:** HMFN	**PROJECT MANAGER** Chris Hook	**PHONE NUMBER** 412-921-8790	**LABORATORY NAME AND CONTACT:** ENCO
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Melissa Bennett	**PHONE NUMBER** 321-914-9394	**ADDRESS**
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Orlando, FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2021)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: VOC	COMMENTS
4/20	1020	HMPN-MW0046-015.0-20210421	46	10	20	GW	G	3	X			
4/21	1050	HMPN-MW0038-020.0-20210421	38	15	25			3	X			
4/21	1130	HMPN-MW0037-010.0-20210421	37	5	15			3	X			
4/21	1210	HMPN-MW0027-042.5-20210421	27	40	45			3	X			
4/21	1250	HMPN-MW0028-047.5-20210421	28	45	50			3	X			
4/21	1325	HMPN-MW0004-010.0-20210421	4	5	15			3	X			
4/21	1405	HMPN-MW0016-010.0-20210421	16	5	15			3	X			
4/21	1450	HMPN-MW0045-030.0-20210421	45	25	35			3	X			
4/22	1140	HMPN-MW0024-060.0-20210421	24	55	65			3	X			
4/22	1220	HMPN-MW0002-035.0-20210422	2	30	40			3	X			
4/22	1255	HMPN-MW0008-025.0-20210422	8	20	30			3	X			
4/22	1345	HMPN-MW0042-042.5-20210422	42	40	45			3	X			
4/22	1445	HMPN-MW0043-035.0-20210422	43	30	40			3	X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY			1. RECEIVED BY		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R

Tetra Tech, Inc.

CHAIN OF CUSTODY | **NUMBER** No. 2376 | **PAGE** 1 **OF** _____

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	HMPN HMFN	Chris Hook	412-921-8790	ENCO
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Melissa Bennett	**PHONE NUMBER** 321-914-9394	**ADDRESS**
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Orlando, FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: VOC	COMMENTS
									G	HCl		
4/9	1030	HMPN-MW0040-042.5-20210419	40	40	45	GW	G	3			X	
4/19	1110	HMPN-MW0039-035.0-20210419	39	30	40	GW	G	3			X	
4/19	1200	HMPN-MW0041-035.0-20210419	41	30	40	GW	G	3			X	
4/19	1250	HMPN-MW0044-045.0-20210419	44	40	50	GW	G	3			X	
4/19	1410	HMPN-MW0030-025.0-20210419	30	20	30	GW	G	3			X	
4/19	1545	HMPN-MW0031-035.0-20210419	31	30	40	GW	G	3			X	
4/19	1620	HMPN-MW0029-015.0-20210419	29	10	20	GW	G	3			X	
4/20	1125	HMPN-MW0036-015.0-20210420 ~~20210419~~ mms	36	10	20	GW	G	3			X	
4/20	1200	HMPN-MW0011-025.0-20210420	11	20	30	GW	G	3			X	
4/20	1245	HMPN-MW0009-020.0-20210420	9	15	25	GW	G	3			X	
4/20	1330	HMPN-MW0033-047.5-20210420	33	45	50	GW	G	3			X	
4/20	1520	HMPN-MW0032-042.5-20210420	32	40	45	GW	G	3			X	
4/21	0940	HMPN-MW0047-025.0-20210421	47	20	30	GW	G	3			X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY			1. RECEIVED BY		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

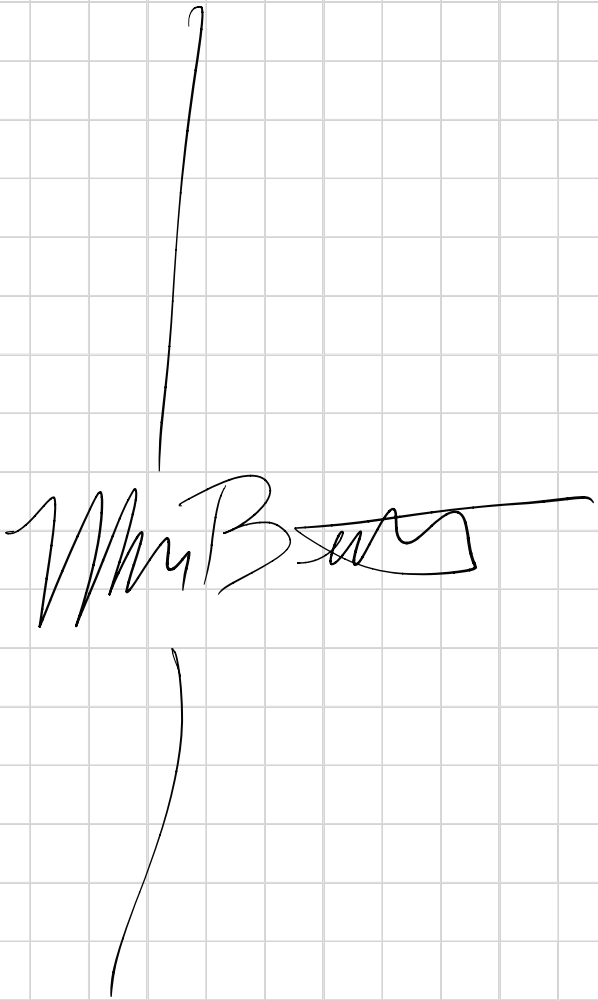
DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

April 16, 2021

HMFN WL

Site	HMF N
Objective	WL collection
Personnel	Melissa Bennett, MB, Tetra tech, Env. Engineer.
PPE	Level D
Weather	Sunny 82 °F

0845	MB onsite gathering paperwork + uncapping wells.
0900	Most wells need to be bailed out. black widow in MW24
1100	all wells uncapped waiting 30 mins for wells to equalize
1130	MB begin collecting WLs
1300	MB finish collecting WLs. offsite to collect YSI + Lamotte. Calibrate offsite
1400	calibration complete MB to HMFN.
1420	MB onsite HMFN. begin purge at MW30
1440	heavy rain. not forecasted to stop until tonight. MB packing up
1500	MB offsite



April 19, 2021

HMFN GW

Site HMF N
Objective GW Sampling
Personnel Melissa Bennett, MB, Tetra tech, Env. Engineer.
PPE Level D
Weather clouds, scatted showers

0800 MB onsite CRCA phase II.
0830 phase II lifted. MB gathering materials.
0845 MB to HMFN to calibrate YSI, Lamotte
0930 calibration complete. Phase I. MB organize vehicle for sampling in the rain.
1000 MB initiate purge at MW40
1030 MB collect HPFN-MW0040-042.5-20210419
1040 MB initiate purge at MW39
1110 MB collect HPFN-MW0039-035.0-20210419
1120 MB uncap MW44, overflows with bubbles (did same during WL collection) MB leaves uncapped to lower DO before begining purge. MB install tubing at MW41.
1135 MB initiate purge at MW41
1200 MB collect HMPN-MW0041-035.0-20210419
1215 MB initiate purge at MW44
1245 Phase I
1250 MB collect HMPN-MW0044-045.0-20210419
1300 heavy rain
1315 rain lets up momentarily. MB initiate purge at MW30
1410 MB collect HMPN-MW0030-025.0-20210419
1415 MB initiate purge at MW31
1545 MB collect HMPN-MW0031-035.0-20210419 very high DO!
1550 MB initiate purge at MW29
1620 MB collect HMPN-MW0029-015.0-20210419
1630 MB cleaning equipment
1700 MB offsite

April 20, 2021

HMFN GW

Site HMF N
Objective GW Sampling
Personnel Melissa Bennett, MB, Tetra tech, Env. Engineer.
PPE Level D
Weather Thunderstorms,

0800 MB onsite. Phase II
1020 Phase II terminated. MB gathering equipment, containerizing IDW.
1035 MB calibrating equipment.
1100 MB initiate purge at MW 36
1125 MB collect HMPN-MW0036-015.0-20210420
1130 MB initiate purge at MW11
1200 MB collect HMPN-MW0011-025.0-20210420
1210 Rain begins. MB check lightning warning/watch. Okay.
1220 MB setup at MW0009 + begin purge
1245 MB collect HMPN-MW0009-020.0-20210420
1300 MB initiate purge at MW33. Heavy rain
1330 MB collect HMPN-MW0033-047.5-20210420
1335 rain intensifies. Not feasible to sample currently. Phase I.
1400 Phase II
1430 phare II terminated
1440 MB initiate purge at MW32
1520 MB collect HMPN-MW0032-042.5-20210420
1530 Phase II. MB putting away equipment.
1600 MB offsite

April 21, 2021

HMFN GW

Site — HMF N
Objective — GW Sampling
Personnel — Melissa Bennett, MB, Tetra tech, Env. Engineer.
PPE — Level D
Weather — cloudy 76- 84°F

0730 MB onsite
0740 MB gathering equipment + calibrating
0810 calibration complete
0830 MB containerizing IDW from yesterday
0845 MB mobe to MW47. repacking samples with fresh ice
0900 MB initial purge at MW47
0940 MB collect HMPN-MW0047-025.0-20210421
0950 MB initial purge at MW46. email ENCO + PM.
1020 MB collect HMPN-MW0046-015.0-20210421
1030 MB initiate purge at MW38
1050 MB collect HMPN-MW0038-020.0-20210421
1100 MB initiate purge at MW037
1130 MB collect HMPN-MW0037-010.0-20210421
1145 MB initiate purge at MW27
1210 MB collect HMPN-MW0027-042.5-20210421
1220 MB initiate purge at MW28
1250 MB collect HMPN-MW0028-047.5-20210421
1305 MB initiate purge at MW4.
1325 MB collect HMPN-MW0004-010.0-20210421
1340 MB initiate purge at MW10
1405 MB collect HMPN-MW0010-010.0-20210421
1420 MB initiate purge at MW45
1450 MB collect HMPN-MW0045-030.0-20210421
1500 MB initiate purge at MW34

Date 19, 20, 21

April 22, 2021 HMFN GW

Site HMF N / AOSB
Objective GW Sampling / Air Sampling / Drum Sampling.
Personnel Melissa Bennett, MB, Tetra tech, Env. Engineer.
PPE Level D
Weather Sunny 64°F-

0720 MB onsite AOSB preparing air canisters + paperwork
0740 Canniste- Serial # and Sample ID:

AMB01	JS-017
AMB02	JS-068
AMB03	JS-070
AMB04	JS-077
AMB05	JS-086

0819 MB set up AOSB-AMB01-20210422 -30 mm Hg, 64°F
0830 MB set up AOSB-AMB02-20210422 -30 mm Hg, 64°F
0833 MB set up AOSB-AMB03-20210422 -30 mm Hg, 64°F
0835 MB set up AOSB-AMB04-20210422 -30 mm Hg, 64°F
0837 MB set up AOSB-AMB05-20210422 -30 mm Hg, 64°F
0840 MB filling out COC for summas.
0855 MB setting up DRUM sampling
0900 AOSB-DRUM217977-20210422 collected for PFAS (Dan onsite)
0910 AOSB-DRUM217981-20210422 collected for PFAS
0915 AOSB-DRUM217974-20210422 collected for PFAS
0925 AOSB-DRUM217973-20210422 collected for PFAS
0935 AOSB-DRUM217971-20210422 collected for PFAS
0945 AOSB-DRUM217972-20210422 collected for PFAS.
0955 MB securing IDW and prepairing PFAS coc for GEL Labs.
1005 MB offsite AOSB to HMFN
1020 MB onsite HMFN, gathering equipment + containerizing IDW.
1045 MB calibrating YSI + Lamotte.
1100 Calibration complete, MB mobe to MW24
1105 MB initiate purge at MW24
1140 MB collect HMFN-MW0024- -20210422

1150 MB initiate purge at MW2
1220 MB collect HMPN-MW0002-035.0-20210422
1230 MB initiate purge at MW0008
1255 MB collect HMPN-MW0008-0.25 -20210422
1310 MB initiate purge at MW42 (install new tubing - HDPE + weekly call)
1345 MB collect HMPN-MW0042-042.5 - 20210422
1355 MB initiate purge at 43 (install new tubing - HDPE)
1445 MB collect HMPN-MW0043 -035.0-20210422
1450 MB to badging to meet ENCO courier — offsite.
1510 MB relinquish samples.
1515 MB to HMFN
1530 MB at HMFN, finishing cleaning of equipment and containerizing IDW.
1545 MB offsite to AOSB
1600 MB at AOSB.
1619 MB pick up AOSB-AMB01-20210422 - 0 mm Hg, 79 °F
1630 MB pickup AOSB-AMB02-20210422 - 4 mm Hg, 79 °F
1633 MB pick up AOSB-AMB03-20210422 - 2 mm Hg, 79 °F
1635 MB pickup AOSB-AMB04-20210422 - 0 mm Hg, 79 °F
1637 MB pickup AOSB-AMB05-20210422 - 4 mm Hg, 79 °F
1640 MB offsite

Tetra Tech NUS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: HMFN
Project No.: 112G08982
Location: Kennedy Space Center (KSC), Florida
Personnel: Melissa Bennett
Weather Conditions: Sunny
Measuring Device: Heron Skinny Dipper
Tidally Influenced: Yes ___ No __X__
Remarks:

Well or Piezometer (HMFN-)	Date	Time	Elevation of Reference Point (feet)*	Screened Interval (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW0002	4.44			30 to 40				
MW0004	5.48			5 to 15				
MW0008	8.05			20 to 30				
MW0009	7.35			5 to 15				
MW0011	4.27			20 to 30				
MW0016	6.57							
MW0024	3.98			55 to 65				
MW0027	7.71			40 to 45				
MW0028	6.58			45 to 50				
MW0029	7.49			10 to 20				
MW0030	7.56			20 to 30				
MW0031	7.35			30 to 40				
MW0032	7.13			40 to 45				
MW0033	7.12			45 to 50				
MW0034	7.95			10 to 20				
MW0035	7.88			30 to 40				
MW0036	4.96			10 to 20				
MW0037	5.85			5 to 15				
MW0038	5.73			15 to 25				
MW0039	6.85			30 to 40				
MW0040	6.90			40 to 45				
MW0041	6.44			30 to 40				
MW0042	6.54			40 to 45				
MW0043	6.18			30 to 40				
MW0044	6.11			40 to 45				
MW0045	8.56			25 to 35				
MW0046	6.20			10 to 20				
MW0047	6.10			20 to 30				
AD All WLs collected between 1100 and 1300, April 16 2021								

* All measurements to the nearest 0.01 foot

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 2	SAMPLE ID: HMPN-MW0002-035.0-20210422 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4.22.21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.54	CASING HEIGHT (feet als): −0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.59	WELL SCREEN INTERVAL DEPTH (feet bls): to 30 - 40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42×0.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1150	PURGING ENDED AT: 1215	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1200	2.50	2.50	250	3.57		25.6	4207	1.08	15.7	240.8	clear
1205	1.25	3.75	250	3.57		25.4	4205	1.07	11.3	240.7	↓
1210	1.25	5.00	250	3.57		25.3	4206	0.98	8.91	240.6	↓
1215	1.25	6.25	250	3.57	7.37	25.2	4206	0.97	8.67	240.1	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1220	SAMPLING ENDED AT: 1225

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMPN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 4	SAMPLE ID: HMPN-mw0004-010.0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.17	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.286 Liters (18 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1305	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1305	2.50	2.50	250	2.21	3.57	24.5	3411	0.61	4.71	318.2	clear
1310	1.25	3.75	250	2.21	3.56	24.7	3401	0.30	3.62	317.3	clear
1315	1.25	5.00	250	2.21	3.54	24.6	3404	0.24	1.01	315.9	clear
1320	1.25	6.25	250	2.21	3.54	24.7	3408	0.21	1.32	315.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1325	SAMPLING ENDED AT: 1330

PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 8	SAMPLE ID: HMFN-mw0008-025.0-20210422 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4.22.21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.50	CASING HEIGHT (feet als):- 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30	
WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.310 Liters (33 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1230	PURGING ENDED AT: 1250	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1240	2.50	2.50	250	3.56	6.08	25.2	4571	0.95	3.16	135.6	clear
1245	1.25	3.75	250	3.56	6.09	25.3	4580	0.89	1.96	136.0	↓
1250	1.25	5.00	250	3.56	6.09	25.4	4587	0.88	1.31	137.2	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TE	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1255	SAMPLING ENDED AT: 1300
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 9	SAMPLE ID: HMPN-MW0009-020.0-20210420 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-20-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.81	CASING HEIGHT (feet als): ~0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.308 Liters (28 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1220	PURGING ENDED AT: 1240	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1230	2.50	2.50	250	4.96	7.47	24.1	5300	4.60	15.0	251.3	clear
1235	1.25	3.75	250	4.96	7.47	24.1	5303	4.56	13.2	256.1	clear
1240	1.25	5.00	250	4.96	7.47	24.2	5312	4.55	11.3	257.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1245	SAMPLING ENDED AT: 1250

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 11	SAMPLE ID: HMPN-MW0011-025.0-20210420 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-20-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.91	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.316 Liters (33x.002) +0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1130	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1140	2.50	2.50	250	4.71	6.76	24.5	3993	0.31	20.1	222.4	clear
1142	0.50	3.00	250	4.71	6.76	24.2	3986	0.20	21.3	231.3	"
1145	0.75	3.75	250	4.71	6.76	24.5	3990	0.14	19.6	233.6	"
1147	0.50	4.25	250	4.71	6.75	24.4	3993	0.13	17.1	231.5	"
1150	0.75	5.00	250	4.71	6.75	24.5	3995	0.11	18.7	230.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1200	SAMPLING ENDED AT: 1205
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME:	HMFN	SITE LOCATION:	Kennedy Space Center	
LOCATION ID:	16	SAMPLE ID: HMPN-MW0016-010.0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)		DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.57	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): Y8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.280 Liters (1/8 + 0.0034 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT:	PURGING ENDED AT: 1340	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0930	1.25	1.25	250	6.66	3.36	21.7	1185	0.17	2.67	367.1	clear
0935	1.25	2.50	250	6.67	3.35	21.7	1190	0.14	1.31	368.6	"
0940	1.25	3.75	250	6.66	3.34	21.8	1194	0.10	0.56	369.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/KT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1405	SAMPLING ENDED AT: 1410

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 24	SAMPLE ID: HMPN-MW0024-060.0-20210422 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-22-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.75	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 55-65

WELL DIAMETER (inches): 2"	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 55	BOTTOM DEPTH (feet bls): 65

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.386 Liters (68 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 60	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 60	PURGING INITIATED AT: 1105	PURGING ENDED AT: 1135	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1115	2.50	2.50	250	3.81	7.35	24.8	4205	2.86	30.3	246.1	clear
1120	1.25	3.75	250	3.81	7.34	24.7	4205	2.81	25.1	246.2	"
1125	1.25	5.00	250	3.81	7.35	25.0	4204	2.70	20.9	246.3	"
1130	1.25	6.25	250	3.81	7.35	25.0	4205	2.65	20.3	246.1	"
1135	1.25	7.50	250	3.81	7.35	25.1	4206	2.63	19.1	246.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/AT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1140	SAMPLING ENDED AT: 1145
PUMP OR TUBING DEPTH IN WELL (feet): 60	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 27	SAMPLE ID: HMPN-MW0027-0425-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.17	CASING HEIGHT (feet als): 3'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.346 Liters (48 x.002)+ 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1145	PURGING ENDED AT: 1205	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1155	2.50	2.50	250	4.31	7.40	24.4	4109	2.77	2.36	95.1	clear
1200	1.25	3.75	250	4.31	7.39	24.5	4107	2.89	1.15	96.1	clear
1205	1.25	5.00	250	4.31	7.38	24.5	4101	2.87	0.91	96.8	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett ITT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1210	SAMPLING ENDED AT: 1215

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 28	SAMPLE ID: HMPN-MW0028-0475-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als): 3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 2.21	WELL SCREEN INTERVAL DEPTH (feet bls): to 45-50

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.35 Liters (50 x .0024) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 1220	PURGING ENDED AT: 1245	TOTAL VOLUME PURGED (Liters): 6.27

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1230	2.50	2.50	250	5.30	7.08	23.5	4150	0.79	15.0	42.3	clear
1235	1.25	3.75	250	5.30	7.08	23.8	4153	0.75	14.7	42.1	clear
1240	1.25	5.00	250	5.30	7.09	23.8	4154	0.69	10.1	42.1	clear
1245	1.25	6.25	250	5.30	7.09	23.9	4155	0.68	9.05	42.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES: MM/BA	SAMPLING INITIATED AT: 1250	SAMPLING ENDED AT: 1255

PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 29	SAMPLE ID: HMPN-MW0029-015.0-20210414 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-19-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.17	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.55	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.296 Liters (23 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1550	PURGING ENDED AT: 1615	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1600	2.50	2.50	250	5.28	3.43	26.6	4317	0.82	11.3	351.9	clear
1605	1.25	3.75	250	5.28	3.40	26.3	4431	0.77	8.61	357.6	clear
1610	1.25	5.00	250	5.28	3.39	26.1	4561	0.75	5.17	360.9	clear
1615	1.25	6.25	250	5.28	3.39	26.2	4565	0.72	3.69	362.8	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /TF	SAMPLER(S) SIGNATURES: MBB	SAMPLING INITIATED AT: 1620	SAMPLING ENDED AT: 1625

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 30	SAMPLE ID: HMPN-MW0030-025.0-20210419 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 04-19 21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.01	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 3.15	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.316 Liters (33×0.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1315	PURGING ENDED AT: 1355	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1340	2.50	2.50	250	5.16	7.36	25.2	5003	3.61	29.0	127.1	clear
1342	0.50	3.00	250	5.16	7.31	25.1	5017	3.69	25.6	128.0	clear
1345	0.75	3.75	250	5.10	7.33	25.3	5113	3.66	22.3	129.3	clear
1348	0.75	4.50	250	5.10	7.36	25.1	5201	3.50	14.1	130.7	clear
1350	0.50	5.00	250	5.10	7.37	25.1	5216	3.51	12.5	131.3	clear
1355	1.25	6.25	250	5.10	7.37	25.2	5269	3.42	11.2	136.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES: MB	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS: High DO

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 31	SAMPLE ID: HMFN-MW0031-0350-20210419 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-19-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.07	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1415	PURGING ENDED AT: 1540	TOTAL VOLUME PURGED (Liters): 20

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1440	6.25	6.25	250	3.20	6.31	24.0	3911	5.11	25.1	110.3	clear
1450	2.50	8.75	250	3.20	6.31	24.3	3931	4.63	22.7	113.1	
1500	2.50	11.25	250	3.20	6.31	24.2	3923	4.40	14.9	113.2	
1510	1.25	12.50	250	3.20	6.30	24.7	3915	4.57	13.8	120.1	
1515	1.25	13.75	250	3.20	6.25	24.3	3911	4.42	9.10	123.7	
1520	1.25	1500	250	3.20	6.20	24.5	3909	4.31	12.7	122.7	
1525	1.25	16.25	250	3.20	6.20	24.3	3900	4.39	11.3	125.1	
1530	1.25	17.50	250	3.20	6.19	24.6	3903	4.39	5.61	126.3	
1535	1.25	18.75	250	3.20	6.17	24.5	3899	4.38	6.78	127.0	
1540	1.25	20.0	250	3.20	6.13	24.6	3891	4.36	3.13	127.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1545	SAMPLING ENDED AT: 1550

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 32	SAMPLE ID: HMPF-MW0032-042.5-20210420 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-20-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 41.3	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.346 Liters (48 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1440	PURGING ENDED AT: 1515	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1450	2.50	2.50	250	41.22	7.00	23.3	3907	1.31	73.2	125.2	clear
1455	1.25	3.75	250	41.22	7.05	23.4	3910	0.91	69.4	124.6	clear
1500	1.25	5.00	250	41.22	7.03	23.8	3915	0.89	61.3	123.4	clear
1505	1.25	6.25	250	41.22	7.06	23.2	3917	0.70	52.9	122.0	clear
1510	1.25	7.50	250	41.22	7.03	23.4	3928	0.61	50.3	120.1	clear
1515	1.25	8.75	250	41.22	7.03	23.4	3928	0.57	52.3	121.3	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1520	SAMPLING ENDED AT: 1525
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 33	SAMPLE ID: HMPN-mw0033-047.5-20210129 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 1-29-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.13	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 45-50

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.3666 Liters (52 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1300	PURGING ENDED AT: 1325	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1310	2.50	2.50	250	6.17	7.44	23.6	4301	5.98	14.7	119.6	clear
1315	1.25	3.75	250	6.17	7.54	23.7	4313	5.75	9.03	113.9	↓
1320	1.25	5.00	250	6.17	7.61	23.7	4320	5.70	8.13	115.1	↓
1325	1.25	6.25	250	6.17	7.64	23.8	4323	5.61	7.36	116.8	↓
											↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1335

PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 34	SAMPLE ID: HMPN-MW0034-015.0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.77	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.290 Liters (23×0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1500	PURGING ENDED AT: 1525	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1510	2.50	2.50	250	4.73	3.28	25.1	3510	2.70	6.67	371.4	clear
1515	1.25	3.75	250	4.73	3.28	25.4	3520	2.59	4.63	382.7	"
1520	1.25	5.00	250	4.73	3.27	25.5	3521	2.58	3.91	3813	"
1525	1.25	6.25	250	4.73	3.26	25.5	3528	2.56	3.17	3889	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Branch / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1530	SAMPLING ENDED AT: 1635

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMTN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 35	SAMPLE ID: HMPN-mw0035-035.0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 04-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.61	CASING HEIGHT (feet als): 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42x.002) 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1540	PURGING ENDED AT: 1605	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1550	2.50	2.50	250	3.89	7.49	24.3	5301	4.41	10.7	257.3	clear
1555	1.25	3.75	250	3.89	7.47	24.0	5317	4.35	5.41	259.5	↓
1600	1.25	5.00	250	3.89	7.45	24.7	5346	4.36	4.17	264.8	
1602	0.50	5.50	250	3.89	7.44	24.9	5341	4.33	2.62	262.7	
1605	0.75	6.25	250	3.89	7.44	24.9	5347	4.33	2.89	261.2	

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett KT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1610	SAMPLING ENDED AT: 1615

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 36	SAMPLE ID: HMPN-mw0036-015.0-20210420 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-20-19

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.17	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.290 Liters (23x.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1100	PURGING ENDED AT: 1110	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1110	2.50	2.50	250	5.21	6.44	23.1	3671	0.81	11.3	205.1	clear
1112	0.50	3.00	250	5.26	6.44	23.2	3677	0.56	7.55	207.3	clear
1115	0.75	3.75	250	5.26	6.45	23.5	3699	0.13	7.08	211.8	clear
1118	0.75	4.50	250	5.26	6.44	23.5	3681	0.11	5.66	213.7	clear
1120	0.50	5.00	250	5.26	6.46	23.6	3698	0.10	5.25	214.4	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1125	SAMPLING ENDED AT: 1130

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMTN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 37	SAMPLE ID: HPFN-MW0037-010 0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.31	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 5-15

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/6	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.286 Liters (18 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1100	PURGING ENDED AT: 1125	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1110	2.50	2.50	250	5.51	6.73	21.1	2056	0.34	562	35.1	mostly clear
1115	1.25	3.75	250	5.51	6.81	21.3	2044	0.21	1.17	35.2	clear
1120	1.25	5.0	250	5.51	6.83	21.4	2041	0.12	2.12	35.7	clear
1125	1.25	6.25	250	5.51	6.83	21.5	2059	0.09	1.37	36.0	clear
											clear
											clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1130	SAMPLING ENDED AT: 1135

PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 38	SAMPLE ID: HMPN-MW038-020.0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.15	CASING HEIGHT (feet als): 3'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 15-25

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/6	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): 25

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.306 Liters (28 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1030	PURGING ENDED AT: 1050	TOTAL VOLUME PURGED (Liters): 5.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1040	2.50	2.50	250	4.21	7.07	21.3	2544	1.23	7.03	196.2	clear
1045	1.25	3.75	250	4.21	7.02	21.5	2539	1.19	5.61	197.3	"
1050	1.25	5.00	250	4.21	7.03	21.3	2531	1.16	4.63	199.6	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES: MBen	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1055

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 39	SAMPLE ID: HMPN-mw0039-035.0-20210419 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-19-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.00	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____ Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (42×0.002)+0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1105	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1050	2.50	2.50	250	5.17	7.66	24.7	4329	1.98	13.9	207.1	clear
1055	1.25	3.75	250	5.17	7.58	24.7	4337	1.84	9.64	210.9	"
1100	1.25	5.00	250	5.17	7.56	24.7	4340	1.82	6.15	210.1	"
1105	1.25	6.25	250	5.17	7.53	24.7	4347	1.81	5.87	210.3	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1110	SAMPLING ENDED AT: 1115

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 40	SAMPLE ID: HMPN-MW0040-0425-20210419 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-19-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.01	CASING HEIGHT (feet als): 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.35 Liters (48 x 0.002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5'	PURGING INITIATED AT: 1000	PURGING ENDED AT: 1025	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1010	2.50	2.50	250	5.16	7.01	25.8	4513	1.07	14.3	233.5	clear
1012	0.50	3.00	250	5.16	7.08	26.2	4555	0.93	9.16	231.6	clear
1015	0.75	3.75	250	5.10	7.09	25.9	4597	0.86	10.1	236.1	clear
1018	0.75	4.50	250	5.10	7.12	25.7	4598	0.80	9.07	237.8	clear
1020	0.50	5.00	250	5.10	7.13	25.8	4599	0.79	8.59	238.1	clear
1025	1.25	6.25	250	5.10	7.13	25.7	4599	0.78	8.01	238.3	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /T+	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1030	SAMPLING ENDED AT: 1035

PUMP OR TUBING DEPTH IN WELL (feet): 42.5'	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: MMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 41	SAMPLE ID: MPFN-MW0041-0350-20210419 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-19-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.17	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.35 Liters (48 x .002)+.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1135	PURGING ENDED AT: 1155	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1145	2.50	2.50	250	3.25	7.38	25.1	4911	3.25	overrange	219.7	gray
1147	0.50	3.00	250	3.25	7.32	25.3	4920	3.16	50.7	211.3	milky
1150	0.75	3.75	250	3.25	7.38	25.4	4921	3.03	15.6	203.6	clear
1153	0.75	4.50	250	3.25	7.40	25.6	4923	3.01	11.3	205.1	clear
1155	0.50	5.00	250	3.25	7.40	25.6	4925	3.01	10.1	210.0	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1200	SAMPLING ENDED AT: 1205

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS: install new tubing.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HPFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 42	SAMPLE ID: HPFN-mw0042-0425-20210422 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4.22.21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.87	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-45	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.35 Liters (48 x .002) + .25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1310	PURGING ENDED AT: 1345	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1320	2.50	2.50	250	5.01	7.36	25.0	4220	2.27	88.6	239.1	hazy
1325	1.25	3.75	250	5.01	7.36	25.3	4227	2.03	81.0	243.2	"
1330	1.25	5.00	250	5.01	7.35	25.2	4213	1.96	78.3	241.3	"
1335	1.25	6.25	250	5.01	7.36	25.1	4201	1.92	70.3	244.1	"
1340	1.25	7.50	250	5.01	7.36	25.1	4208	1.86	72.6	246.4	hazy

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /TF	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1345	SAMPLING ENDED AT: 1350
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS: new tubing installed

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 43	SAMPLE ID: HMFN-MW0043-0350-20210422 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-22-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.07	CASING HEIGHT (feet als): 0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 30-40

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.35 Liters (48 x .002)+.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1355	PURGING ENDED AT: 1440	TOTAL VOLUME PURGED (Liters): 11.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1405	2.50	2.50	250	6.13	7.61	24.0	4310	9.37	30.1	248.0	clear
1410	1.25	3.75	250	6.13	7.63	24.1	4316	9.23	29.6	248.1	
1415	1.25	5.00	250	6.13	7.63	24.8	4311	9.22	25.9	248.0	
1420	1.25	6.25	250	6.13	7.59	24.6	4310	9.18	25.6	248.6	
1425	1.25	7.50	250	6.13	7.56	24.6	4310	9.15	22.1	248.1	
1430	1.25	8.75	250	6.13	7.55	24.6	4316	9.10	23.9	248.1	
1435	1.25	10.00	250	6.13	7.55	24.8	4315	9.08	22.5	248.0	
1440	1.25	11.25	250	6.13	7.55	24.9	4313	9.03	21.3	248.9	

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TF	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1445	SAMPLING ENDED AT: 1420

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS: Uncapped at begging of each sampling day to attempt to get DO down - well bubbled up each time uncapped.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 44	SAMPLE ID: HMPN-MW0044-0450-20210419 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-19-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.19	CASING HEIGHT (feet als): -0.05	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 40-50

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
_____Liters

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 45	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 45	PURGING INITIATED AT: 1215	PURGING ENDED AT: 1245	TOTAL VOLUME PURGED (Liters): 7.50

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1225	2.50	2.50	250	5.28	7.01	24.7	4168	3.06	51.3	193.1	clear
1230	1.25	3.75	250	5.28	7.05	24.8	4171	2.94	31.3	191.6	
1235	1.25	5.00	250	5.28	7.06	24.6	4169	2.88	19.8	190.5	
1240	1.25	6.25	250	5.28	7.06	24.7	4178	2.85	7.36	189.9	
1243	0.75	7.00	250	5.28	7.06	24.7	4172	2.83	6.14	185.7	
1245	0.50	7.50	250	5.28	7.06	24.8	4170	2.80	5.01	188.1	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett/TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1250	SAMPLING ENDED AT: 1255

PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 45	SAMPLE ID: HMFN-mw0045-030.0-20210421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4.21.21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.11	CASING HEIGHT (feet als): 3'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 25-35

WELL DIAMETER (inches): 1"	TUBING DIAMETER (inches): 1/8"	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): 35

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.33 Liters (40 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1420	PURGING ENDED AT: 1445	TOTAL VOLUME PURGED (Liters): 6.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1430	2.50	2.50	250	6.36	7.27	25.1	5770	2.75	6.71	291.5	clear
1435	1.25	3.75	250	6.36	7.27	24.8	5771	2.70	5.07	292.1	
1440	1.25	5.00	250	6.36	7.26	24.7	5772	2.68	3.98	293.7	
1445	1.25	6.25	250	6.36	7.26	24.6	5773	2.64	3.17	293.5	↓

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1450	SAMPLING ENDED AT: 1455

PUMP OR TUBING DEPTH IN WELL (feet): 30	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 46	SAMPLE ID: HPTN-MW0046-015.C Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE:

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.01	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 10-20

WELL DIAMETER (inches):	TUBING DIAMETER (inches):	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.296 Liters (23x.002)+ 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 0950	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1000	5.00	5.00	250	5.17	6.97	21.4	3284	0.11	3.11	215.3	clear
1005	1.25	6.25	250	5.17	6.99	21.3	3281	0.13	0.69	216.7	↓
1010	1.25	7.50	250	5.17	6.98	21.1	3287	0.09	0.55	211.1	
1015	1.25	8.75	250	5.17	6.99	21.2	3288	0.07	0.46	213.1	

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett /	SAMPLER(S) SIGNATURES: MB	SAMPLING INITIATED AT: 1020	SAMPLING ENDED AT: 1025

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: HMFN	SITE LOCATION: Kennedy Space Center	
LOCATION ID: 47	SAMPLE ID: HMPN-MW0047-025.0-20216421 Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 4-21-21

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.11	CASING HEIGHT (feet als): 3.0'	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): to 20-30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): Y8	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.316 Liters (33 x .002) + 0.25

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 0900	PURGING ENDED AT: 0935	TOTAL VOLUME PURGED (Liters): 8.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0910	2.50	2.50	250	5.31	6.77	21.6	3031	0.51	5.51	280.4	clear
0915	1.25	3.75	250	5.31	6.77	21.5	3001	0.45	4.67	281.3	clear
0920	1.25	5.00	250	5.31	6.76	21.1	3008	0.26	2.11	280.7	clear
0925	1.25	6.25	250	5.31	6.76	21.6	3012	0.22	0.81	284.1	clear
0930	1.25	7.50	250	5.31	6.76	21.5	3031	0.21	1.13	284.6	clear
0935	1.25	8.75	250	5.31	6.76	21.6	3043	0.19	0.91	284.7	clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Melissa Bennett / TT	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0940	SAMPLING ENDED AT: 0945
PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: SM FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	SM

REMARKS:

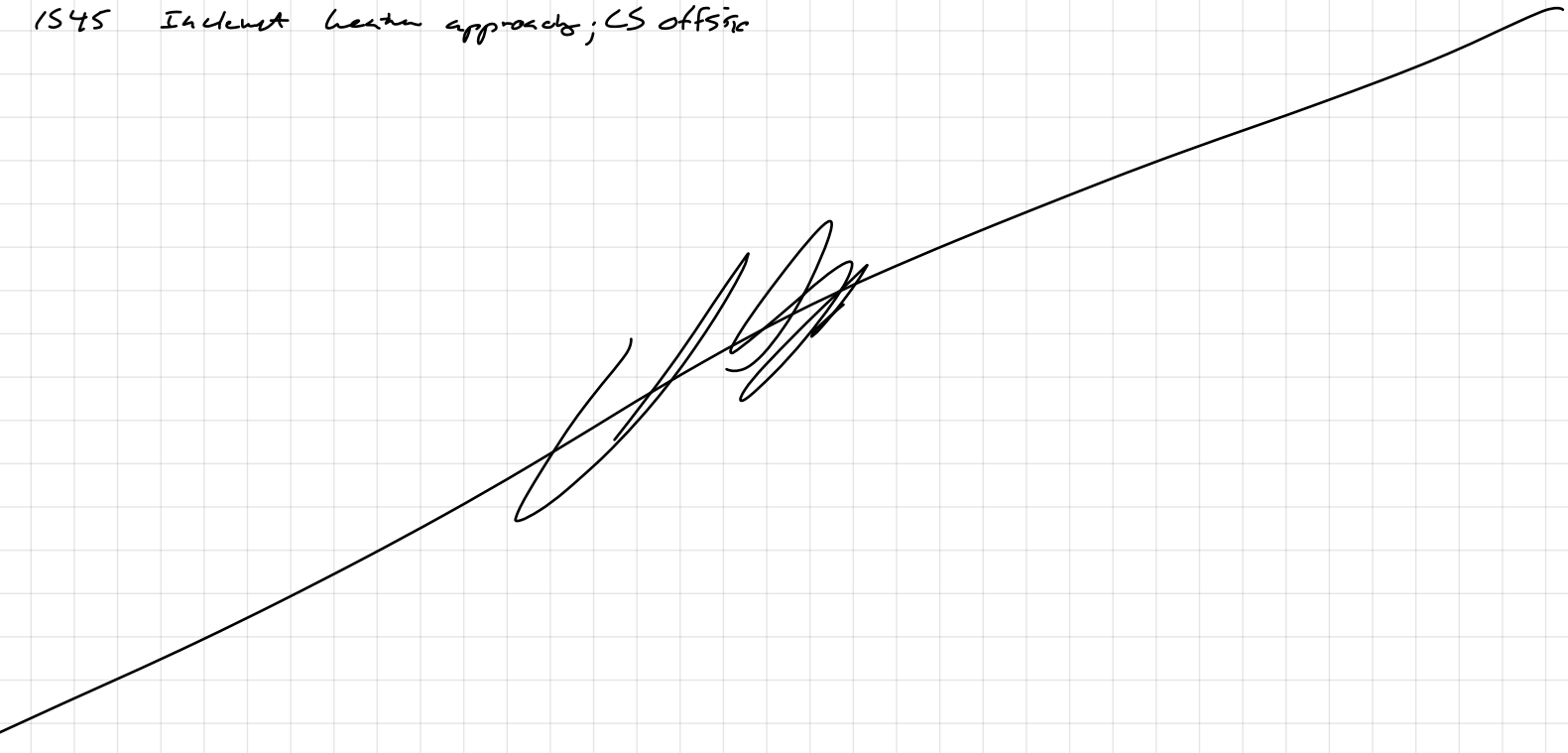
MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

07/20/2021 HMFN 112G

Personnel : Chuck Sorden (CS) Gedogist T+
Weather : Sunny 90°F
PPE : Level D
objective : Begin HMFN performance Monitoring

0730	CS on Base; gathering equipt/supplies; Calibrating			
0955	Purging	HMPN-MW0037		
1010	Purging	Complete		
1015	Sample	Collected	HMPN-MW0037-010.0-20210720	8260DTCL
1030	Purging	HMPN-MW0038		
1045	Purging	Complete		
1050	Sample	Collected	HMPN-MW0038-020.0-20210720	8260DTCL
1100	Purging	HMPN-MW0046		
1115	Purging	Complete		
1120	Sample	Collected	HMPN-MW0046-015.0-20210720	8260DTCL
1130	Purging	HMPN-MW0047		
1145	Purging	Complete		
1150	Sample	Collected	HMPN-MW0047-025.0-20210720	8260DTCL
1205	Purging	HMPN-MW0039		
1220	Purging	Complete		
1225	Sample	Collected	HMPN-MW0039-035.0-20210720	8260DTCL
1235	Purg	HMPN-MW0040		
1250	Purging	Complete		
1255	Sample	Collected	HMPN-MW0040-042.5-20210720	8260DTCL
1320	Purg	HMPN-MW0027		
1405	Purging	Complete		
1410	Sample	Collected	HMPN-MW0027-042.5-20210720	8260DTCL
1420	Purging	HMPN-MW0028		
1445	Purging	Complete		
1450	Sample	Collected	HMPN-MW0028-047.5-20210720	8260DTCL
1545	Inclement weather approaching; CS offsite			



07/21/21 HMFN 112G089852

Personnel : Chuck Sorden (CS) Geologist TT

Weather :

PPE : Level D

objective : Routine Sampling

0700 CS on site; Calibrate / Daily prep
0830 Purge HMFN-MW0045
0850 Purging Complete
0855 Sample Collected HMPN-MW0045-030.0-20210721 8260D TCL
0910 Purge HMFN-MW0036
1005 Purging Complete
1010 Sample Collected HMPN-MW0036-015.0-20210721 8260D TCL
1025 Purge HMFN-MW0041
1125 Purging Complete
1130 Sample Collected HMPN-MW0041-035.0-20210721 8260D TCL
1145 Purge HMFN-MW0042-
1245 Purging Complete
1250 Sample Collected HMPN-MW0042-042.5-20210721 8260D TCL
1300 Purge HMFN-MW0043
1320 Purging Complete
1325 Sample Collected HMPN-MW0043-035.0-20210721 8260D TCL
1335 Purge HMFN-MW0044
1410 Purging Complete
1415 Sample Collected HMPN-MW0044-042.5-20210721 8260D TCL
1425 Purge HMFN-MW0011
1440 Purging Complete
1445 Sample Collected HMPN-MW0011-025.0-20210721 8260D TCL
1505 Purge HMFN-MW0009
1540 Purging Complete
1545 Sample Collected HMPN-MW0009-010.8-20210721 8260D TCL
1555 Purge HMFN-MW0034
1610 Purging Complete
1615 Sample Collected HMPN-MW0034-015.0-20210721 8260D TCL
1625 Purge HMFN-MW0035
1640 Purging Complete
1645 Sample Collected HMPN-MW0035-035.0-20210721 8260D TCL
1815 Site Secure; CS offsite

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2496 | PAGE 1 OF 3

PROJECT NO:	FACILITY: (HMPN)	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	KSC-HMPN	Chris Hook	(412) 921-7090	ENCO – Kaitlin Dybicki
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: 8260D TCL SOMO1	COMMENTS
07/20	1015	HMPN-MW0037-010.0-2021	0720	5	15	GW	G	3	X			
	1050	HMPN-MW0038-020.0-2021	0720	15	25							
	1120	HMPN-MW0046-015.0-2021	0720	10	20							
	1150	HMPN-MW0047-025.0-2021	0720	20	30							
	1225	HMPN-MW0034-035.0-2021	0720	30	40							
	1255	HMPN-MW0040-042.5-2021	0720	40	45							
	1410	HMPN-MW0027-042.5-2021	0720	40	45							
07/20	1450	HMPN-MW0028-047.5-2021	0720	45	50							
07/21	0855	HMPN-MW0045-030.0-2021	0721	25	35							
	1010	HMPN-MW0036-015.0-2021	0721	10	20							
	1125	HMPN-MW0041-035.0-2021	0721	30	40							
	1250	HMPN-MW0042-042.5-2021	0721	40	45							
07/21	1325	HMPN-MW0043-035.0-2021	0721	30	40	GW	G	3	X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY James N Gregory	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2496 | PAGE 1 OF 3

PROJECT NO:	FACILITY: (HMPN)	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08482	KSC-HMPN	Chris Hook	(412) 921-7090	ENCO – Kaitlin Dalwichi
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Park Dr.
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260D TCL SOM01	HCl							COMMENTS
									G										
07/20/2021	1015	HMPN-MW0037-010.0-2021	0720	5	15	GW	G	3	X										
	1050	HMPN-MW0038-020.0-2021	0720	15	25														
	1120	HMPN-MW0046-015.0-2021	0720	10	20														
	1150	HMPN-MW0042-025.0-2021	0720	20	30														
	1225	HMPN-MW0039-035.0-2021	0720	30	40														
	1255	HMPN-MW0040-042.5-2021	0720	40	45														
	1410	HMPN-MW0027-042.5-2021	0720	40	45														
07/20/2021	1450	HMPN-MW0028-042.5-2021	0720	45	50														
07/21/2021	0855	HMPN-MW0045-030.0-2021	0721	25	35														
	1010	HMPN-MW0036-015.0-2021	0721	10	20														
	1125	HMPN-MW0041-035.0-2021	0721	30	40														
	1250	HMPN-MW0044-042.5-2021	0721	40	45														
07/21/2021	1325	HMPN-MW0043-035.0-2021	0721	30	40	GW	G	3	X										

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY James McGregor	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2497 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	NSC-HMPN (HMFN)	Chris Hoon	(412) 921-7090	ENCO – Kaitlin Dzlnicki
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260 DTCL SOM01	HCl	COMMENTS
									G				
07/21/2021	1415	HMPN-MW0044-042.5-20210721		40	45	GW	G	3	X				
	1445	HMPN-MW0011-025.0-20210721		20	30								
	1545	HMPN-MW0009-010.8-20210721		6.6	15								
	1615	HMPN-MW0034-~~025.0~~ 015.0-20210721		~~20~~ 10	~~30~~ 20								
07/21	1645	HMPN-MW0035-035.0-20210721		30	40								
07/22	0910	HMPN-MW0016-010.0-20210722		5	15								
	1000	HMPN-MW0029-015.0-20210722		10	20								
	1035	HMPN-MW0030-025.0-20210722		20	30								
	1130	HMPN-MW0031-035.0-20210722		30	40								
	1215	HMPN-MW0032-042.5-20210722		40	45								
	1240	HMPN-MW0033-047.5-20210722		45	50								
	1315	HMPN-MW0008-025.0-20210722		20	30								
07/22	1405	HMPN-~~MW0024~~ 060.0-20210722		55	65	GW	G	3	X				

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2497 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	RSC-HMPN (HMFN)	Chris Hoch	(412) 921-7040	ENCO – Kristin Dalnoki
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260 DTCL SOM01	TYPE OF ANALYSIS: HCl	COMMENTS
									G				
07/21	1415	HMPN-MW0044-042.5-20210721		40	45	GW	G	3	X				
	1445	HMPN-MW0011-025.0-20210721		20	30								
	1545	HMPN-MW0009-010.8-20210721		6.6	15								
	1615	HMPN-MW0034-~~025.0~~ 015.0-20210721		~~20~~ 10	~~30~~ 20								
07/21	1645	HMPN-MW0035-035.0-20210721		30	40								
07/22	0910	HMPN-MW0016-010.0-20210722		5	15								
	1000	HMPN-MW0029-015.0-20210722		10	20								
	1035	HMPN-MW0030-025.0-20210722		20	30								
	1130	HMPN-MW0031-035.0-20210722		30	40								
	1215	HMPN-MW0032-042.5-20210722		40	45								
	1240	HMPN-MW0033-047.5-20210722		45	50								
	1315	HMPN-MW0008-025.0-20210722		20	30								
07/22	1405	HMPN-~~MW0024~~ 060.0-20210722		55	65	GW	G	3	X				

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2498 | PAGE 3 OF 3

PROJECT NO: 112G08982	FACILITY: TSC - HMPN (HMPN)	PROJECT MANAGER Chris Hook	PHONE NUMBER (412) 921-7090	LABORATORY NAME AND CONTACT: ENCO — Kristin Dybicki
SAMPLERS (SIGNATURE) Chuck Sorden		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER (321) 591-7580	ADDRESS 10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260D TCL SOMS HCl	COMMENTS
									G			
07/22	1435	HMPN-MW0002-035.0-2021	0722	30	40	GW	G	3	X			
07/22	1500	HMPN-MW0004-010.0-2021	0722	5	15	GW	G	3	X			

1. RELINQUISHED BY	DATE 07/22/21	TIME 1615	1. RECEIVED BY Jennifer Gregory	DATE 7/22/21	TIME 1615
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2498 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08582	TSC - HMPN	Chris Hook	(407) 921-7090	ENCO – Trista Dolnick
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260 Full Scan	COMMENTS
									G	HCl		
07/22	1435	HMPN-MW0002-035.0-20210722		30	40	GW	G	3			X	
07/22	1500	HMPN-MW0004-010.0-20210722		5	15	GW	G	3			X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

etra Tech EGS, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name: HMFN
Project No.: 112G08982
Location: Kennedy Space Center (KSC), Florida
Personnel: Chuck Sorden
Weather Conditions: Sunny 81 degrees F
Measuring Device: Heron Skinny Dipper
Tidally Influenced: Yes ___ No __X__
Remarks:

Well or Piezometer (HMFN-)	Date	Time	Elevation of Reference Point (feet)*	Screened Interval (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
MW0002	7/23/2021	940	0.81	30 to 40	2.99	0		
MW0004	7/23/2021	949	3.41	5 to 15	4.03	0		
MW0008	7/23/2021	934	5.69	20 to 30	6.46	0		
MW0009	7/23/2021	931	4.81	5 to 15	4.95	0		
MW0011	7/23/2021	925	3.50	20 to 30	4.35	0		
MW0024	7/23/2021	939	3.75	55 to 65	4.01	0		
MW0027	7/23/2021	947	5.58	40 to 45	6.39	0		
MW0028	7/23/2021	948	5.37	45 to 50	6.19	0		
MW0029	7/23/2021	935	4.98	10 to 20	5.79	0		
MW0030	7/23/2021	935	5.11	20 to 30	5.89	0		
MW0031	7/23/2021	936	5.02	30 to 40	5.78	0		
MW0032	7/23/2021	937	4.85	40 to 45	5.59	0		
MW0033	7/23/2021	938	4.89	45 to 50	5.67	0		
MW0034	7/23/2021	932	5.52	10 to 20	6.35	0		
MW0035	7/23/2021	933	5.50	30 to 40	6.29	0		
MW0036	7/23/2021	924	3.28	10 to 20	4.12	0		
MW0037	7/23/2021	912	5.15	5 to 15	6.04	0		
MW0038	7/23/2021	912	5.00	15 to 25	5.86	0		
MW0039	7/23/2021	922	5.04	30 to 40	5.82	0		
MW0040	7/23/2021	923	5.16	40 to 45	5.96	0		
MW0041	7/23/2021	927	4.36	30 to 40	5.16	0		
MW0042	7/23/2021	928	4.37	40 to 45	5.09	0		
MW0043	7/23/2021	929	4.19	30 to 40	5.01	0		
MW0044	7/23/2021	930	4.17	40 to 45	4.96	0		
MW0045	7/23/2021	945	6.47	25 to 35	7.21	0		
MW0046	7/23/2021	915	5.35	10 to 20	6.00	0		
MW0047	7/23/2021	915	5.35	20 to 30	5.94	0		
MW0016	23-Jul	51			7.62			

* All measurements to the nearest 0.01 foot

LAMOTTE TURBIDITY METER CALIBRATION LOG

Tetra Tech, Inc.

PROJECT NAME : Hypergol Maintenance Facility North

INSTRUMENT NAME/MODEL: Lamotte 2020T Turbidimeter

SITE NAME: HMFN

MANUFACTURER: Lamotte

PROJECT No.: 112G08982

SERIAL NUMBER: 1914-4019

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-Calibration	Post-Calibration	Pre-Calibration	Post-Calibration		
(mm/dd/yy)	(Number)	(Name)	Nephelometric Turbidity Units (NTUs)				(Number)	
			1.0	1.0	1.14	1.0		
7/20/2021	——	C. Sorden	10.0	10.0	11.2	10.0		
			1.0	1.0	0.98	1.0		
7/21/2021	-----	C. Sorden	10.0	10.0	10.21	10.0		
			1.0	1.0	1.04	1.0		
7/22/2021	---	C. Sorden	10.0	10.0	10.19	10.0		

YSI 556 EQUIPMENT CALIBRATION SHEET

Tetra Tech, Inc.

PROJECT NAME : Hypergol Maintenance Facility North

INSTRUMENT NAME/MODEL: YSI Pro Quatro

SITE NAME: HMFN

MANUFACTURER: Xylem/YSI

PROJECT No.: 112G08982

SERIAL NUMBER: 21D101766

Date of Calibration	Person Performing Calibration	pH			Cond.	Temp.	Dissolved Oxyden	ORP	Calibration Standard (Lot#/Expiration Date)	Comments
(mm/dd/yy)	(Name)	(S.U.)			(µS/cm)	(Celsius)	(%)	(mV)		
07/20/21	C. Sorden	7.07/7.00	4.18/4.00	10.10/10.00	1333 / 1413	29.8	92.5/100.3	225.5 / 238.0	Lot# 0GL537 Exp.Date: DEC/22	Ph 4.0
07/21/21	C. Sorden	7.05/7.00	4.08/4.00	9.98/10.00	1385 / 1413	26.2	98.4/100.2	231.8 / 238.0	Lot# 0GL758 Exp.Date: DEC/22	Ph 7.0
07/22/21	C. Sorden	6.98/7.00	4.02/4.00	10.07/10.00	1395 / 1403	27.4	100.9/100.3	229.9 / 238.0	Lot# 0GK984 Exp.Date: NOV/22	Ph 10.0
									Lot# 1GD875 Exp.Date: JAN/22	ORP - 238 mV
									Lot# 0GK869 Exp.Date: NOV/21	Conductivity - 1413 µS/cm

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0002	SAMPLE ID: **HMPN-MW0002-035.0-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.20	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1410	PURGING ENDED AT: 1430	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1420	2.0	2.0	200	3.33	7.35	28.9	4877	3.92	2.83	103.2	Clear
1425	0.5	2.5	100	3.29	7.35	28.9	4868	3.92	2.44	98.4	Clear
1427	0.2	2.7	100	3.29	7.35	28.8	4859	3.93	2.49	97.1	Clear
1430	0.3	3.0	100	3.29	7.35	28.8	4848	3.92	2.66	103.1	Clear
1435	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1435	SAMPLING ENDED AT: 1440

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: High dissolved oxygen from air sparging. Sampled per FS 2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0004	SAMPLE ID: **HMPN-MW0004-010.0.0-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.33	CASING HEIGHT (feet als): 0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.33	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.58 Liters. (0.005 x 25) + 0.475 = 0.58

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1440	PURGING ENDED AT: 1455	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1450	2.0	2.0	200	4.89	3.38	30.0	4690	0.12	3.04	304.4	Clear
1452	0.4	2.4	200	4.89	3.38	30.0	4663	0.12	2.28	303.3	Clear
1455	0.6	3.0	200	4.89	3.38	30.0	4616	0.12	2.03	304.4	Clear
1500	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1505

PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: .

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0008	SAMPLE ID: **HMPN-MW0008-025.0-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.50	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.53 Liters. (0.005 x 40) + 0.475 = 0.53

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1245	PURGING ENDED AT: 1310	TOTAL VOLUME PURGED (Liters): 3.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1255	2.0	2.0	200	6.95	6.78	29.6	5196	3.24	23.7	163.2	Clear
1305	1.0	3.0	100	6.92	6.81	29.7	5263	3.03	13.9	172.9	Clear
1307	0.2	3.2	100	6.92	6.82	29.6	5255	2.97	14.1	174.8	Clear
1310	0.3	3.5	100	6.92	6.83	29.5	5248	2.98	10.1	176.2	Clear
1315	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1315	SAMPLING ENDED AT: 1320

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: High dissolved oxygen from air sparging. Sampled per FS 2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0009	SAMPLE ID: **HMPN-MW0009-010.8-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.27	CASING HEIGHT (feet als): -0.1	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 6.37	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 6.37	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1.29 Liters. (15 - 6.37) x 0.15 = 1.29

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

_____ Liters.

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.8	PURGING INITIATED AT: 1505	PURGING ENDED AT: 1540	TOTAL VOLUME PURGED (Liters): 4.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1515	2.0	2.0	200	6.75	7.38	30.0	6266	2.50	17.6	-14.9	Yellow
1525	1.0	3.0	100	6.63	7.39	30.2	6244	1.99	4.24	-7.3	Yellow
1535	1.0	4.0	100	6.63	7.37	30.0	6209	2.03	3.31	-13.2	Yellow
1540	0.5	4.5	100	6.63	7.36	30.1	6208	1.88	3.19	-13.8	Yellow
1545	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1545	SAMPLING ENDED AT: 1550

PUMP OR TUBING DEPTH IN WELL (feet): 10.8	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity. High D.O. from air sparging. Sampled per FS 2212.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0011	SAMPLE ID: **HMPN-MW0011-025.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.62	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1425	PURGING ENDED AT: 1440	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1435	2.0	2.0	200	4.79	6.73	29.9	4248	0.05	12.6	97.6	Clear
1437	0.4	2.4	200	4.79	6.73	29.8	4243	0.05	11.8	97.0	Clear
1440	0.6	3.0	200	4.79	6.74	29.8	4237	0.04	8.57	96.2	Clear
1445	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1445	SAMPLING ENDED AT: 1450

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity. High turbidity from air sparging. Sampled per FS 2212.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0016	SAMPLE ID: **HMPN-MW0016-010.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.37	CASING HEIGHT (feet als): 3	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.37	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.60 Liters. (0.005 x 25) + 0.475 = 0.60

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0850	PURGING ENDED AT: 0905	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0900	2.0	2.0	200	7.84	3.72	26.6	2096	0.19	3.39	379.5	Clear
0902	0.4	2.4	200	7.84	3.74	26.6	2099	0.17	2.81	379.1	Clear
0905	0.6	3.0	200	7.84	3.74	26.6	2107	0.21	2.46	379.2	Clear
0910	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0910	SAMPLING ENDED AT: 0915

PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0024	SAMPLE ID: **HMPN-MW0024-060.0-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.14	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 55 to 65

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 55	BOTTOM DEPTH (feet bls): 65

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.85 Liters. (0.005 x 75) + 0.475 = 0.85

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 60	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 60	PURGING INITIATED AT: 1325	PURGING ENDED AT: 1400	TOTAL VOLUME PURGED (Liters): 4.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1335	2.0	2.0	200	4.33	7.28	29.2	3826	0.46	74.8	-75.0	Clear
1345	1.0	3.0	100	4.28	7.30	30.5	3883	0.35	44.2	-92.6	Clear
1355	1.0	4.0	100	4.28	7.30	30.2	3840	0.29	17.6	-95.9	Clear
1357	0.2	4.2	100	4.28	7.30	30.2	3834	0.27	15.0	-96.9	Clear
1400	0.3	4.5	100	4.28	7.30	30.3	3810	0.36	13.9	-98.0	Clear
1405	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1405	SAMPLING ENDED AT: 1410

PUMP OR TUBING DEPTH IN WELL (feet): 60	SAMPLE PUMP: FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial High Turbidity.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0027	SAMPLE ID: **HMPN-MW0027-042.5-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.69	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.77 Liters. (0.005 x 55) + 0.475 = 0.77

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1320	PURGING ENDED AT: 1405	TOTAL VOLUME PURGED (Liters): 7.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1350	6.0	6.0	200	6.89	7.29	28.6	3472	2.74	15.8	17.2	Clear
1400	1.0	7.0	100	6.85	7.29	28.4	3481	2.57	14.1	17.1	Clear
1402	0.2	7.2	100	6.85	7.29	28.4	3480	2.60	13.9	18.2	Clear
1405	0.3	7.5	100	6.85	7.28	28.4	3505	2.62	13.7	118.6	Clear
1410	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1410	SAMPLING ENDED AT: 1415
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: under pressure initially. Initial high turbidity. High D. O. from air sparging. Sampled per FS2212.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0028	SAMPLE ID: **HMPN-MW0028-047.5-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.52	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 45 to 50

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.77 Liters. (0.005 x 55) + 0.475 = 0.77

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 1420	PURGING ENDED AT: 1445	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1440	4.0	4.0	200	6.65	6.99	29.7	3953	0.34	2.76	-50.7	Clear
1442	0.4	4.4	200	6.65	6.99	29.8	3954	0.33	2.51	-50.5	Clear
1445	0.6	5.0	100	6.65	7.00	29.9	3968	0.30	2.30	-52.4	Clear
1450	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1450	SAMPLING ENDED AT: 1455

PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: under pressure initially. Initial high turbidity. High D. O. from air sparging. Sampled per FS2212.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0029	SAMPLE ID: **HMPN-MW0029-015.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.98	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.63 Liters. (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 0940	PURGING ENDED AT: 0955	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0950	2.0	2.0	200	6.20	3.33	29.6	4779	0.47	11.0	381.9	Clear
0952	0.4	2.4	200	6.20	3.33	29.6	4780	0.47	9.80	381.8	Clear
0955	0.6	3.0	200	6.20	3.33	29.7	4783	0.47	8.52	381.5	Clear
1000	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1000	SAMPLING ENDED AT: 1005

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0030	SAMPLE ID: **HMPN-MW0030-025.0-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.06	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1030	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1015	2.0	2.0	200	6.07	7.15	29.5	5840	2.39	18.2	311.0	Clear
1025	1.0	3.0	100	6.07	7.15	29.5	5809	2.43	9.20	303.6	Clear
1027	0.2	3.2	100	6.07	7.15	29.6	5800	2.44	8.02	301.1	Clear
1030	0,3	3.5	100	6.07	7.15	29.6	5791	2.44	8.82	300.4	Clear
1035	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1035	SAMPLING ENDED AT: 1040

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: High dissolved oxygen from air sparging. Sampled per FS 2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0031	SAMPLE ID: **HMPN-MW0031-035.0-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.99	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1040	PURGING ENDED AT: 1125	TOTAL VOLUME PURGED (Liters): 1125

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1050	2.0	2.0	200	6.02	7.36	28.6	5670	6.25	51.8	316.6	Clear
1100	1.0	3.0	100	6.02	7.36	28.6	5641	6.83	29.3	318.9	Clear
1120	2.0	5.0	100	6.02	7.36	28.8	5728	7.25	26.7	320.4	Clear
1122	0.2	5.2	100	6.02	7.36	28.8	5713	7.36	27.2	320.3	Clear
1125	0.3	5.5	100	6.02	7.36	28.8	5729	7.36	25.2	320.1	Clear
1130	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1130	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: High dissolved oxygen and turbidity from air sparging. Sampled per FS 2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0032	SAMPLE ID: **HMPN-MW0032-042.5-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.72	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.75 Liters. (0.005 x 55) + 0.475 = 0.75

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1135	PURGING ENDED AT: 1210	TOTAL VOLUME PURGED (Liters): 4.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1150	3.0	3.0	200	5.97	7.36	28.4	4685	5.47	11.5	105.9	Clear
1200	1.0	4.0	100	5.90	7.35	28.4	4667	5.42	11.1	106.3	Clear
1202	0.2	4.2	100	5.90	7.35	28.4	4717	5.38	8.89	111.4	Clear
1210	0.3	4.5	100	5.90	7.35	28.3	4706	5.37	7.62	113.5	Clear
1215	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1215	SAMPLING ENDED AT: 1220

PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP: FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: High dissolved oxygen from air sparging. Sampled per FS 2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0032	SAMPLE ID: **HMPN-MW0033-047.5-20210722** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/22/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.84	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 45 to 50

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 45	BOTTOM DEPTH (feet bls): 50

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.80 Liters. (0.005 x 65) + 0.475 = 0.80

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 1220	PURGING ENDED AT: 1235	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1230	2.0	2.0	200	6.19	7.13	27.5	4294	0.31	2.43	-63.6	Clear
1232	0.4	2.4	200	6.19	7.11	27.5	4310	0.33	2.79	-64.4	Clear
1235	0.6	3.0	200	6.19	7.12	27.6	4301	0.33	1.39	-64.7	Clear
1240	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1240	SAMPLING ENDED AT: 1245

PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: .

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0034	SAMPLE ID: **HMPN-MW0034-015.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.71	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.63 Liters. (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1555	PURGING ENDED AT: 1610	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1605	2.0	2.0	200	7.10	3.48	29.1	3333	0.68	4.31	427.5	Clear
1607	0.4	2.4	200	7.10	3.48	29.2	3336	0.77	3.76	428.9	Clear
1610	0.6	3.0	200	7.10	3.48	29.1	3340	0.76	2.42	426.5	Clear
1615	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1615	SAMPLING ENDED AT: 1620

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0035	SAMPLE ID: **HMPN-MW0035-035.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.55	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1625	PURGING ENDED AT: 1640	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1635	2.0	2.0	200	6.64	7.37	28.5	6459	0.37	12.6	30.0	Clear
1637	0.4	2.4	200	6.64	7.38	28.4	6453	0.36	11.1	31.7	Clear
1640	0.6	3.0	200	6.64	7.39	28.4	6444	0.36	9.87	34.1	Clear
1645	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1645	SAMPLING ENDED AT: 1650

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0036	SAMPLE ID: **HMPN-MW0036-015.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.49	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.63 Liters. (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 0910	PURGING ENDED AT: 1005	TOTAL VOLUME PURGED (Liters): 6.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0920	2.0	2.0	200	4.58	6.42	29.4	4047	0.18	58.4	44.8	Brown
0930	1.0	3.0	100	4.56	6.39	29.7	4016	0.17	37.2	45.0	Brown
0940	1.0	4.0	100	4.56	6.39	29.7	3988	0.18	22.6	44.1	Clear
1000	2.0	6.0	100	4.56	6.35	30.0	3919	0.16	10.8	54.2	Clear
1002	0.2	6.2	100	4.56	6.35	29.8	3909	0.16	10.16	54.5	Clear
1005	0.3	6.5	100	4,.56	6.34	29.8	3900	0.16	9.08	54.7	Clear
1010	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1010	SAMPLING ENDED AT: 1015
PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0037	SAMPLE ID: **HMPN-MW0037-010.0-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.18	CASING HEIGHT (feet als): 4.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 2.18	WELL SCREEN INTERVAL DEPTH (feet bls): 5 to 15

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 5	BOTTOM DEPTH (feet bls): 15

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.63 Liters. (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0955	PURGING ENDED AT: 1010	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1005	2.0	2.0	200	6.37	6.77	27.5	2280	0.11	8.41	-124.7	Yellow
1007	0.4	2.4	200	6.37	6.77	27.6	2284	0.11	8.88	-124.2	Yellow
1010	0.6	3.0	200	6.37	6.77	27.7	2294	0.10	7.31	-123.9	Yellow
1015	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1015	SAMPLING ENDED AT: 1020

PUMP OR TUBING DEPTH IN WELL (feet): 10	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: .

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0038	SAMPLE ID: **HMPN-MW0038-020.0-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.97	CASING HEIGHT (feet als): 4.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 15 to 25

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 15	BOTTOM DEPTH (feet bls): 25

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.63 Liters. (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1030	PURGING ENDED AT: 1045	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1040	2.0	2.0	200	6.03	6.92	27.1	2775	0.08	6.62	35.3	Clear
1042	0.4	2.4	200	6.03	6.91	27.3	2784	0.08	5.86	36.6	Clear
1045	0.6	3.0	200	6.03	6.91	27.3	2788	0.08	4.71	37.2	Clear
1050	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1055

PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: .

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0039	SAMPLE ID: **HMPN-MW0039-035.0-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.40	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1205	PURGING ENDED AT: 1220	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1215	2.0	2.0	200	6.56	7.40	29.9	4289	1.32	14.0	17.9	Clear
1217	0.4	2.4	200	6.56	7.40	30.0	4255	1.33	13.5	17.0	Clear
1220	0.6	3.0	200	6.56	7.39	30.1	4280	1.32	13.2	15.3	Clear
1225	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1225	SAMPLING ENDED AT: 1230

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: .

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0040	SAMPLE ID: **HMPN-MW0040-042.5-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.36	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.77 Liters. (0.005 x 55) + 0.475 = 0.77

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1235	PURGING ENDED AT: 1250	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1245	2.0	2.0	200	6.70	7.25	30.8	5406	0.65	2.99	70.1	Clear
1247	0.4	2.4	200	6.70	7.25	30.8	5412	0.53	1.96	69.0	Clear
1250	0.6	3.0	200	6.70	7.25	30.8	5410	0.50	1.79	70.2	Clear
1255	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1255	SAMPLING ENDED AT: 1300

PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0041	SAMPLE ID: **HMPN-MW0041-035.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.76	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1025	PURGING ENDED AT: 1125	TOTAL VOLUME PURGED (Liters): 8.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1035	2.0	2.0	200	6.14	7.33	29.6	5510	0.70	44.9	90.8	Cloudy
1045	1.0	3.0	100	5.98	7.34	29.9	5528	0.62	56.4	90.4	Cloudy
1100	1.5	4.5	100	5.98	7.36	29.9	5532	0.53	78.0	96.9	Cloudy
1110	2.0	6.5	200	6.05	7.36	29.9	5511	0.54	107.2	94.7	Cloudy
1120	2.0	7.5	200	6.05	7.36	29.9	5540	0.46	96.5	97.0	Cloudy
1122	0.4	7.9	200	6.05	7.36	29.7	5539	0.46	98.8	98.9	Cloudy
1125	0.6	8.5	200	6.05	7.36	29.7	5536	0.47	96.4	99.2	Cloudy
1130	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1130	SAMPLING ENDED AT: 1135

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity. High turbidity from air sparging. Sampled per FS2212. All parameters Stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0042	SAMPLE ID: **HMPN-MW0042-042.5-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.40	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1145	PURGING ENDED AT: 1240	TOTAL VOLUME PURGED (Liters): 8.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1215	6.0	6.0	200	5.54	7.30	31.1	4531	0.42	53.0	-3.2	Cloudy
1235	2.0	8.0	100	5.51	7.29	30.7	4485	0.42	50.4	-12.0	Cloudy
1237	0.2	8.2	100	5.51	7.29	30.5	4465	0.39	50.7	-7.5	Cloudy
1240	0.3	8.5	100	5.51	7.28	30.5	4447	0.39	49.9	-6.6	Cloudy
1245	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1245	SAMPLING ENDED AT: 1250

PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity. High turbidity from air sparging. Sampled per FS2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0043	SAMPLE ID: **HMPN-MW0043-035.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.43	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 30 to 40

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 30	BOTTOM DEPTH (feet bls): 40

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35	PURGING INITIATED AT: 1300	PURGING ENDED AT: 1320	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1315	3.0	3.0	200	5.45	7.57	30.2	4918	0.08	13.4	86.9	Clear
1317	0.4	3.4	200	5.45	7.56	30.3	4941	0.08	13.1	87.0	Clear
1320	0.6	4.0	200	5.45	7.56	30.3	4937	0.06	10.86	76.8	Clear
1325	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1325	SAMPLING ENDED AT: 1330

PUMP OR TUBING DEPTH IN WELL (feet): 35	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0044	SAMPLE ID: **HMPN-MW0044-042.5-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.29	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 40 to 45

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 40	BOTTOM DEPTH (feet bls): 45

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. (0.005 x 50) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1335	PURGING ENDED AT: 1410	TOTAL VOLUME PURGED (Liters): 4.51

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1345	2.0	2.0	200	5.44	7.12	29.4	4857	0.19	54.4	-0.5	Cloudy
1405	2.0	4.0	100	5.40	7.15	30.0	4896	0.01	94.5	2.5	Cloudy
1407	0.2	4.2	100	5.40	7.11	30.0	4905	0.01	91.9	1.6	Cloudy
1410	0.3	4.5	100	5.40	7.11	29.9	4926	0.01	91.2	0.6	Cloudy
1415	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1415	SAMPLING ENDED AT: 1420

PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP: FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity. High turbidity from air sparging. Sampled per FS 2212. All parameters stable.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0045	SAMPLE ID: **HMPN-MW0045-030.0-20210721** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/21/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.57	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 25 to 35

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): 35

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.70 Liters. (0.005 x 45) + 0.475 = 0.70

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 0830	PURGING ENDED AT: 0850	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0845	3.0	3.0	200	7.78	7.26	27.6	5989	0.91	5.44	148.3	Clear
0847	0.4	3.4	200	7.78	7.26	27.6	5981	0.90	4.65	147.9	Clear
0850	0.6	4.0	200	7.78	7.26	27.7	5986	0.90	3.60	146.8	Clear
0855	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0855	SAMPLING ENDED AT: 0900

PUMP OR TUBING DEPTH IN WELL (feet): 30	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: Initial high turbidity.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0046	SAMPLE ID: **HMPN-MW0046-015.0-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.17	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 10 to 20

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 10	BOTTOM DEPTH (feet bls): 20

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.63 Liters. (0.005 x 30) + 0.475 = 0.63

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 15	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 15	PURGING INITIATED AT: 1100	PURGING ENDED AT: 1115	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1110	2.0	2.0	200	6.45	6.71	27.0	2891	0.13	4.77	86.1	Clear
1112	0.4	2.4	200	6.45	6.70	27.0	2901	0.12	4.02	89.6	Clear
1115	0.6	3.0	200	6.45	6.70	270	2909	0.11	3.59	88.6	Clear
1120	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1120	SAMPLING ENDED AT: 1125

PUMP OR TUBING DEPTH IN WELL (feet): 15	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS: .

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

SITE NAME: Hypergol Maintenance Facility North (HMFN)	SITE LOCATION: Kennedy Space Center (KSC), Florida	
LOCATION ID: MW0047	SAMPLE ID: **HMPN-MW0047-025.0-20210720** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/20/2021**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.21	CASING HEIGHT (feet als): 3.0	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 20 to 30

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 3/16	PURGE PUMP TYPE OR BAILER: Peristaltic Pump	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters.

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25	PURGING INITIATED AT: 1130	PURGING ENDED AT: 1145	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1140	2.0	2.0	200	6.35	6.65	27.2	3191	0.17	3.17	110.9	Clear
1142	0.4	2.4	200	6.35	6.65	27.2	3188	0.14	3.05	112.7	Clear
1145	0.6	3.0	200	6.35	6.65	27.2	3173	0.13	2.86	114.5	Clear
1150	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.06

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Chuck Sorden/Tetra Tech	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1155

PUMP OR TUBING DEPTH IN WELL (feet): 25	SAMPLE PUMP: FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 ml	HCl	None	<2	SW-846 8260B	PP

REMARKS:.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

APPENDIX F

LABORATORY ANALYTICAL REPORTS

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ENCO Laboratories

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10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Thursday, September 3, 2020
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AD05339

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, August 28, 2020.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AD05339
SDG: AD05339-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
TO-15	OVGCMS7

Analysis: TO-15

The calibration curve and the continuing calibration standards are in ppbv. Raw data is reported in pptv. Per request, results may be reported in a unit other than ppbv which is obtained through a conversion factor set up in the laboratories' database.

Acetone and methylene chloride is a common laboratory contaminant.

Affected Samples: AA62257-CCV1, HMFN-VMP1-Field-20200826[AD05339-01], HMFN-VMP2-P.Lot-20200826[AD05339-02]
Upon initial analysis the continuing verification standard exhibited low bias for 1,2,4-trichlorobenzene. The associated sample results were non-detect, but instrument sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit. Analyte(s) in the associated sample were not detected.

Affected Samples: 0I02022-BLK1, HMFN-VMP1-Field-20200826[AD05339-01], HMFN-VMP2-P.Lot-20200826[AD05339-02]
Result for acetone and/or methylene chloride may be biased high due to positive results in the method blank.

Affected Samples: 0I02022-BLK1, HMFN-VMP2-P.Lot-20200826[AD05339-02]
The method blank had a positive result for methylene chloride; however the concentration in the method blank is less than 10% of the sample result.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-VMP1-Field-20200826 **Lab ID: AD05339-01** **Sampled: 08/26/20 16:30** **Received: 08/28/20 14:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	09/25/20	09/02/20 07:15	09/02/20 18:50

Client ID: HMFN-VMP2-P.Lot-20200826 **Lab ID: AD05339-02** **Sampled: 08/26/20 16:40** **Received: 08/28/20 14:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	09/25/20	09/02/20 07:15	09/02/20 19:35

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMFN-VMP1-Field-20200826 **Lab ID:** AD05339-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	1.7	I	1.6	12	ug/m³ Air	TO-15	
Acetone	11	V	1.4	9.9	ug/m³ Air	TO-15	J-01, O-01
cis-1,2-Dichloroethene	30		2.5	17	ug/m³ Air	TO-15	
Freon 113	150		4.1	32	ug/m³ Air	TO-15	
Methylene chloride	5.1	IV	1.2	15	ug/m³ Air	TO-15	J-01, O-01
Trichloroethene	18	I	3.1	22	ug/m³ Air	TO-15	
Vinyl chloride	32		2.4	11	ug/m³ Air	TO-15	

Client ID: HMFN-VMP2-P.Lot-20200826 **Lab ID:** AD05339-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	8.5	V	1.1	8.1	ug/m³ Air	TO-15	J-01, O-01
Chloromethane	1.4	I	1.3	7.0	ug/m³ Air	TO-15	
Ethylbenzene	4.2	I	1.8	15	ug/m³ Air	TO-15	
Methylene chloride	23	V	0.94	12	ug/m³ Air	TO-15	QB-01
Toluene	27		1.9	13	ug/m³ Air	TO-15	
Xylenes (Total)	25		3.9	15	ug/m³ Air	TO-15	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-VMP1-Field-20200826 **Lab Sample ID:** AD05339-01 **Received:** 08/28/20 14:00

Matrix: Air **Sampled:** 08/26/20 16:30 **Work Order:** AD05339

Project: NASA KSC HMFN **Sampled By:** Rob Siegel **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	3.1	U	ug/m³ Air	1.67	3.1	23	0I02022	TO-15	09/02/20 18:50	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	4.1	U	ug/m³ Air	1.67	4.1	29	0I02022	TO-15	09/02/20 18:50	rgg	
1,1,2-Trichloroethane [79-00-5]^	3.2	U	ug/m³ Air	1.67	3.2	23	0I02022	TO-15	09/02/20 18:50	rgg	
1,1-Dichloroethane [75-34-3]^	2.4	U	ug/m³ Air	1.67	2.4	17	0I02022	TO-15	09/02/20 18:50	rgg	
1,1-Dichloroethene [75-35-4]^	2.5	U	ug/m³ Air	1.67	2.5	17	0I02022	TO-15	09/02/20 18:50	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	4.8	U	ug/m³ Air	1.67	4.8	31	0I02022	TO-15	09/02/20 18:50	rgg	J-05
1,2-Dibromoethane [106-93-4]^	4.6	U	ug/m³ Air	1.67	4.6	32	0I02022	TO-15	09/02/20 18:50	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.7	U	ug/m³ Air	1.67	2.7	25	0I02022	TO-15	09/02/20 18:50	rgg	
1,2-Dichloroethane [107-06-2]^	2.5	U	ug/m³ Air	1.67	2.5	17	0I02022	TO-15	09/02/20 18:50	rgg	
1,2-Dichloropropane [78-87-5]^	3.1	U	ug/m³ Air	1.67	3.1	19	0I02022	TO-15	09/02/20 18:50	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.8	U	ug/m³ Air	1.67	2.8	25	0I02022	TO-15	09/02/20 18:50	rgg	
1,4-Dichlorobenzene [106-46-7]^	3.1	U	ug/m³ Air	1.67	3.1	25	0I02022	TO-15	09/02/20 18:50	rgg	
2-Butanone [78-93-3]^	**1.7**	I	ug/m³ Air	1.67	1.6	12	0I02022	TO-15	09/02/20 18:50	rgg	
2-Hexanone [591-78-6]^	2.3	U	ug/m³ Air	1.67	2.3	17	0I02022	TO-15	09/02/20 18:50	rgg	
4-Methyl-2-pentanone [108-10-1]^	2.3	U	ug/m³ Air	1.67	2.3	17	0I02022	TO-15	09/02/20 18:50	rgg	
Acetone [67-64-1]^	**11**	V	ug/m³ Air	1.67	1.4	9.9	0I02022	TO-15	09/02/20 18:50	rgg	J-01, O-01
Benzene [71-43-2]^	1.9	U	ug/m³ Air	1.67	1.9	13	0I02022	TO-15	09/02/20 18:50	rgg	
Bromodichloromethane [75-27-4]^	3.8	U	ug/m³ Air	1.67	3.8	28	0I02022	TO-15	09/02/20 18:50	rgg	
Bromoform [75-25-2]^	6.6	U	ug/m³ Air	1.67	6.6	43	0I02022	TO-15	09/02/20 18:50	rgg	
Bromomethane [74-83-9]^	2.1	U	ug/m³ Air	1.67	2.1	16	0I02022	TO-15	09/02/20 18:50	rgg	
Carbon disulfide [75-15-0]^	2.2	U	ug/m³ Air	1.67	2.2	13	0I02022	TO-15	09/02/20 18:50	rgg	
Carbon tetrachloride [56-23-5]^	2.8	U	ug/m³ Air	1.67	2.8	26	0I02022	TO-15	09/02/20 18:50	rgg	
Chlorobenzene [108-90-7]^	2.5	U	ug/m³ Air	1.67	2.5	19	0I02022	TO-15	09/02/20 18:50	rgg	
Chloroethane [75-00-3]^	1.4	U	ug/m³ Air	1.67	1.4	11	0I02022	TO-15	09/02/20 18:50	rgg	
Chloroform [67-66-3]^	3.1	U	ug/m³ Air	1.67	3.1	20	0I02022	TO-15	09/02/20 18:50	rgg	
Chloromethane [74-87-3]^	1.7	U	ug/m³ Air	1.67	1.7	8.6	0I02022	TO-15	09/02/20 18:50	rgg	
cis-1,2-Dichloroethene [156-59-2]^	**30**		ug/m³ Air	1.67	2.5	17	0I02022	TO-15	09/02/20 18:50	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.9	U	ug/m³ Air	1.67	2.9	19	0I02022	TO-15	09/02/20 18:50	rgg	
Cyclohexane [110-82-7]^	2.0	U	ug/m³ Air	1.67	2.0	14	0I02022	TO-15	09/02/20 18:50	rgg	
Dibromochloromethane [124-48-1]^	4.7	U	ug/m³ Air	1.67	4.7	36	0I02022	TO-15	09/02/20 18:50	rgg	
Dichlorodifluoromethane [75-71-8]	4.5	U	ug/m³ Air	1.67	4.5	21	0I02022	TO-15	09/02/20 18:50	rgg	
Ethylbenzene [100-41-4]^	2.2	U	ug/m³ Air	1.67	2.2	18	0I02022	TO-15	09/02/20 18:50	rgg	
Freon 113 [76-13-1]	**150**		ug/m³ Air	1.67	4.1	32	0I02022	TO-15	09/02/20 18:50	rgg	
Methylene chloride [75-09-2]^	**5.1**	IV	ug/m³ Air	1.67	1.2	15	0I02022	TO-15	09/02/20 18:50	rgg	J-01, O-01
Methyl-tert-butyl ether [1634-04-4]^	2.2	U	ug/m³ Air	1.67	2.2	15	0I02022	TO-15	09/02/20 18:50	rgg	
Styrene [100-42-5]^	2.6	U	ug/m³ Air	1.67	2.6	18	0I02022	TO-15	09/02/20 18:50	rgg	
Tetrachloroethene [127-18-4]^	3.5	U	ug/m³ Air	1.67	3.5	28	0I02022	TO-15	09/02/20 18:50	rgg	
Toluene [108-88-3]^	2.3	U	ug/m³ Air	1.67	2.3	16	0I02022	TO-15	09/02/20 18:50	rgg	
trans-1,2-Dichloroethene [156-60-5]^	2.1	U	ug/m³ Air	1.67	2.1	17	0I02022	TO-15	09/02/20 18:50	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.6	U	ug/m³ Air	1.67	2.6	19	0I02022	TO-15	09/02/20 18:50	rgg	
Trichloroethene [79-01-6]^	**18**	I	ug/m³ Air	1.67	3.1	22	0I02022	TO-15	09/02/20 18:50	rgg	
Trichlorofluoromethane [75-69-4]	3.2	U	ug/m³ Air	1.67	3.2	23	0I02022	TO-15	09/02/20 18:50	rgg	
Vinyl chloride [75-01-4]^	**32**		ug/m³ Air	1.67	2.4	11	0I02022	TO-15	09/02/20 18:50	rgg	
Xylenes (Total) [1330-20-7]^	4.8	U	ug/m³ Air	1.67	4.8	18	0I02022	TO-15	09/02/20 18:50	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

FINAL

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ANALYTICAL RESULTS

Description:	HMFN-VMP1-Field-20200826	**Lab Sample ID:**	AD05339-01	**Received:**	08/28/20 14:00
Matrix:	Air	**Sampled:**	08/26/20 16:30	**Work Order:**	AD05339
Project:	NASA KSC HMFN	**Sampled By:**	Rob Siegel	**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*30*	*1*	*31.0*	*95 %*	*70-130*	*0I02022*	*TO-15*	*09/02/20 18:50*	*rgg*	

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ANALYTICAL RESULTS

Description: HMFN-VMP2-P.Lot-20200826 **Lab Sample ID:** AD05339-02 **Received:** 08/28/20 14:00

Matrix: Air **Sampled:** 08/26/20 16:40 **Work Order:** AD05339

Project: NASA KSC HMFN **Sampled By:** Rob Siegel **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.5	U	ug/m³ Air	1.36	2.5	19	0I02022	TO-15	09/02/20 19:35	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.4	U	ug/m³ Air	1.36	3.4	23	0I02022	TO-15	09/02/20 19:35	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.6	U	ug/m³ Air	1.36	2.6	19	0I02022	TO-15	09/02/20 19:35	rgg	
1,1-Dichloroethane [75-34-3]^	2.0	U	ug/m³ Air	1.36	2.0	14	0I02022	TO-15	09/02/20 19:35	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.36	2.0	13	0I02022	TO-15	09/02/20 19:35	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.9	U	ug/m³ Air	1.36	3.9	25	0I02022	TO-15	09/02/20 19:35	rgg	J-05
1,2-Dibromoethane [106-93-4]^	3.8	U	ug/m³ Air	1.36	3.8	26	0I02022	TO-15	09/02/20 19:35	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.2	U	ug/m³ Air	1.36	2.2	20	0I02022	TO-15	09/02/20 19:35	rgg	
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.36	2.0	14	0I02022	TO-15	09/02/20 19:35	rgg	
1,2-Dichloropropane [78-87-5]^	2.5	U	ug/m³ Air	1.36	2.5	16	0I02022	TO-15	09/02/20 19:35	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.3	U	ug/m³ Air	1.36	2.3	20	0I02022	TO-15	09/02/20 19:35	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.36	2.5	20	0I02022	TO-15	09/02/20 19:35	rgg	
2-Butanone [78-93-3]^	1.3	U	ug/m³ Air	1.36	1.3	10	0I02022	TO-15	09/02/20 19:35	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.36	1.8	14	0I02022	TO-15	09/02/20 19:35	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.36	1.9	14	0I02022	TO-15	09/02/20 19:35	rgg	
Acetone [67-64-1]^	**8.5**	V	ug/m³ Air	1.36	1.1	8.1	0I02022	TO-15	09/02/20 19:35	rgg	J-01, O-01
Benzene [71-43-2]^	1.6	U	ug/m³ Air	1.36	1.6	11	0I02022	TO-15	09/02/20 19:35	rgg	
Bromodichloromethane [75-27-4]^	3.1	U	ug/m³ Air	1.36	3.1	23	0I02022	TO-15	09/02/20 19:35	rgg	
Bromoform [75-25-2]^	5.3	U	ug/m³ Air	1.36	5.3	35	0I02022	TO-15	09/02/20 19:35	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.36	1.7	13	0I02022	TO-15	09/02/20 19:35	rgg	
Carbon disulfide [75-15-0]^	1.8	U	ug/m³ Air	1.36	1.8	11	0I02022	TO-15	09/02/20 19:35	rgg	
Carbon tetrachloride [56-23-5]^	2.3	U	ug/m³ Air	1.36	2.3	21	0I02022	TO-15	09/02/20 19:35	rgg	
Chlorobenzene [108-90-7]^	2.1	U	ug/m³ Air	1.36	2.1	16	0I02022	TO-15	09/02/20 19:35	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.36	1.1	9.0	0I02022	TO-15	09/02/20 19:35	rgg	
Chloroform [67-66-3]^	2.5	U	ug/m³ Air	1.36	2.5	17	0I02022	TO-15	09/02/20 19:35	rgg	
Chloromethane [74-87-3]^	**1.4**	I	ug/m³ Air	1.36	1.3	7.0	0I02022	TO-15	09/02/20 19:35	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.36	2.0	13	0I02022	TO-15	09/02/20 19:35	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.36	2.3	15	0I02022	TO-15	09/02/20 19:35	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.36	1.6	12	0I02022	TO-15	09/02/20 19:35	rgg	
Dibromochloromethane [124-48-1]^	3.8	U	ug/m³ Air	1.36	3.8	29	0I02022	TO-15	09/02/20 19:35	rgg	
Dichlorodifluoromethane [75-71-8]	3.7	U	ug/m³ Air	1.36	3.7	17	0I02022	TO-15	09/02/20 19:35	rgg	
Ethylbenzene [100-41-4]^	**4.2**	I	ug/m³ Air	1.36	1.8	15	0I02022	TO-15	09/02/20 19:35	rgg	
Freon 113 [76-13-1]	3.3	U	ug/m³ Air	1.36	3.3	26	0I02022	TO-15	09/02/20 19:35	rgg	
Methylene chloride [75-09-2]^	**23**	V	ug/m³ Air	1.36	0.94	12	0I02022	TO-15	09/02/20 19:35	rgg	QB-01
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.36	1.8	12	0I02022	TO-15	09/02/20 19:35	rgg	
Styrene [100-42-5]^	2.1	U	ug/m³ Air	1.36	2.1	14	0I02022	TO-15	09/02/20 19:35	rgg	
Tetrachloroethene [127-18-4]^	2.9	U	ug/m³ Air	1.36	2.9	23	0I02022	TO-15	09/02/20 19:35	rgg	
Toluene [108-88-3]^	**27**		ug/m³ Air	1.36	1.9	13	0I02022	TO-15	09/02/20 19:35	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.36	1.7	13	0I02022	TO-15	09/02/20 19:35	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.1	U	ug/m³ Air	1.36	2.1	15	0I02022	TO-15	09/02/20 19:35	rgg	
Trichloroethene [79-01-6]^	2.6	U	ug/m³ Air	1.36	2.6	18	0I02022	TO-15	09/02/20 19:35	rgg	
Trichlorofluoromethane [75-69-4]	2.6	U	ug/m³ Air	1.36	2.6	19	0I02022	TO-15	09/02/20 19:35	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.36	1.9	8.7	0I02022	TO-15	09/02/20 19:35	rgg	
Xylenes (Total) [1330-20-7]^	**25**		ug/m³ Air	1.36	3.9	15	0I02022	TO-15	09/02/20 19:35	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

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ANALYTICAL RESULTS

Description:	HMFN-VMP2-P.Lot-20200826	**Lab Sample ID:**	AD05339-02	**Received:**	08/28/20 14:00
Matrix:	Air	**Sampled:**	08/26/20 16:40	**Work Order:**	AD05339
Project:	NASA KSC HMFN	**Sampled By:**	Rob Siegel	**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*31*	*1*	*31.0*	*100 %*	*70-130*	*0I02022*	*TO-15*	*09/02/20 19:35*	*rgg*	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0I02022 - NO PREP 2

Blank (0I02022-BLK1) Prepared: 09/01/2020 21:30 Analyzed: 09/02/2020 01:20

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1,2,2-Tetrachloroethane	2.5	U	17	ug/m³ Air							
1,1,2-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1-Dichloroethane	1.5	U	10	ug/m³ Air							
1,1-Dichloroethene	1.5	U	9.9	ug/m³ Air							
1,2,4-Trichlorobenzene	2.9	U	19	ug/m³ Air							
1,2-Dibromoethane	2.8	U	19	ug/m³ Air							
1,2-Dichlorobenzene	1.6	U	15	ug/m³ Air							
1,2-Dichloroethane	1.5	U	10	ug/m³ Air							
1,2-Dichloropropane	1.8	U	12	ug/m³ Air							
1,3-Dichlorobenzene	1.7	U	15	ug/m³ Air							
1,4-Dichlorobenzene	1.9	U	15	ug/m³ Air							
2-Butanone	0.94	U	7.4	ug/m³ Air							
2-Hexanone	1.4	U	10	ug/m³ Air							
4-Methyl-2-pentanone	1.4	U	10	ug/m³ Air							
Acetone	**1.2**	**I**	5.9	ug/m³ Air							I-01, O-01, QB-01
Benzene	1.2	U	8.0	ug/m³ Air							
Bromodichloromethane	2.3	U	17	ug/m³ Air							
Bromoform	3.9	U	26	ug/m³ Air							
Bromomethane	1.3	U	9.7	ug/m³ Air							
Carbon disulfide	1.3	U	7.8	ug/m³ Air							
Carbon tetrachloride	1.7	U	16	ug/m³ Air							
Chlorobenzene	1.5	U	12	ug/m³ Air							
Chloroethane	0.84	U	6.6	ug/m³ Air							
Chloroform	1.9	U	12	ug/m³ Air							
Chloromethane	0.99	U	5.2	ug/m³ Air							
cis-1,2-Dichloroethene	1.5	U	9.9	ug/m³ Air							
cis-1,3-Dichloropropene	1.7	U	11	ug/m³ Air							
Cyclohexane	1.2	U	8.6	ug/m³ Air							
Dibromochloromethane	2.8	U	21	ug/m³ Air							
Dichlorodifluoromethane	2.7	U	12	ug/m³ Air							
Ethylbenzene	1.3	U	11	ug/m³ Air							
Freon 113	2.5	U	19	ug/m³ Air							
Methylene chloride	**0.89**	**I**	8.7	ug/m³ Air							J-01, O-01, QE
Methyl-tert-butyl ether	1.3	U	9.0	ug/m³ Air							
Styrene	1.5	U	11	ug/m³ Air							
Tetrachloroethene	2.1	U	17	ug/m³ Air							
Toluene	1.4	U	9.4	ug/m³ Air							
trans-1,2-Dichloroethene	1.3	U	9.9	ug/m³ Air							
trans-1,3-Dichloropropene	1.5	U	11	ug/m³ Air							
Trichloroethene	1.9	U	13	ug/m³ Air							
Trichlorofluoromethane	1.9	U	14	ug/m³ Air							
Vinyl chloride	1.4	U	6.4	ug/m³ Air							
Xylenes (Total)	2.9	U	11	ug/m³ Air							
4-Bromofluorobenzene	*29*			*ppbv*	*31.0*		*94*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0I02022 - NO PREP 2 - Continued

LCS (0I02022-BS1) Prepared: 09/01/2020 21:30 Analyzed: 09/01/2020 23:07

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	56		14	ug/m³ Air	54.6		102	70-130			
1,1,2,2-Tetrachloroethane	76		17	ug/m³ Air	68.7		111	70-130			
1,1,2-Trichloroethane	55		14	ug/m³ Air	54.6		100	70-130			
1,1-Dichloroethane	42		10	ug/m³ Air	40.5		103	70-130			
1,1-Dichloroethene	43		9.9	ug/m³ Air	39.7		108	70-130			
1,2,4-Trichlorobenzene	83		19	ug/m³ Air	74.2		111	70-130			
1,2-Dibromoethane	82		19	ug/m³ Air	76.8		106	70-130			
1,2-Dichlorobenzene	72		15	ug/m³ Air	60.1		120	70-130			
1,2-Dichloroethane	42		10	ug/m³ Air	40.5		103	70-130			
1,2-Dichloropropane	47		12	ug/m³ Air	46.2		102	70-130			
1,3-Dichlorobenzene	70		15	ug/m³ Air	60.1		117	70-130			
1,4-Dichlorobenzene	71		15	ug/m³ Air	60.1		117	70-130			
2-Butanone	30		7.4	ug/m³ Air	29.5		103	70-130			
2-Hexanone	44		10	ug/m³ Air	41.0		108	70-130			
4-Methyl-2-pentanone	44		10	ug/m³ Air	41.0		108	70-130			
Acetone	24		5.9	ug/m³ Air	23.8		100	70-130			
Benzene	31		8.0	ug/m³ Air	32.0		97	70-130			
Bromodichloromethane	68		17	ug/m³ Air	67.0		102	70-130			
Bromoform	110		26	ug/m³ Air	103		105	70-130			
Bromomethane	40		9.7	ug/m³ Air	38.8		103	70-130			
Carbon disulfide	31		7.8	ug/m³ Air	31.1		101	70-130			
Carbon tetrachloride	55		16	ug/m³ Air	62.9		87	70-130			
Chlorobenzene	46		12	ug/m³ Air	46.0		101	70-130			
Chloroethane	28		6.6	ug/m³ Air	26.4		106	70-130			
Chloroform	51		12	ug/m³ Air	48.8		104	70-130			
Chloromethane	22		5.2	ug/m³ Air	20.7		106	70-130			
cis-1,2-Dichloroethene	41		9.9	ug/m³ Air	39.6		104	70-130			
cis-1,3-Dichloropropene	47		11	ug/m³ Air	45.4		104	70-130			
Cyclohexane	36		8.6	ug/m³ Air	34.4		105	70-130			
Dibromochloromethane	87		21	ug/m³ Air	85.2		102	70-130			
Dichlorodifluoromethane	55		12	ug/m³ Air	49.5		111	70-130			
Ethylbenzene	42		11	ug/m³ Air	43.4		98	70-130			
Freon 113	79		19	ug/m³ Air	76.6		103	70-130			
m,p-Xylenes	82		22	ug/m³ Air	86.8		94	70-130			
Methylene chloride	33		8.7	ug/m³ Air	34.7		96	70-130			
Methyl-tert-butyl ether	36		9.0	ug/m³ Air	36.1		100	70-130			
o-Xylene	43		11	ug/m³ Air	43.4		100	70-130			
Styrene	41		11	ug/m³ Air	42.6		96	70-130			
Tetrachloroethene	68		17	ug/m³ Air	67.8		100	70-130			
Toluene	35		9.4	ug/m³ Air	37.7		94	70-130			
trans-1,2-Dichloroethene	41		9.9	ug/m³ Air	39.6		104	70-130			
trans-1,3-Dichloropropene	52		11	ug/m³ Air	45.4		114	70-130			
Trichloroethene	53		13	ug/m³ Air	53.7		99	70-130			
Trichlorofluoromethane	63		14	ug/m³ Air	56.2		111	70-130			
Vinyl chloride	28		6.4	ug/m³ Air	25.6		110	70-130			
Xylenes (Total)	130		11	ug/m³ Air	130		96	70-130			
4-Bromofluorobenzene	*31*			*ppbv*	*31.0*		*101*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0I02022 - NO PREP 2 - Continued

LCS Dup (0I02022-BSD1) Prepared: 09/01/2020 21:30 Analyzed: 09/01/2020 23:48

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	56		14	ug/m³ Air	54.6		103	70-130	0.8	25	
1,1,2,2-Tetrachloroethane	76		17	ug/m³ Air	68.7		111	70-130	0.3	25	
1,1,2-Trichloroethane	55		14	ug/m³ Air	54.6		100	70-130	0.02	25	
1,1-Dichloroethane	42		10	ug/m³ Air	40.5		103	70-130	0.4	25	
1,1-Dichloroethene	42		9.9	ug/m³ Air	39.7		106	70-130	1	25	
1,2,4-Trichlorobenzene	84		19	ug/m³ Air	74.2		113	70-130	1	25	
1,2-Dibromoethane	81		19	ug/m³ Air	76.8		106	70-130	0.5	25	
1,2-Dichlorobenzene	72		15	ug/m³ Air	60.1		119	70-130	0.3	25	
1,2-Dichloroethane	41		10	ug/m³ Air	40.5		102	70-130	1	25	
1,2-Dichloropropane	47		12	ug/m³ Air	46.2		101	70-130	0.4	25	
1,3-Dichlorobenzene	71		15	ug/m³ Air	60.1		118	70-130	1	25	
1,4-Dichlorobenzene	71		15	ug/m³ Air	60.1		118	70-130	0.4	25	
2-Butanone	31		7.4	ug/m³ Air	29.5		104	70-130	0.9	25	
2-Hexanone	46		10	ug/m³ Air	41.0		112	70-130	4	25	
4-Methyl-2-pentanone	45		10	ug/m³ Air	41.0		111	70-130	2	25	
Acetone	24		5.9	ug/m³ Air	23.8		100	70-130	0.6	25	
Benzene	31		8.0	ug/m³ Air	32.0		98	70-130	1	25	
Bromodichloromethane	69		17	ug/m³ Air	67.0		102	70-130	0.3	25	
Bromoform	110		26	ug/m³ Air	103		103	70-130	1	25	
Bromomethane	39		9.7	ug/m³ Air	38.8		101	70-130	2	25	
Carbon disulfide	31		7.8	ug/m³ Air	31.1		100	70-130	1	25	
Carbon tetrachloride	54		16	ug/m³ Air	62.9		86	70-130	0.9	25	
Chlorobenzene	47		12	ug/m³ Air	46.0		101	70-130	0.6	25	
Chloroethane	28		6.6	ug/m³ Air	26.4		105	70-130	0.9	25	
Chloroform	50		12	ug/m³ Air	48.8		103	70-130	1	25	
Chloromethane	21		5.2	ug/m³ Air	20.7		104	70-130	2	25	
cis-1,2-Dichloroethene	41		9.9	ug/m³ Air	39.6		103	70-130	1	25	
cis-1,3-Dichloropropene	48		11	ug/m³ Air	45.4		105	70-130	1	25	
Cyclohexane	35		8.6	ug/m³ Air	34.4		103	70-130	2	25	
Dibromochloromethane	88		21	ug/m³ Air	85.2		103	70-130	0.4	25	
Dichlorodifluoromethane	53		12	ug/m³ Air	49.5		108	70-130	3	25	
Ethylbenzene	43		11	ug/m³ Air	43.4		99	70-130	0.9	25	
Freon 113	77		19	ug/m³ Air	76.6		101	70-130	1	25	
m,p-Xylenes	82		22	ug/m³ Air	86.8		94	70-130	0.1	25	
Methylene chloride	33		8.7	ug/m³ Air	34.7		96	70-130	0.8	25	
Methyl-tert-butyl ether	35		9.0	ug/m³ Air	36.1		98	70-130	1	25	
o-Xylene	43		11	ug/m³ Air	43.4		100	70-130	0.2	25	
Styrene	41		11	ug/m³ Air	42.6		96	70-130	0.6	25	
Tetrachloroethene	69		17	ug/m³ Air	67.8		102	70-130	2	25	
Toluene	36		9.4	ug/m³ Air	37.7		94	70-130	0.6	25	
trans-1,2-Dichloroethene	41		9.9	ug/m³ Air	39.6		103	70-130	0.7	25	
trans-1,3-Dichloropropene	54		11	ug/m³ Air	45.4		119	70-130	5	25	
Trichloroethene	53		13	ug/m³ Air	53.7		99	70-130	0.3	25	
Trichlorofluoromethane	61		14	ug/m³ Air	56.2		109	70-130	2	25	
Vinyl chloride	27		6.4	ug/m³ Air	25.6		107	70-130	3	25	
Xylenes (Total)	130		11	ug/m³ Air	130		96	70-130	0.1	25	
4-Bromofluorobenzene	*31*			*ppbv*	*31.0*		*100*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
J-01	Result may be biased high due to positive results in the associated method blank at a concentration above the MDL and/or greater than one-half the MRL.
J-05	Result may be biased low. Associated calibration verification standard did not meet the minimum control limit.
O-01	This compound is a common laboratory contaminant.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result. There is minimal impact to the data.
QB-02	The method blank contains analyte at a concentration above the MDL and/or greater than one-half the MRL. The analyte was not detected in the sample.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

Tetra Tech, Inc.

A1005339

CHAIN OF CUSTODY | NUMBER No. 1420 | PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	HMFN	Chris Hook	724 766 1043	Enco
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Robert Stegall		Dan Forester	304 780 1426	
		CARRIER/WAYBILL NUMBER		CITY, STATE
				Orlando, Fl

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS TO-15						COMMENTS
8·26	830/1630	HMFN-VMP1-Field2020 08 26	F_{HMFN}	–	–	Air	8 hr C	1	X		Summa	JS-068	Reg	SN#	06688		
8·26	840/1640	HMFN-VMP2-Plot 2020 08 26	HMFN PL	–	–	Air	8 hr C	1	X		Summa	JS-070	Reg	SN#	06450		

1. RELINQUISHED BY		DATE	TIME	1. RECEIVED BY	DATE / TIME
2. RELINQUISHED BY	TetraTech TETRATECH	DATE 8/28/20	TIME 1400	2. RECEIVED BY James W Drayer	DATE 8/28/20 TIME 1400
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY	DATE / TIME

COMMENTS: 1B-543 35.3°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

8/31/2020

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN / 112G08982
Purchase Order # : 1170718

Lab Reference # : AD05339 Lab Receipt Date: 28-Aug-20 14:00
Anticipated ***(Estimated)*** Completion Date: 04-Sep-20 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMFN-VMP1-Field-20200826(Lab ID: AD05339-01), Matrix: Air, Sampled: 26-Aug-20 16:30 (GMT-05:00) Eastern Time (US &			
Sample Comments: 8hr regulator			
TO15 (SUMMA)	5	25-Sep-20 23:59	Received
Sample ID: HMFN-VMP2-P.Lot-20200826(Lab ID: AD05339-02), Matrix: Air, Sampled: 26-Aug-20 16:40 (GMT-05:00) Eastern Time (US &			
Sample Comments: 8hr regulator			
TO15 (SUMMA)	5	25-Sep-20 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AD05339-TE015

CLASS: 06_VOA_AIR

METHOD: TO-15

ANALYSES DATA PACKAGE COVER PAGE

TO-15

Laboratory: ENCO Orlando

SDG: AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Client Sample Id:	Lab Sample Id:
HMFN-VMP1-Field-20200826	AD05339-01
HMFN-VMP2-P.Lot-20200826	AD05339-02

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP1-Field-20200826

Laboratory: ENCO Orlando SDG: AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Air Laboratory ID: AD05339-01 File ID: 207I1041.D

Sampled: 08/26/20 16:30 Prepared: 09/02/20 07:15 Analyzed: 09/02/20 18:50

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 0I02022 Sequence: AA62257 Calibration: 2009010 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.67	4.5	UD	4.5	21
74-87-3	Chloromethane	1.67	1.7	UD	1.7	8.6
75-01-4	Vinyl chloride	1.67	32	D	2.4	11
74-83-9	Bromomethane	1.67	2.1	UD	2.1	16
75-00-3	Chloroethane	1.67	1.4	UD	1.4	11
75-69-4	Trichlorofluoromethane	1.67	3.2	UD	3.2	23
75-34-3	1,1-Dichloroethane	1.67	2.4	UD	2.4	17
67-64-1	Acetone	1.67	11	BD	1.4	9.9
75-15-0	Carbon disulfide	1.67	2.2	UD	2.2	13
75-09-2	Methylene chloride	1.67	5.1	JBD	1.2	15
76-13-1	Freon 113	1.67	150	DE	4.1	32
156-60-5	trans-1,2-Dichloroethene	1.67	2.1	UD	2.1	17
1634-04-4	Methyl-tert-butyl ether	1.67	2.2	UD	2.2	15
75-35-4	1,1-Dichloroethene	1.67	2.5	UD	2.5	17
156-59-2	cis-1,2-Dichloroethene	1.67	30	D	2.5	17
78-93-3	2-Butanone	1.67	1.7	JD	1.6	12
67-66-3	Chloroform	1.67	3.1	UD	3.1	20
107-06-2	1,2-Dichloroethane	1.67	2.5	UD	2.5	17
71-55-6	1,1,1-Trichloroethane	1.67	3.1	UD	3.1	23
110-82-7	Cyclohexane	1.67	2.0	UD	2.0	14
56-23-5	Carbon tetrachloride	1.67	2.8	UD	2.8	26
71-43-2	Benzene	1.67	1.9	UD	1.9	13
78-87-5	1,2-Dichloropropane	1.67	3.1	UD	3.1	19
79-01-6	Trichloroethene	1.67	18	JD	3.1	22
75-27-4	Bromodichloromethane	1.67	3.8	UD	3.8	28
10061-01-5	cis-1,3-Dichloropropene	1.67	2.9	UD	2.9	19
10061-02-6	trans-1,3-Dichloropropene	1.67	2.6	UD	2.6	19
79-00-5	1,1,2-Trichloroethane	1.67	3.2	UD	3.2	23
108-10-1	4-Methyl-2-pentanone	1.67	2.3	UD	2.3	17
108-88-3	Toluene	1.67	2.3	UD	2.3	16
591-78-6	2-Hexanone	1.67	2.3	UD	2.3	17
106-93-4	1,2-Dibromoethane	1.67	4.6	UD	4.6	32
127-18-4	Tetrachloroethene	1.67	3.5	UD	3.5	28
124-48-1	Dibromochloromethane	1.67	4.7	UD	4.7	36
108-90-7	Chlorobenzene	1.67	2.5	UD	2.5	19
100-41-4	Ethylbenzene	1.67	2.2	UD	2.2	18
1330-20-7	Xylenes (Total)	1.67	4.8	UD	4.8	18
100-42-5	Styrene	1.67	2.6	UD	2.6	18
75-25-2	Bromoform	1.67	6.6	UD	6.6	43
79-34-5	1,1,2,2-Tetrachloroethane	1.67	4.1	UD	4.1	29
541-73-1	1,3-Dichlorobenzene	1.67	2.8	UD	2.8	25

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP1-Field-20200826

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Air
Laboratory ID: AD05339-01
File ID: 207I1041.D
Sampled: 08/26/20 16:30
Prepared: 09/02/20 07:15
Analyzed: 09/02/20 18:50
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 0I02022
Sequence: AA62257
Calibration: 2009010
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.67	3.1	UD	3.1	25
95-50-1	1,2-Dichlorobenzene	1.67	2.7	UD	2.7	25
120-82-1	1,2,4-Trichlorobenzene	1.67	4.8	UD	4.8	31

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	30	95	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	630631	11.03	720455	11.03	
1,4-Difluorobenzene	2213254	12.53	2458620	12.53	
Chlorobenzene-d5	1732967	15.93	1849264	15.93	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP2-P.Lot-20200826

Laboratory: ENCO Orlando SDG: AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Air Laboratory ID: AD05339-02 File ID: 207I1042.D

Sampled: 08/26/20 16:40 Prepared: 09/02/20 07:15 Analyzed: 09/02/20 19:35

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 0I02022 Sequence: AA62257 Calibration: 2009010 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.36	3.7	UD	3.7	17
74-87-3	Chloromethane	1.36	1.4	JD	1.3	7.0
75-01-4	Vinyl chloride	1.36	1.9	UD	1.9	8.7
74-83-9	Bromomethane	1.36	1.7	UD	1.7	13
75-00-3	Chloroethane	1.36	1.1	UD	1.1	9.0
75-69-4	Trichlorofluoromethane	1.36	2.6	UD	2.6	19
75-34-3	1,1-Dichloroethane	1.36	2.0	UD	2.0	14
67-64-1	Acetone	1.36	8.5	BD	1.1	8.1
75-15-0	Carbon disulfide	1.36	1.8	UD	1.8	11
75-09-2	Methylene chloride	1.36	23	BD	0.94	12
76-13-1	Freon 113	1.36	3.3	UD	3.3	26
156-60-5	trans-1,2-Dichloroethene	1.36	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.36	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.36	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.36	2.0	UD	2.0	13
78-93-3	2-Butanone	1.36	1.3	UD	1.3	10
67-66-3	Chloroform	1.36	2.5	UD	2.5	17
107-06-2	1,2-Dichloroethane	1.36	2.0	UD	2.0	14
71-55-6	1,1,1-Trichloroethane	1.36	2.5	UD	2.5	19
110-82-7	Cyclohexane	1.36	1.6	UD	1.6	12
56-23-5	Carbon tetrachloride	1.36	2.3	UD	2.3	21
71-43-2	Benzene	1.36	1.6	UD	1.6	11
78-87-5	1,2-Dichloropropane	1.36	2.5	UD	2.5	16
79-01-6	Trichloroethene	1.36	2.6	UD	2.6	18
75-27-4	Bromodichloromethane	1.36	3.1	UD	3.1	23
10061-01-5	cis-1,3-Dichloropropene	1.36	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.36	2.1	UD	2.1	15
79-00-5	1,1,2-Trichloroethane	1.36	2.6	UD	2.6	19
108-10-1	4-Methyl-2-pentanone	1.36	1.9	UD	1.9	14
108-88-3	Toluene	1.36	27	D	1.9	13
591-78-6	2-Hexanone	1.36	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.36	3.8	UD	3.8	26
127-18-4	Tetrachloroethene	1.36	2.9	UD	2.9	23
124-48-1	Dibromochloromethane	1.36	3.8	UD	3.8	29
108-90-7	Chlorobenzene	1.36	2.1	UD	2.1	16
100-41-4	Ethylbenzene	1.36	4.2	JD	1.8	15
1330-20-7	Xylenes (Total)	1.36	25	D	3.9	15
100-42-5	Styrene	1.36	2.1	UD	2.1	14
75-25-2	Bromoform	1.36	5.3	UD	5.3	35
79-34-5	1,1,2,2-Tetrachloroethane	1.36	3.4	UD	3.4	23
541-73-1	1,3-Dichlorobenzene	1.36	2.3	UD	2.3	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP2-P.Lot-20200826

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Air
Laboratory ID: AD05339-02
File ID: 207I1042.D
Sampled: 08/26/20 16:40
Prepared: 09/02/20 07:15
Analyzed: 09/02/20 19:35
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 0I02022
Sequence: AA62257
Calibration: 2009010
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.36	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.36	2.2	UD	2.2	20
120-82-1	1,2,4-Trichlorobenzene	1.36	3.9	UD	3.9	25

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	31	100	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	641509	11.04	720455	11.03	
1,4-Difluorobenzene	2264553	12.53	2458620	12.53	
Chlorobenzene-d5	1829087	15.93	1849264	15.93	

* Values outside of QC limits

HOLDING TIME SUMMARY

TO-15

Laboratory: ENCO Orlando

SDG: AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMFN-VMP1-Field-20200826	08/26/20 16:30	08/28/20 14:00	09/02/20 07:15	6.61	NA	09/02/20 18:50	7.00	30.00	
HMFN-VMP2-P.Lot-20200826	08/26/20 16:40	08/28/20 14:00	09/02/20 07:15	6.61	NA	09/02/20 19:35	7.00	30.00	

PREPARATION BATCH SUMMARY

TO-15

Laboratory: ENCO Orlando SDG: AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Batch: 0I02022 Batch Matrix: Air Preparation: NO PREP 2

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	0I02022-BLK1	207I1028.D	09/01/20 21:30	
LCS	0I02022-BS1	207I1025.D	09/01/20 21:30	
LCS Dup	0I02022-BSD1	207I1026.D	09/01/20 21:30	
HMFN-VMP1-Field-20200826	AD05339-01	207I1041.D	09/02/20 07:15	
HMFN-VMP2-P.Lot-20200826	AD05339-02	207I1042.D	09/02/20 07:15	

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Air	Laboratory ID:	0I02022-BLK1	File ID:	207I1028.D
Prepared:	09/01/20 21:30	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	09/02/20 01:20	Instrument:	OVGCMS7		
Batch:	0I02022	Sequence:	AA62257	Calibration:	2009010

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
75-71-8	Dichlorodifluoromethane	2.7	U
74-87-3	Chloromethane	0.99	U
75-01-4	Vinyl chloride	1.4	U
74-83-9	Bromomethane	1.3	U
75-00-3	Chloroethane	0.84	U
75-69-4	Trichlorofluoromethane	1.9	U
75-34-3	1,1-Dichloroethane	1.5	U
67-64-1	Acetone	1.2	J
75-15-0	Carbon disulfide	1.3	U
75-09-2	Methylene chloride	0.89	J
76-13-1	Freon 113	2.5	U
156-60-5	trans-1,2-Dichloroethene	1.3	U
1634-04-4	Methyl-tert-butyl ether	1.3	U
75-35-4	1,1-Dichloroethene	1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	U
78-93-3	2-Butanone	0.94	U
67-66-3	Chloroform	1.9	U
107-06-2	1,2-Dichloroethane	1.5	U
71-55-6	1,1,1-Trichloroethane	1.9	U
110-82-7	Cyclohexane	1.2	U
56-23-5	Carbon tetrachloride	1.7	U
71-43-2	Benzene	1.2	U
78-87-5	1,2-Dichloropropane	1.8	U
79-01-6	Trichloroethene	1.9	U
75-27-4	Bromodichloromethane	2.3	U
10061-01-5	cis-1,3-Dichloropropene	1.7	U
10061-02-6	trans-1,3-Dichloropropene	1.5	U
79-00-5	1,1,2-Trichloroethane	1.9	U
108-10-1	4-Methyl-2-pentanone	1.4	U
108-88-3	Toluene	1.4	U

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Air	Laboratory ID:	0I02022-BLK1	File ID:	207I1028.D
Prepared:	09/01/20 21:30	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	09/02/20 01:20	Instrument:	OVGCMS7		
Batch:	0I02022	Sequence:	AA62257	Calibration:	2009010

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
591-78-6	2-Hexanone	1.4	U
106-93-4	1,2-Dibromoethane	2.8	U
127-18-4	Tetrachloroethene	2.1	U
124-48-1	Dibromochloromethane	2.8	U
108-90-7	Chlorobenzene	1.5	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (Total)	2.9	U
100-42-5	Styrene	1.5	U
75-25-2	Bromoform	3.9	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	1.7	U
106-46-7	1,4-Dichlorobenzene	1.9	U
95-50-1	1,2-Dichlorobenzene	1.6	U
120-82-1	1,2,4-Trichlorobenzene	2.9	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	94	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	783865	11.02	720455	11.03	
1,4-Difluorobenzene	2677214	12.52	2458620	12.53	
Chlorobenzene-d5	2026716	15.92	1849264	15.93	

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I02022	Laboratory ID:	0I02022-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	49.5	55	111	70 - 130
Chloromethane	20.7	22	106	70 - 130
Vinyl chloride	25.6	28	110	70 - 130
Bromomethane	38.8	40	103	70 - 130
Chloroethane	26.4	28	106	70 - 130
Trichlorofluoromethane	56.2	63	111	70 - 130
1,1-Dichloroethane	40.5	42	103	70 - 130
Acetone	23.8	24	100	70 - 130
Carbon disulfide	31.1	31	101	70 - 130
Methylene chloride	34.7	33	96	70 - 130
Freon 113	76.6	79	103	70 - 130
trans-1,2-Dichloroethene	39.6	41	104	70 - 130
Methyl-tert-butyl ether	36.1	36	100	70 - 130
1,1-Dichloroethene	39.7	43	108	70 - 130
cis-1,2-Dichloroethene	39.6	41	104	70 - 130
2-Butanone	29.5	30	103	70 - 130
Chloroform	48.8	51	104	70 - 130
1,2-Dichloroethane	40.5	42	103	70 - 130
1,1,1-Trichloroethane	54.6	56	102	70 - 130
Cyclohexane	34.4	36	105	70 - 130
Carbon tetrachloride	62.9	55	87	70 - 130
Benzene	32.0	31	97	70 - 130
1,2-Dichloropropane	46.2	47	102	70 - 130
Trichloroethene	53.7	53	99	70 - 130
Bromodichloromethane	67.0	68	102	70 - 130
cis-1,3-Dichloropropene	45.4	47	104	70 - 130
trans-1,3-Dichloropropene	45.4	52	114	70 - 130
1,1,2-Trichloroethane	54.6	55	100	70 - 130
4-Methyl-2-pentanone	41.0	44	108	70 - 130
Toluene	37.7	35	94	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I02022	Laboratory ID:	0I02022-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
2-Hexanone	41.0	44	108	70 - 130
1,2-Dibromoethane	76.8	82	106	70 - 130
Tetrachloroethene	67.8	68	100	70 - 130
Dibromochloromethane	85.2	87	102	70 - 130
Chlorobenzene	46.0	46	101	70 - 130
Ethylbenzene	43.4	42	98	70 - 130
m,p-Xylenes	86.8	82	94	70 - 130
o-Xylene	43.4	43	100	70 - 130
Xylenes (Total)	130	130	96	70 - 130
Styrene	42.6	41	96	70 - 130
Bromoform	103	110	105	70 - 130
1,1,2,2-Tetrachloroethane	68.7	76	111	70 - 130
1,3-Dichlorobenzene	60.1	70	117	70 - 130
1,4-Dichlorobenzene	60.1	71	117	70 - 130
1,2-Dichlorobenzene	60.1	72	120	70 - 130
1,2,4-Trichlorobenzene	74.2	83	111	70 - 130

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	49.5	53	108	3	25	70 - 130
Chloromethane	20.7	21	104	2	25	70 - 130
Vinyl chloride	25.6	27	107	3	25	70 - 130
Bromomethane	38.8	39	101	2	25	70 - 130
Chloroethane	26.4	28	105	0.9	25	70 - 130
Trichlorofluoromethane	56.2	61	109	2	25	70 - 130
1,1-Dichloroethane	40.5	42	103	0.4	25	70 - 130
Acetone	23.8	24	100	0.6	25	70 - 130
Carbon disulfide	31.1	31	100	1	25	70 - 130
Methylene chloride	34.7	33	96	0.8	25	70 - 130
Freon 113	76.6	77	101	1	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I02022	Laboratory ID:	0I02022-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,2-Dichloroethene	39.6	41	103	0.7	25	70 - 130
Methyl-tert-butyl ether	36.1	35	98	1	25	70 - 130
1,1-Dichloroethene	39.7	42	106	1	25	70 - 130
cis-1,2-Dichloroethene	39.6	41	103	1	25	70 - 130
2-Butanone	29.5	31	104	0.9	25	70 - 130
Chloroform	48.8	50	103	1	25	70 - 130
1,2-Dichloroethane	40.5	41	102	1	25	70 - 130
1,1,1-Trichloroethane	54.6	56	103	0.8	25	70 - 130
Cyclohexane	34.4	35	103	2	25	70 - 130
Carbon tetrachloride	62.9	54	86	0.9	25	70 - 130
Benzene	32.0	31	98	1	25	70 - 130
1,2-Dichloropropane	46.2	47	101	0.4	25	70 - 130
Trichloroethene	53.7	53	99	0.3	25	70 - 130
Bromodichloromethane	67.0	69	102	0.3	25	70 - 130
cis-1,3-Dichloropropene	45.4	48	105	1	25	70 - 130
trans-1,3-Dichloropropene	45.4	54	119	5	25	70 - 130
1,1,2-Trichloroethane	54.6	55	100	0.02	25	70 - 130
4-Methyl-2-pentanone	41.0	45	111	2	25	70 - 130
Toluene	37.7	36	94	0.6	25	70 - 130
2-Hexanone	41.0	46	112	4	25	70 - 130
1,2-Dibromoethane	76.8	81	106	0.5	25	70 - 130
Tetrachloroethene	67.8	69	102	2	25	70 - 130
Dibromochloromethane	85.2	88	103	0.4	25	70 - 130
Chlorobenzene	46.0	47	101	0.6	25	70 - 130
Ethylbenzene	43.4	43	99	0.9	25	70 - 130
m,p-Xylenes	86.8	82	94	0.1	25	70 - 130
o-Xylene	43.4	43	100	0.2	25	70 - 130
Xylenes (Total)	130	130	96	0.1	25	70 - 130
Styrene	42.6	41	96	0.6	25	70 - 130
Bromoform	103	110	103	1	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I02022	Laboratory ID:	0I02022-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,2,2-Tetrachloroethane	68.7	76	111	0.3	25	70 - 130
1,3-Dichlorobenzene	60.1	71	118	1	25	70 - 130
1,4-Dichlorobenzene	60.1	71	118	0.4	25	70 - 130
1,2-Dichlorobenzene	60.1	72	119	0.3	25	70 - 130
1,2,4-Trichlorobenzene	74.2	84	113	1	25	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA62229
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA62229-SCV1)			Lab File ID: 207I1017.D		Analyzed: 09/01/20 17:14			
4-Bromofluorobenzene	31.0	103	0 - 200	17.36	17.36	0.0000	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA62257
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA62257-CCV1)			Lab File ID: 207I1024.D		Analyzed: 09/01/20 22:28			
4-Bromofluorobenzene	31.0	102	0 - 200	17.35	17.36	-0.0100	+/-1.0	
LCS (0I02022-BS1)			Lab File ID: 207I1025.D		Analyzed: 09/01/20 23:07			
4-Bromofluorobenzene	31.0	101	70 - 130	17.36	17.36	0.0000	+/-1.0	
LCS Dup (0I02022-BSD1)			Lab File ID: 207I1026.D		Analyzed: 09/01/20 23:48			
4-Bromofluorobenzene	31.0	100	70 - 130	17.36	17.36	0.0000	+/-1.0	
Blank (0I02022-BLK1)			Lab File ID: 207I1028.D		Analyzed: 09/02/20 01:20			
4-Bromofluorobenzene	31.0	94	70 - 130	17.36	17.36	0.0000	+/-1.0	
Instrument RL Check (AA62257-CRL1)			Lab File ID: 207I1030.D		Analyzed: 09/02/20 07:22			
4-Bromofluorobenzene	31.0	96	0 - 200	17.36	17.36	0.0000	+/-1.0	
HMFN-VMP1-Field-20200826 (AD05339-01)			Lab File ID: 207I1041.D		Analyzed: 09/02/20 18:50			
4-Bromofluorobenzene	31.0	95	70 - 130	17.36	17.36	0.0000	+/-1.0	
HMFN-VMP2-P.Lot-20200826 (AD05339-02)			Lab File ID: 207I1042.D		Analyzed: 09/02/20 19:35			
4-Bromofluorobenzene	31.0	100	70 - 130	17.36	17.36	0.0000	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA62229
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA62229-CAL1)			Lab File ID: 207I1004.D			Analyzed: 09/01/20 08:20			
Bromochloromethane	754508	11.02	720455	11.03	105	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1969336	15.92	1849264	15.93	106	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL2)			Lab File ID: 207I1005.D			Analyzed: 09/01/20 08:59			
Bromochloromethane	760658	11.02	720455	11.03	106	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1980384	15.92	1849264	15.93	107	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL3)			Lab File ID: 207I1006.D			Analyzed: 09/01/20 09:37			
Bromochloromethane	762082	11.02	720455	11.03	106	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	2005238	15.92	1849264	15.93	108	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL4)			Lab File ID: 207I1007.D			Analyzed: 09/01/20 10:16			
Bromochloromethane	749778	11.02	720455	11.03	104	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1959363	15.92	1849264	15.93	106	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL7)			Lab File ID: 207I1010.D			Analyzed: 09/01/20 12:22			
Bromochloromethane	720455	11.03	720455	11.03	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1849264	15.93	1849264	15.93	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL5)			Lab File ID: 207I1011.D			Analyzed: 09/01/20 13:04			
Bromochloromethane	616785	11.03	720455	11.03	86	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1868471	15.93	1849264	15.93	101	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL6)			Lab File ID: 207I1012.D			Analyzed: 09/01/20 13:42			
Bromochloromethane	730370	11.03	720455	11.03	101	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1885789	15.93	1849264	15.93	102	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL8)			Lab File ID: 207I1013.D			Analyzed: 09/01/20 14:29			
Bromochloromethane	626230	11.03	720455	11.03	87	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1573023	15.93	1849264	15.93	85	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL9)			Lab File ID: 207I1014.D			Analyzed: 09/01/20 15:14			
Bromochloromethane	592321	11.04	720455	11.03	82	60 - 140	0.0100	+/-0.50	
Chlorobenzene-d5	1469610	15.93	1849264	15.93	79	50 - 200	0.0000	+/-0.50	
Secondary Cal Check (AA62229-SCV1)			Lab File ID: 207I1017.D			Analyzed: 09/01/20 17:14			
Bromochloromethane	749928	11.04	720455	11.03	104	60 - 140	0.0100	+/-0.50	
Chlorobenzene-d5	1926964	15.93	1849264	15.93	104	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA62257
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA62257-CCV1)			Lab File ID: 207I1024.D			Analyzed: 09/01/20 22:28			
Bromochloromethane	754080	11.03	720455	11.03	105	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1952974	15.92	1849264	15.93	106	50 - 200	-0.0100	+/-0.50	
LCS (0I02022-BS1)			Lab File ID: 207I1025.D			Analyzed: 09/01/20 23:07			
Bromochloromethane	608042	11.03	720455	11.03	84	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1615187	15.93	1849264	15.93	87	50 - 200	0.0000	+/-0.50	
LCS Dup (0I02022-BSD1)			Lab File ID: 207I1026.D			Analyzed: 09/01/20 23:48			
Bromochloromethane	624862	11.02	720455	11.03	87	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1654275	15.93	1849264	15.93	89	50 - 200	0.0000	+/-0.50	
Blank (0I02022-BLK1)			Lab File ID: 207I1028.D			Analyzed: 09/02/20 01:20			
Bromochloromethane	783865	11.02	720455	11.03	109	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	2677214	12.52	2458620	12.53	109	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	2026716	15.92	1849264	15.93	110	50 - 200	-0.0100	+/-0.50	
Instrument RL Check (AA62257-CRL1)			Lab File ID: 207I1030.D			Analyzed: 09/02/20 07:22			
Bromochloromethane	794484	11.02	720455	11.03	110	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	2059209	15.93	1849264	15.93	111	50 - 200	0.0000	+/-0.50	
HMFN-VMP1-Field-20200826 (AD05339-01)			Lab File ID: 207I1041.D			Analyzed: 09/02/20 18:50			
Bromochloromethane	630631	11.03	720455	11.03	88	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	2213254	12.53	2458620	12.53	90	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1732967	15.93	1849264	15.93	94	50 - 200	0.0000	+/-0.50	
HMFN-VMP2-P.Lot-20200826 (AD05339-02)			Lab File ID: 207I1042.D			Analyzed: 09/02/20 19:35			
Bromochloromethane	641509	11.04	720455	11.03	89	60 - 140	0.0100	+/-0.50	
1,4-Difluorobenzene	2264553	12.53	2458620	12.53	92	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1829087	15.93	1849264	15.93	99	50 - 200	0.0000	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA62229		
Calibration:	2009010	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA62229-TUN1	207I1002.D	09/01/20 06:33
Cal Standard	AA62229-CAL1	207I1004.D	09/01/20 08:20
Cal Standard	AA62229-CAL2	207I1005.D	09/01/20 08:59
Cal Standard	AA62229-CAL3	207I1006.D	09/01/20 09:37
Cal Standard	AA62229-CAL4	207I1007.D	09/01/20 10:16
Cal Standard	AA62229-CAL7	207I1010.D	09/01/20 12:22
Cal Standard	AA62229-CAL5	207I1011.D	09/01/20 13:04
Cal Standard	AA62229-CAL6	207I1012.D	09/01/20 13:42
Cal Standard	AA62229-CAL8	207I1013.D	09/01/20 14:29
Cal Standard	AA62229-CAL9	207I1014.D	09/01/20 15:14
Secondary Cal Check	AA62229-SCV1	207I1017.D	09/01/20 17:14

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA62257		
Calibration:	2009010	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA62257-TUN1	207I1023.D	09/01/20 21:47
Calibration Check	AA62257-CCV1	207I1024.D	09/01/20 22:28
LCS	0I02022-BS1	207I1025.D	09/01/20 23:07
LCS Dup	0I02022-BSD1	207I1026.D	09/01/20 23:48
Blank	0I02022-BLK1	207I1028.D	09/02/20 01:20
Instrument RL Check	AA62257-CRL1	207I1030.D	09/02/20 07:22
HMFN-VMP1-Field-20200826	AD05339-01	207I1041.D	09/02/20 18:50
HMFN-VMP2-P.Lot-20200826	AD05339-02	207I1042.D	09/02/20 19:35

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	207I1002.D	Injection Date:	09/01/20
Instrument ID:	OVGCMS7	Injection Time:	06:33
Sequence:	AA62229	Lab Sample ID:	AA62229-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	19.3	PASS
75	30 - 66% of 95	39.2	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.53	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	81.7	PASS
175	4 - 9% of 174	8.92	PASS
176	95 - 101% of 174	101	PASS
177	5 - 9% of 176	6.58	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	207I1023.D	Injection Date:	09/01/20
Instrument ID:	OVGCMS7	Injection Time:	21:47
Sequence:	AA62257	Lab Sample ID:	AA62257-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	19.4	PASS
75	30 - 66% of 95	39.5	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.58	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	82.4	PASS
175	4 - 9% of 174	8.38	PASS
176	95 - 101% of 174	98.5	PASS
177	5 - 9% of 176	6.65	PASS

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS7	Calibration:	2009010
Lab File ID:	207I1024.D	Calibration Date:	09/01/20 06:33
Sequence:	AA62257	Injection Date:	09/01/20
Lab Sample ID:	AA62257-CCV1	Injection Time:	22:28

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	10.0	10	2.225314	2.294603		3.1	30
Chloromethane	A	10.0	10	1.411339	1.414026		0.20	30
Vinyl chloride	A	10.0	10	1.258522	1.317492		4.7	30
Bromomethane	A	10.0	9.7	0.9611645	0.9370421		-2.5	30
Chloroethane	A	10.0	9.8	0.5231733	0.5128969		-2	30
Trichlorofluoromethane	A	10.0	9.7	1.612561	1.565182		-2.9	30
1,1-Dichloroethane	A	10.0	9.6	2.083198	1.993783		-4.3	30
Acetone	A	10.0	8.9	2.352154	2.084475		-11	30
Carbon disulfide	A	10.0	9.8	3.371876	3.3051		-2	30
Methylene chloride	A	10.0	9.4	1.076514	1.017033		-5.5	30
Freon 113	A	10.0	9.9	1.499698	1.482675		-1.1	30
trans-1,2-Dichloroethene	A	10.0	9.6	1.620164	1.557375		-3.9	30
Methyl-tert-butyl ether	A	10.0	9.4	2.932301	2.751949		-6.2	30
1,1-Dichloroethene	A	10.0	9.9	1.753325	1.729863		-1.3	30
cis-1,2-Dichloroethene	A	10.0	9.7	1.170851	1.14072		-2.6	30
2-Butanone	A	10.0	9.2	3.465852	3.173537		-8.4	30
Chloroform	A	10.0	9.6	2.096944	2.010827		-4.1	30
1,2-Dichloroethane	A	10.0	9.0	1.240659	1.1185		-9.8	30
1,1,1-Trichloroethane	A	10.0	9.3	1.716679	1.602814		-6.6	30
Cyclohexane	A	10.0	9.7	1.941856	1.89274		-2.5	30
Carbon tetrachloride	A	10.0	9.5	1.687549	1.599944		-5.2	30
Benzene	A	10.0	9.1	3.52937	3.225052		-8.6	30
1,2-Dichloropropane	A	10.0	9.6	0.3905356	0.3758089		-3.8	30
Trichloroethene	A	10.0	9.3	0.4190128	0.3889495		-7.2	30
Bromodichloromethane	A	10.0	9.8	0.598495	0.5873658		-1.9	30
cis-1,3-Dichloropropene	A	10.0	9.3	0.5704011	0.5301578		-7.1	30
trans-1,3-Dichloropropene	A	10.0	9.1	0.4018199	0.3659452		-8.9	30
1,1,2-Trichloroethane	A	10.0	9.3	0.3710501	0.3465139		-6.6	30
4-Methyl-2-pentanone	A	10.0	9.4	1.103402	1.033112		-6.4	30

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS7	Calibration:	2009010
Lab File ID:	207I1024.D	Calibration Date:	09/01/20 06:33
Sequence:	AA62257	Injection Date:	09/01/20
Lab Sample ID:	AA62257-CCV1	Injection Time:	22:28

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	10.0	8.6	0.6998491	0.6051235		-14	30	
2-Hexanone	A	10.0	9.1	0.9756389	0.8873383		-9.1	30	
1,2-Dibromoethane	A	10.0	9.5	0.5915854	0.5607168		-5.2	30	
Tetrachloroethene	A	10.0	9.0	0.4977973	0.4458624		-10	30	
Dibromochloromethane	A	10.0	9.9	0.484477	0.4811687		-0.7	30	
Chlorobenzene	A	10.0	9.1	0.9644813	0.8799911		-8.8	30	
Ethylbenzene	A	10.0	8.7	0.4808969	0.420477		-13	30	
m,p-Xylenes	A	20.0	17	0.6687477	0.5795871		-13	30	
o-Xylene	A	10.0	9.1	0.6240481	0.5702965		-8.6	30	
Styrene	A	10.0	9.5	0.9174599	0.8687211		-5.3	30	
Bromoform	A	10.0	10	0.6553159	0.6720931		2.6	30	
1,1,2,2-Tetrachloroethane	A	10.0	9.8	0.8568666	0.8375905		-2.2	30	
1,3-Dichlorobenzene	A	10.0	10	0.658507	0.665385		1.0	30	
1,4-Dichlorobenzene	A	10.0	10	0.6246073	0.6327306		1.3	30	
1,2-Dichlorobenzene	A	10.0	8.1	0.5998125	0.4839763		-19	30	
1,2,4-Trichlorobenzene	A	10.0	6.1	0.1501591	0.1442781		-39	30	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05339-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA62229	Instrument:	OVGCMS7
Calibration:	2009010		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0H1322	Air- VIRTUAL TUN-083120	AA62229-TUN1	207I1002.D	09/01/20 06:33
A0H1127	Air- Virtual CAL1 082520	AA62229-CAL1	207I1004.D	09/01/20 08:20
A0H1128	Air- Virtual CAL2 082520	AA62229-CAL2	207I1005.D	09/01/20 08:59
A0H1129	Air- Virtual CAL3 082520	AA62229-CAL3	207I1006.D	09/01/20 09:37
A0H1130	Air- Virtual CAL4 082520	AA62229-CAL4	207I1007.D	09/01/20 10:16
A0H1133	Air- Virtual CAL7 082520	AA62229-CAL7	207I1010.D	09/01/20 12:22
A0H1131	Air- Virtual CAL5 082520	AA62229-CAL5	207I1011.D	09/01/20 13:04
A0H1132	Air- Virtual CAL6 082520	AA62229-CAL6	207I1012.D	09/01/20 13:42
A0H1134	Air- Virtual CAL8 082520	AA62229-CAL8	207I1013.D	09/01/20 14:29
A0H1135	Air- Virtual CAL9 082520	AA62229-CAL9	207I1014.D	09/01/20 15:14
A0H1136	Air- Virtual SCV 082520	AA62229-SCV1	207I1017.D	09/01/20 17:14

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	0.125	2.746213	0.25	2.590825	0.5	2.345658	1.25	2.47574	2.5	2.180788	5	1.963988
Chloromethane	0.125	1.824235	0.25	1.652012	0.5	1.457413	1.25	1.557504	2.5	1.280279	5	1.213523
Vinyl chloride	0.125	1.557009	0.25	1.423136	0.5	1.30487	1.25	1.405716	2.5	1.162207	5	1.088194
Bromomethane	0.125	1.331527	0.25	1.116665	0.5	1.057304	1.25	0.9966929	2.5	0.8898141	5	0.8043438
Chloroethane	0.125	0.7267358	0.25	0.5721888	0.5	0.5478518	1.25	0.5427516	2.5	0.4822809	5	0.4616915
Trichlorofluoromethane	0.125	1.840341	0.25	1.707274	0.5	1.687813	1.25	1.699468	2.5	1.51954	5	1.549249
1,1-Dichloroethane	0.125	2.419166	0.25	2.197792	0.5	2.161956	1.25	2.189562	2.5	1.908557	5	2.107688
Acetone	0.125	~~4.478086~~	0.25	3.176871	0.5	2.662784	1.25	2.403335	2.5	2.067079	5	2.23547
Carbon disulfide	0.125	4.324916	0.25	3.797475	0.5	3.602447	1.25	3.533095	2.5	2.980777	5	3.103514
Methylene chloride	0.125	~~3.067673~~	0.25	~~2.040807~~	0.5	1.474091	1.25	1.236828	2.5	0.9573041	5	1.080503
Freon 113	0.125	1.796954	0.25	1.659511	0.5	1.600437	1.25	1.65637	2.5	1.393144	5	1.414726
trans-1,2-Dichloroethene	0.125	1.870581	0.25	1.700591	0.5	1.659745	1.25	1.69196	2.5	1.458	5	1.652524
Methyl-tert-butyl ether	0.125	3.720125	0.25	3.107914	0.5	3.029456	1.25	2.987135	2.5	2.604003	5	2.901115
1,1-Dichloroethene	0.125	2.016519	0.25	1.84535	0.5	1.797481	1.25	1.888368	2.5	1.645533	5	1.676972
cis-1,2-Dichloroethene	0.125	1.364068	0.25	1.276584	0.5	1.19089	1.25	1.255483	2.5	1.041119	5	1.208956
2-Butanone	0.125	4.117512	0.25	3.536812	0.5	3.300779	1.25	3.443491	2.5	3.276812	5	3.391465
Chloroform	0.125	2.447105	0.25	2.165189	0.5	2.161631	1.25	2.246024	2.5	1.966417	5	2.111465
1,2-Dichloroethane	0.125	1.355193	0.25	1.328261	0.5	1.217819	1.25	1.220521	2.5	1.247107	5	1.216308
1,1,1-Trichloroethane	0.125	1.909366	0.25	1.909089	0.5	1.7686	1.25	1.762148	2.5	1.60643	5	1.69923
Cyclohexane	0.125	2.057934	0.25	1.973318	0.5	2.006404	1.25	2.068899	2.5	1.840243	5	2.027154
Carbon tetrachloride	0.125	1.863349	0.25	1.776394	0.5	1.658688	1.25	1.731222	2.5	1.609647	5	1.722642
Benzene	0.125	4.319	0.25	3.825677	0.5	3.505796	1.25	3.477129	2.5	3.645202	5	3.396796
1,2-Dichloropropane	0.125	0.4682238	0.25	0.4058708	0.5	0.4039575	1.25	0.399665	2.5	0.3665358	5	0.3986255
Trichloroethene	0.125	0.5080219	0.25	0.4628194	0.5	0.4402278	1.25	0.4278125	2.5	0.3867649	5	0.4195372
Bromodichloromethane	0.125	0.6263663	0.25	0.6158007	0.5	0.5945989	1.25	0.6314732	2.5	0.5661847	5	0.6325848
cis-1,3-Dichloropropene	0.125	0.6582429	0.25	0.6442041	0.5	0.5692331	1.25	0.5717391	2.5	0.5217315	5	0.5760751
trans-1,3-Dichloropropene	0.125	0.4848302	0.25	0.4565337	0.5	0.4066017	1.25	0.3989829	2.5	0.3663128	5	0.399378
1,1,2-Trichloroethane	0.125	0.4400693	0.25	0.403366	0.5	0.3679212	1.25	0.3672042	2.5	0.3404713	5	0.3729558
4-Methyl-2-pentanone	0.125	1.265808	0.25	1.095539	0.5	1.030334	1.25	1.10313	2.5	1.01678	5	1.109924
Toluene	0.125	0.9903707	0.25	0.850684	0.5	0.7785478	1.25	0.6674309	2.5	0.6020747	5	0.6599821
2-Hexanone	0.125	1.259509	0.25	0.9917085	0.5	0.9107588	1.25	0.9452356	2.5	0.8876133	5	0.9645447

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	0.125	0.6890697	0.25	0.6184	0.5	0.6150974	1.25	0.6072837	2.5	0.5599081	5	0.6110455
Tetrachloroethene	0.125	0.6639692	0.25	0.5583323	0.5	0.5300611	1.25	0.5032246	2.5	0.4465546	5	0.4936508
Dibromochloromethane	0.125	0.5049678	0.25	0.4752488	0.5	0.4467331	1.25	0.5090654	2.5	0.4561215	5	0.5115973
Chlorobenzene	0.125	1.174934	0.25	1.120229	0.5	1.033097	1.25	0.9728431	2.5	0.9006515	5	0.9691494
Ethylbenzene	0.125	0.6867005	0.25	0.5540723	0.5	0.5284061	1.25	0.481441	2.5	0.4271679	5	0.4653644
m,p-Xylenes	0.25	0.9641889	0.5	0.8359611	1	0.757547	2.5	0.6519015	5	0.5932216	10	0.6335442
o-Xylene	0.125	0.8215723	0.25	0.7148028	0.5	0.6765391	1.25	0.6204674	2.5	0.5510902	5	0.6205757
Styrene	0.125	1.083508	0.25	0.972272	0.5	0.9103797	1.25	0.9246826	2.5	0.8481572	5	0.9414073
Bromoform	0.125	0.6656701	0.25	0.6161855	0.5	0.5981285	1.25	0.6959421	2.5	0.6547182	5	0.7249157
1,1,2,2-Tetrachloroethane	0.125	1.008831	0.25	0.9033965	0.5	0.8513553	1.25	0.8907866	2.5	0.8336433	5	0.8870411
1,3-Dichlorobenzene	0.125	0.6664256	0.25	0.6299607	0.5	0.622369	1.25	0.6806016	2.5	0.6451883	5	0.7204937
1,4-Dichlorobenzene	0.125	0.6487953	0.25	0.6278318	0.5	0.5566352	1.25	0.6385671	2.5	0.6031199	5	0.6736005
1,2-Dichlorobenzene	0.125	0.6246166	0.25	0.5831879	0.5	0.5333222	1.25	0.6117845	2.5	0.6128821	5	0.6626556
1,2,4-Trichlorobenzene	0.125	0.1283235	0.25	0.1050039	0.5	0.1017545	1.25	0.1190534	2.5	0.1423517	5	0.1467815
4-Bromofluorobenzene	31	0.4615942	31	0.4654335	31	0.4636218	31	0.4710419	31	0.4732527	31	0.4873297

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	10	1.737128	25	2.014444	50	1.973042						
Chloromethane	10	1.043459	25	1.2852	50	1.388425						
Vinyl chloride	10	0.9562624	25	1.167655	50	1.261653						
Bromomethane	10	0.7078811	25	0.8466881	50	0.8995648						
Chloroethane	10	0.4003144	25	0.4645876	50	0.5101572						
Trichlorofluoromethane	10	1.329391	25	1.525115	50	1.65486						
1,1-Dichloroethane	10	1.847122	25	1.880451	50	2.036484						
Acetone	10	1.937761	25	2.08387	50	2.250064						
Carbon disulfide	10	2.924208	25	2.946152	50	3.134297						
Methylene chloride	10	0.9107513	25	0.9128632	50	0.9632583						
Freon 113	10	1.309912	25	1.321705	50	1.34452						
trans-1,2-Dichloroethene	10	1.44176	25	1.500687	50	1.60563						
Methyl-tert-butyl ether	10	2.536535	25	2.729703	50	2.774725						
1,1-Dichloroethene	10	1.551276	25	1.606604	50	1.751822						
cis-1,2-Dichloroethene	10	1.051136	25	1.059559	50	1.089862						
2-Butanone	10	2.977528	25	3.723748	50	3.424517						
Chloroform	10	1.858559	25	1.961498	50	1.954606						
1,2-Dichloroethane	10	1.044991	25	1.296376	50	1.239353						
1,1,1-Trichloroethane	10	1.477478	25	1.741451	50	1.576315						
Cyclohexane	10	1.768018	25	1.852626	50	1.882106						
Carbon tetrachloride	10	1.481178	25	1.758409	50	1.586409						
Benzene	10	2.951716	25	3.562269	50	3.080743						
1,2-Dichloropropane	10	0.3445579	25	0.3565008	50	0.370883						
Trichloroethene	10	0.3684539	25	0.3756497	50	0.3818278						
Bromodichloromethane	10	0.5479816	25	0.5755935	50	0.5958715						
cis-1,3-Dichloropropene	10	0.5014316	25	0.537063	50	0.5538896						
trans-1,3-Dichloropropene	10	0.3458717	25	0.4065185	50	0.3513493						
1,1,2-Trichloroethane	10	0.323862	25	0.388123	50	0.3354778						
4-Methyl-2-pentanone	10	0.969179	25	1.196664	50	1.143263						
Toluene	10	0.5677344	25	0.5922115	50	0.5896063						
2-Hexanone	10	0.8491555	25	0.9533907	50	1.018834						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	10	0.5297305	25	0.5333045	50	0.5604294						
Tetrachloroethene	10	0.4143332	25	0.4779947	50	0.392055						
Dibromochloromethane	10	0.4495291	25	0.5342822	50	0.472748						
Chlorobenzene	10	0.8433814	25	0.8392234	50	0.8268232						
Ethylbenzene	10	0.39789	25	0.3959736	50	0.3910563						
m,p-Xylenes	20	0.5423136	50	0.5333459	100	0.5067054						
o-Xylene	10	0.5343241	25	0.5272524	50	0.5498088						
Styrene	10	0.8256071	25	0.8630534	50	0.8880718						
Bromoform	10	0.6334161	25	0.6520586	50	0.6568082						
1,1,2,2-Tetrachloroethane	10	0.7790936	25	0.7552073	50	0.8024448						
1,3-Dichlorobenzene	10	0.6304037	25	0.6441442	50	0.6869761						
1,4-Dichlorobenzene	10	0.5984007	25	0.6147212	50	0.6597939						
1,2-Dichlorobenzene	10	0.5758706	25	0.5795839	50	0.6144092						
1,2,4-Trichlorobenzene	10	0.149342	25	0.2091076	50	0.2497137						
4-Bromofluorobenzene	31	0.4980933	31	0.510304	31	0.5461088						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	2.225314	15.06274	4.557778	0.2394937			30	
Chloromethane	1.411339	16.98986	5.061111	0.2311476			30	
Vinyl chloride	1.258522	14.81002	5.32	0.2105278			30	
Bromomethane	0.9611645	19.55398	6.148889	0.2070399			30	
Chloroethane	0.5231733	17.74898	6.477778	0.1852232			30	
Trichlorofluoromethane	1.612561	9.20725	6.803333	0.2075717			30	
1,1-Dichloroethane	2.083198	8.878016	10.04889	0.1039833			30	
Acetone	2.352154	17.06837	8.99875	3.995619E-02			30	
Carbon disulfide	3.371876	14.1907	7.893333	0.2001535			30	
Methylene chloride	1.076514	19.52512	8.872857	0.1248481			30	
Freon 113	1.499698	11.99663	7.953333	0.1538423			30	
trans-1,2-Dichloroethene	1.620164	8.439156	9.134445	0.1457913			30	
Methyl-tert-butyl ether	2.932301	12.0283	9.35	5.491324E-02			30	
1,1-Dichloroethene	1.753325	8.501008	7.854445	0.1572708			30	
cis-1,2-Dichloroethene	1.170851	9.906757	10.76333	0.0931772			30	
2-Butanone	3.465852	9.154805	11.49222	0.0392965			30	
Chloroform	2.096944	8.701682	11.09778	7.516091E-02			30	
1,2-Dichloroethane	1.240659	7.194968	12.07444	5.857727E-02			30	
1,1,1-Trichloroethane	1.716679	8.46423	11.39	6.072828E-02			30	
Cyclohexane	1.941856	5.585801	11.04444	9.170877E-02			30	
Carbon tetrachloride	1.687549	6.842866	11.30333	6.149401E-02			30	
Benzene	3.52937	11.34066	11.84111	5.411332E-02			30	
1,2-Dichloropropane	0.3905356	9.423025	13.13556	5.233828E-02			30	
Trichloroethene	0.4190128	11.07524	12.50778	6.688433E-02			30	
Bromodichloromethane	0.598495	5.105024	13.17222	2.919393E-02			30	
cis-1,3-Dichloropropene	0.5704011	9.132396	13.89111	2.832081E-02			30	
trans-1,3-Dichloropropene	0.4018199	11.43218	14.61556	3.659225E-02			30	
1,1,2-Trichloroethane	0.3710501	9.78922	14.81333	2.827788E-02			30	
4-Methyl-2-pentanone	1.103402	8.332498	14.57111	2.848533E-02			30	
Toluene	0.6998491	20.62872	14.17778	4.396212E-02			30	

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05339-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Hexanone	0.9756389	12.13868	15.51444	3.058825E-02			30	
1,2-Dibromoethane	0.5915854	8.57708	15.36	4.756948E-02			30	
Tetrachloroethene	0.4977973	16.43253	14.63111	1.163171E-02			30	
Dibromochloromethane	0.484477	6.491719	15.04111	2.201801E-02			30	
Chlorobenzene	0.9644813	13.04951	15.94667	3.270613E-02			30	
Ethylbenzene	0.4808969	20.1702	15.93889	2.164073E-02			30	
m,p-Xylenes	0.6687477	23.10127	16.09222	2.023865E-02			30	
o-Xylene	0.6240481	15.85187	16.62	3.018551E-02			30	
Styrene	0.9174599	8.470551	16.67444	3.656002E-02			30	
Bromoform	0.6553159	5.884485	16.74889	4.831623E-02			30	
1,1,2,2-Tetrachloroethane	0.8568666	8.967446	17.54111	2.592137E-02			30	
1,3-Dichlorobenzene	0.658507	4.949423	18.66	2.315104E-02			30	
1,4-Dichlorobenzene	0.6246073	5.743345	18.76111	0.0271012			30	
1,2-Dichlorobenzene	0.5998125	6.117543	19.31222	1.643618E-02			30	
1,2,4-Trichlorobenzene	0.1501591	32.69776	21.23444	3.008408E-02	0.990		0.99	
4-Bromofluorobenzene	0.4863089	5.750567	17.36	1.697032E-02			30	

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2009010 **Laboratory ID:** AA62229-SCV1

Sequence: AA62229 **Standard ID:** A0H1136

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
Chlorobenzene	10.0	9.7	-2.9	30.00
Ethylbenzene	10.0	9.4	-6.3	30.00
Carbon tetrachloride	10.0	8.0	-20.4	30.00
1,3-Dichlorobenzene	10.0	11	15.0	30.00
Methyl-tert-butyl ether	10.0	9.3	-6.5	30.00
trans-1,2-Dichloroethene	10.0	9.7	-2.8	30.00
cis-1,2-Dichloroethene	10.0	9.9	-0.8	30.00
Xylenes (Total)	30.0	28	-6.6	30.00
Tetrachloroethene	10.0	9.4	-6.0	30.00
Dibromochloromethane	10.0	9.8	-1.7	30.00
Acetone	10.0	9.0	-9.8	30.00
Cyclohexane	10.0	9.6	-3.8	30.00
Chloroform	10.0	9.7	-2.7	30.00
Toluene	10.0	9.2	-8.4	30.00
m,p-Xylenes	20.0	18	-8.6	30.00
4-Methyl-2-pentanone	10.0	9.8	-1.6	30.00
1,2-Dichloroethane	10.0	9.5	-4.8	30.00
1,2-Dibromoethane	10.0	10	1.7	30.00
1,4-Dichlorobenzene	10.0	11	13.7	30.00
trans-1,3-Dichloropropene	10.0	11	5.7	30.00
cis-1,3-Dichloropropene	10.0	10	-0.5	30.00
Styrene	10.0	9.3	-7.0	30.00
1,2,4-Trichlorobenzene	10.0	8.8	-11.6	30.00
Bromodichloromethane	10.0	9.8	-2.5	30.00
o-Xylene	10.0	9.7	-2.6	30.00
1,1,2,2-Tetrachloroethane	10.0	11	8.6	30.00
Trichloroethene	10.0	9.5	-5.2	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AD05339-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2009010 **Laboratory ID:** AA62229-SCV1

Sequence: AA62229 **Standard ID:** A0H1136

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
1,1,2-Trichloroethane	10.0	9.7	-2.7	30.00
2-Butanone	10.0	9.4	-6.3	30.00
1,2-Dichloropropane	10.0	9.9	-0.8	30.00
Freon 113	10.0	10	0.3	30.00
Dichlorodifluoromethane	10.0	10	2.5	30.00
Trichlorofluoromethane	10.0	9.8	-2.2	30.00
2-Hexanone	10.0	9.9	-0.8	30.00
1,1-Dichloroethane	10.0	9.8	-2.1	30.00
1,2-Dichlorobenzene	10.0	9.7	-2.8	30.00
Bromoform	10.0	10	0.2	30.00
Carbon disulfide	10.0	9.9	-0.9	30.00
Methylene chloride	10.0	9.5	-4.9	30.00
Vinyl chloride	10.0	10	4.3	30.00
Chloroethane	10.0	9.9	-1.0	30.00
Chloromethane	10.0	10	-0.2	30.00
Bromomethane	10.0	9.8	-1.8	30.00
1,1,1-Trichloroethane	10.0	9.4	-5.7	30.00
Benzene	10.0	9.2	-7.8	30.00
1,1-Dichloroethene	10.0	10	-0.04	30.00

* Values outside of QC limits

TETRA TECH ISG
TtNUS, Information Systems Group

Completion Ticket

On 10/2/2020 at 1:49 PM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AD05339A1.txt, TE015AD05339A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2020102_363423010_ledd_ENCO

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: October 05, 2020

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Friday, September 18, 2020
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AD05968

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, September 11, 2020.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AD05968
SDG: AD05968-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
TO-15	OVGCMS7

Analysis: TO-15

The calibration curve and the continuing calibration standards are in ppbv. Raw data is reported in pptv. Per request, results may be reported in a unit other than ppbv which is obtained through a conversion factor set up in the laboratories' database.

Methylene chloride is a common laboratory contaminant.

Affected Samples: AA62436-CCV1, HMFN-VMP1-Field-20200909[AD05968-01], HMFN-VMP2- P.Lot-20200909[AD05968-02
Result for 1,2,4-trichlorobenzene may be biased low. The continuing calibration verification standard exhibited low bias for 1,2,4-trichlorobenzene; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: 0I14028-BS1, 0I14028-BSD1, HMFN-VMP1-Field-20200909[AD05968-01], HMFN-VMP2- P.Lot-20200909[AD05968-02]
The associated laboratory control sample for 1,2-dichlorobenzene exhibited high bias. Analyte(s) was not detected in the sample.

Affected Samples: 0I14028-BLK1, HMFN-VMP1-Field-20200909[AD05968-01], HMFN-VMP2- P.Lot-20200909[AD05968-02]
Result for methylene chloride may be biased high due to positive results in the associated method blanks.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-VMP1-Field-20200909	Lab ID: AD05968-01	Sampled: 09/09/20 16:35	Received: 09/11/20 14:20

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	10/09/20	09/14/20 08:00	09/14/20 12:01

Client ID: HMFN-VMP2- P.Lot-20200909	Lab ID: AD05968-02	Sampled: 09/09/20 16:30	Received: 09/11/20 14:20

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	10/09/20	09/14/20 08:00	09/14/20 12:46

SAMPLE DETECTION SUMMARY

Client ID: HMFN-VMP1-Field-20200909 **Lab ID:** AD05968-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	1.5	I	1.3	9.8	ug/m³ Air	TO-15	
Acetone	10		1.1	7.9	ug/m³ Air	TO-15	
Chloromethane	1.6	I	1.3	6.9	ug/m³ Air	TO-15	
cis-1,2-Dichloroethene	59		2.0	13	ug/m³ Air	TO-15	
Freon 113	22	I	3.3	25	ug/m³ Air	TO-15	
Methylene chloride	2.7	IV	0.92	12	ug/m³ Air	TO-15	J-01, O-01
trans-1,2-Dichloroethene	1.8	I	1.7	13	ug/m³ Air	TO-15	
Trichloroethene	24		2.5	18	ug/m³ Air	TO-15	
Vinyl chloride	11		1.9	8.5	ug/m³ Air	TO-15	

Client ID: HMFN-VMP2- P.Lot-20200909 **Lab ID:** AD05968-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	1.5	I	1.3	10	ug/m³ Air	TO-15	
Acetone	9.8		1.1	8.1	ug/m³ Air	TO-15	
Chloromethane	1.5	I	1.3	7.0	ug/m³ Air	TO-15	
Methylene chloride	1.2	IV	0.94	12	ug/m³ Air	TO-15	J-01, O-01
Toluene	8.7	I	1.9	13	ug/m³ Air	TO-15	
Xylenes (Total)	7.6	I	3.9	15	ug/m³ Air	TO-15	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-VMP1-Field-20200909 **Lab Sample ID:** AD05968-01 **Received:** 09/11/20 14:20

Matrix: Air **Sampled:** 09/09/20 16:35 **Work Order:** AD05968

Project: NASA KSC HMFN **Sampled By:** **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.5	U	ug/m³ Air	1.33	2.5	18	0I14028	TO-15	09/14/20 12:01	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.3	U	ug/m³ Air	1.33	3.3	23	0I14028	TO-15	09/14/20 12:01	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.5	U	ug/m³ Air	1.33	2.5	18	0I14028	TO-15	09/14/20 12:01	rgg	
1,1-Dichloroethane [75-34-3]^	1.9	U	ug/m³ Air	1.33	1.9	13	0I14028	TO-15	09/14/20 12:01	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.33	2.0	13	0I14028	TO-15	09/14/20 12:01	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.8	U	ug/m³ Air	1.33	3.8	25	0I14028	TO-15	09/14/20 12:01	rgg	J-05
1,2-Dibromoethane [106-93-4]^	3.7	U	ug/m³ Air	1.33	3.7	26	0I14028	TO-15	09/14/20 12:01	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.2	U	ug/m³ Air	1.33	2.2	20	0I14028	TO-15	09/14/20 12:01	rgg	QL-02
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.33	2.0	13	0I14028	TO-15	09/14/20 12:01	rgg	
1,2-Dichloropropane [78-87-5]^	2.5	U	ug/m³ Air	1.33	2.5	15	0I14028	TO-15	09/14/20 12:01	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.2	U	ug/m³ Air	1.33	2.2	20	0I14028	TO-15	09/14/20 12:01	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.33	2.5	20	0I14028	TO-15	09/14/20 12:01	rgg	
2-Butanone [78-93-3]^	**1.5**	I	ug/m³ Air	1.33	1.3	9.8	0I14028	TO-15	09/14/20 12:01	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.33	1.8	14	0I14028	TO-15	09/14/20 12:01	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.33	1.9	14	0I14028	TO-15	09/14/20 12:01	rgg	
Acetone [67-64-1]^	**10**		ug/m³ Air	1.33	1.1	7.9	0I14028	TO-15	09/14/20 12:01	rgg	
Benzene [71-43-2]^	1.5	U	ug/m³ Air	1.33	1.5	11	0I14028	TO-15	09/14/20 12:01	rgg	
Bromodichloromethane [75-27-4]^	3.0	U	ug/m³ Air	1.33	3.0	22	0I14028	TO-15	09/14/20 12:01	rgg	
Bromoform [75-25-2]^	5.2	U	ug/m³ Air	1.33	5.2	34	0I14028	TO-15	09/14/20 12:01	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.33	1.7	13	0I14028	TO-15	09/14/20 12:01	rgg	
Carbon disulfide [75-15-0]^	1.7	U	ug/m³ Air	1.33	1.7	10	0I14028	TO-15	09/14/20 12:01	rgg	
Carbon tetrachloride [56-23-5]^	2.3	U	ug/m³ Air	1.33	2.3	21	0I14028	TO-15	09/14/20 12:01	rgg	
Chlorobenzene [108-90-7]^	2.0	U	ug/m³ Air	1.33	2.0	15	0I14028	TO-15	09/14/20 12:01	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.33	1.1	8.8	0I14028	TO-15	09/14/20 12:01	rgg	
Chloroform [67-66-3]^	2.5	U	ug/m³ Air	1.33	2.5	16	0I14028	TO-15	09/14/20 12:01	rgg	
Chloromethane [74-87-3]^	**1.6**	I	ug/m³ Air	1.33	1.3	6.9	0I14028	TO-15	09/14/20 12:01	rgg	
cis-1,2-Dichloroethene [156-59-2]^	**59**		ug/m³ Air	1.33	2.0	13	0I14028	TO-15	09/14/20 12:01	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.33	2.3	15	0I14028	TO-15	09/14/20 12:01	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.33	1.6	11	0I14028	TO-15	09/14/20 12:01	rgg	
Dibromochloromethane [124-48-1]^	3.7	U	ug/m³ Air	1.33	3.7	28	0I14028	TO-15	09/14/20 12:01	rgg	
Dichlorodifluoromethane [75-71-8]	3.6	U	ug/m³ Air	1.33	3.6	16	0I14028	TO-15	09/14/20 12:01	rgg	
Ethylbenzene [100-41-4]^	1.7	U	ug/m³ Air	1.33	1.7	14	0I14028	TO-15	09/14/20 12:01	rgg	
Freon 113 [76-13-1]	**22**	I	ug/m³ Air	1.33	3.3	25	0I14028	TO-15	09/14/20 12:01	rgg	
Methylene chloride [75-09-2]^	**2.7**	IV	ug/m³ Air	1.33	0.92	12	0I14028	TO-15	09/14/20 12:01	rgg	J-01, O-01
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.33	1.8	12	0I14028	TO-15	09/14/20 12:01	rgg	
Styrene [100-42-5]^	2.0	U	ug/m³ Air	1.33	2.0	14	0I14028	TO-15	09/14/20 12:01	rgg	
Tetrachloroethene [127-18-4]^	2.8	U	ug/m³ Air	1.33	2.8	23	0I14028	TO-15	09/14/20 12:01	rgg	
Toluene [108-88-3]^	1.9	U	ug/m³ Air	1.33	1.9	13	0I14028	TO-15	09/14/20 12:01	rgg	
trans-1,2-Dichloroethene [156-60-5]^	**1.8**	I	ug/m³ Air	1.33	1.7	13	0I14028	TO-15	09/14/20 12:01	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.1	U	ug/m³ Air	1.33	2.1	15	0I14028	TO-15	09/14/20 12:01	rgg	
Trichloroethene [79-01-6]^	**24**		ug/m³ Air	1.33	2.5	18	0I14028	TO-15	09/14/20 12:01	rgg	
Trichlorofluoromethane [75-69-4]	2.5	U	ug/m³ Air	1.33	2.5	19	0I14028	TO-15	09/14/20 12:01	rgg	
Vinyl chloride [75-01-4]^	**11**		ug/m³ Air	1.33	1.9	8.5	0I14028	TO-15	09/14/20 12:01	rgg	
Xylenes (Total) [1330-20-7]^	3.8	U	ug/m³ Air	1.33	3.8	14	0I14028	TO-15	09/14/20 12:01	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description:	HMFN-VMP1-Field-20200909	**Lab Sample ID:**	AD05968-01	**Received:**	09/11/20 14:20
Matrix:	Air	**Sampled:**	09/09/20 16:35	**Work Order:**	AD05968
Project:	NASA KSC HMFN	**Sampled By:**		**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*29*	*1*	*31.0*	*93 %*	*70-130*	*0I14028*	*TO-15*	*09/14/20 12:01*	*rgg*	

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ANALYTICAL RESULTS

Description: HMFN-VMP2- P.Lot-20200909 **Lab Sample ID:** AD05968-02 **Received:** 09/11/20 14:20

Matrix: Air **Sampled:** 09/09/20 16:30 **Work Order:** AD05968

Project: NASA KSC HMFN **Sampled By:** **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.5	U	ug/m³ Air	1.36	2.5	19	0I14028	TO-15	09/14/20 12:46	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.4	U	ug/m³ Air	1.36	3.4	23	0I14028	TO-15	09/14/20 12:46	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.6	U	ug/m³ Air	1.36	2.6	19	0I14028	TO-15	09/14/20 12:46	rgg	
1,1-Dichloroethane [75-34-3]^	2.0	U	ug/m³ Air	1.36	2.0	14	0I14028	TO-15	09/14/20 12:46	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.36	2.0	13	0I14028	TO-15	09/14/20 12:46	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.9	U	ug/m³ Air	1.36	3.9	25	0I14028	TO-15	09/14/20 12:46	rgg	J-05
1,2-Dibromoethane [106-93-4]^	3.8	U	ug/m³ Air	1.36	3.8	26	0I14028	TO-15	09/14/20 12:46	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.2	U	ug/m³ Air	1.36	2.2	20	0I14028	TO-15	09/14/20 12:46	rgg	QL-02
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.36	2.0	14	0I14028	TO-15	09/14/20 12:46	rgg	
1,2-Dichloropropane [78-87-5]^	2.5	U	ug/m³ Air	1.36	2.5	16	0I14028	TO-15	09/14/20 12:46	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.3	U	ug/m³ Air	1.36	2.3	20	0I14028	TO-15	09/14/20 12:46	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.36	2.5	20	0I14028	TO-15	09/14/20 12:46	rgg	
2-Butanone [78-93-3]^	**1.5**	I	ug/m³ Air	1.36	1.3	10	0I14028	TO-15	09/14/20 12:46	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.36	1.8	14	0I14028	TO-15	09/14/20 12:46	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.36	1.9	14	0I14028	TO-15	09/14/20 12:46	rgg	
Acetone [67-64-1]^	**9.8**		ug/m³ Air	1.36	1.1	8.1	0I14028	TO-15	09/14/20 12:46	rgg	
Benzene [71-43-2]^	1.6	U	ug/m³ Air	1.36	1.6	11	0I14028	TO-15	09/14/20 12:46	rgg	
Bromodichloromethane [75-27-4]^	3.1	U	ug/m³ Air	1.36	3.1	23	0I14028	TO-15	09/14/20 12:46	rgg	
Bromoform [75-25-2]^	5.3	U	ug/m³ Air	1.36	5.3	35	0I14028	TO-15	09/14/20 12:46	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.36	1.7	13	0I14028	TO-15	09/14/20 12:46	rgg	
Carbon disulfide [75-15-0]^	1.8	U	ug/m³ Air	1.36	1.8	11	0I14028	TO-15	09/14/20 12:46	rgg	
Carbon tetrachloride [56-23-5]^	2.3	U	ug/m³ Air	1.36	2.3	21	0I14028	TO-15	09/14/20 12:46	rgg	
Chlorobenzene [108-90-7]^	2.1	U	ug/m³ Air	1.36	2.1	16	0I14028	TO-15	09/14/20 12:46	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.36	1.1	9.0	0I14028	TO-15	09/14/20 12:46	rgg	
Chloroform [67-66-3]^	2.5	U	ug/m³ Air	1.36	2.5	17	0I14028	TO-15	09/14/20 12:46	rgg	
Chloromethane [74-87-3]^	**1.5**	I	ug/m³ Air	1.36	1.3	7.0	0I14028	TO-15	09/14/20 12:46	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.36	2.0	13	0I14028	TO-15	09/14/20 12:46	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.36	2.3	15	0I14028	TO-15	09/14/20 12:46	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.36	1.6	12	0I14028	TO-15	09/14/20 12:46	rgg	
Dibromochloromethane [124-48-1]^	3.8	U	ug/m³ Air	1.36	3.8	29	0I14028	TO-15	09/14/20 12:46	rgg	
Dichlorodifluoromethane [75-71-8]	3.7	U	ug/m³ Air	1.36	3.7	17	0I14028	TO-15	09/14/20 12:46	rgg	
Ethylbenzene [100-41-4]^	1.8	U	ug/m³ Air	1.36	1.8	15	0I14028	TO-15	09/14/20 12:46	rgg	
Freon 113 [76-13-1]	3.3	U	ug/m³ Air	1.36	3.3	26	0I14028	TO-15	09/14/20 12:46	rgg	
Methylene chloride [75-09-2]^	**1.2**	IV	ug/m³ Air	1.36	0.94	12	0I14028	TO-15	09/14/20 12:46	rgg	J-01, O-01
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.36	1.8	12	0I14028	TO-15	09/14/20 12:46	rgg	
Styrene [100-42-5]^	2.1	U	ug/m³ Air	1.36	2.1	14	0I14028	TO-15	09/14/20 12:46	rgg	
Tetrachloroethene [127-18-4]^	2.9	U	ug/m³ Air	1.36	2.9	23	0I14028	TO-15	09/14/20 12:46	rgg	
Toluene [108-88-3]^	**8.7**	I	ug/m³ Air	1.36	1.9	13	0I14028	TO-15	09/14/20 12:46	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.36	1.7	13	0I14028	TO-15	09/14/20 12:46	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.1	U	ug/m³ Air	1.36	2.1	15	0I14028	TO-15	09/14/20 12:46	rgg	
Trichloroethene [79-01-6]^	2.6	U	ug/m³ Air	1.36	2.6	18	0I14028	TO-15	09/14/20 12:46	rgg	
Trichlorofluoromethane [75-69-4]	2.6	U	ug/m³ Air	1.36	2.6	19	0I14028	TO-15	09/14/20 12:46	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.36	1.9	8.7	0I14028	TO-15	09/14/20 12:46	rgg	
Xylenes (Total) [1330-20-7]^	**7.6**	I	ug/m³ Air	1.36	3.9	15	0I14028	TO-15	09/14/20 12:46	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

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ANALYTICAL RESULTS

Description:	HMFN-VMP2- P.Lot-20200909	**Lab Sample ID:**	AD05968-02	**Received:**	09/11/20 14:20
Matrix:	Air	**Sampled:**	09/09/20 16:30	**Work Order:**	AD05968
Project:	NASA KSC HMFN	**Sampled By:**		**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*29*	*1*	*31.0*	*94 %*	*70-130*	*0I14028*	*TO-15*	*09/14/20 12:46*	*rgg*	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0I14028 - NO PREP 2

Blank (0I14028-BLK1) Prepared: 09/13/2020 20:23 Analyzed: 09/14/2020 00:25

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1,2,2-Tetrachloroethane	2.5	U	17	ug/m³ Air							
1,1,2-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1-Dichloroethane	1.5	U	10	ug/m³ Air							
1,1-Dichloroethene	1.5	U	9.9	ug/m³ Air							
1,2,4-Trichlorobenzene	2.9	U	19	ug/m³ Air							
1,2-Dibromoethane	2.8	U	19	ug/m³ Air							
1,2-Dichlorobenzene	1.6	U	15	ug/m³ Air							
1,2-Dichloroethane	1.5	U	10	ug/m³ Air							
1,2-Dichloropropane	1.8	U	12	ug/m³ Air							
1,3-Dichlorobenzene	1.7	U	15	ug/m³ Air							
1,4-Dichlorobenzene	1.9	U	15	ug/m³ Air							
2-Butanone	0.94	U	7.4	ug/m³ Air							
2-Hexanone	1.4	U	10	ug/m³ Air							
4-Methyl-2-pentanone	1.4	U	10	ug/m³ Air							
Acetone	0.83	U	5.9	ug/m³ Air							
Benzene	1.2	U	8.0	ug/m³ Air							
Bromodichloromethane	2.3	U	17	ug/m³ Air							
Bromoform	3.9	U	26	ug/m³ Air							
Bromomethane	1.3	U	9.7	ug/m³ Air							
Carbon disulfide	1.3	U	7.8	ug/m³ Air							
Carbon tetrachloride	1.7	U	16	ug/m³ Air							
Chlorobenzene	1.5	U	12	ug/m³ Air							
Chloroethane	0.84	U	6.6	ug/m³ Air							
Chloroform	1.9	U	12	ug/m³ Air							
Chloromethane	0.99	U	5.2	ug/m³ Air							
cis-1,2-Dichloroethene	1.5	U	9.9	ug/m³ Air							
cis-1,3-Dichloropropene	1.7	U	11	ug/m³ Air							
Cyclohexane	1.2	U	8.6	ug/m³ Air							
Dibromochloromethane	2.8	U	21	ug/m³ Air							
Dichlorodifluoromethane	2.7	U	12	ug/m³ Air							
Ethylbenzene	1.3	U	11	ug/m³ Air							
Freon 113	2.5	U	19	ug/m³ Air							
Methylene chloride	**0.78**	**I**	8.7	ug/m³ Air							J-01, O-01
Methyl-tert-butyl ether	1.3	U	9.0	ug/m³ Air							
Styrene	1.5	U	11	ug/m³ Air							
Tetrachloroethene	2.1	U	17	ug/m³ Air							
Toluene	1.4	U	9.4	ug/m³ Air							
trans-1,2-Dichloroethene	1.3	U	9.9	ug/m³ Air							
trans-1,3-Dichloropropene	1.5	U	11	ug/m³ Air							
Trichloroethene	1.9	U	13	ug/m³ Air							
Trichlorofluoromethane	1.9	U	14	ug/m³ Air							
Vinyl chloride	1.4	U	6.4	ug/m³ Air							
Xylenes (Total)	2.9	U	11	ug/m³ Air							
4-Bromofluorobenzene	*29*			*ppbv*	*31.0*		*92*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0I14028 - NO PREP 2 - Continued

LCS (0I14028-BS1) Prepared: 09/13/2020 20:23 Analyzed: 09/13/2020 21:47

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	63		14	ug/m³ Air	54.6		115	70-130			
1,1,2,2-Tetrachloroethane	85		17	ug/m³ Air	68.7		123	70-130			
1,1,2-Trichloroethane	62		14	ug/m³ Air	54.6		114	70-130			
1,1-Dichloroethane	47		10	ug/m³ Air	40.5		116	70-130			
1,1-Dichloroethene	47		9.9	ug/m³ Air	39.7		119	70-130			
1,2,4-Trichlorobenzene	85		19	ug/m³ Air	74.2		114	70-130			
1,2-Dibromoethane	90		19	ug/m³ Air	76.8		117	70-130			
1,2-Dichlorobenzene	79		15	ug/m³ Air	60.1		131	70-130			QL-02
1,2-Dichloroethane	47		10	ug/m³ Air	40.5		117	70-130			
1,2-Dichloropropane	53		12	ug/m³ Air	46.2		116	70-130			
1,3-Dichlorobenzene	78		15	ug/m³ Air	60.1		129	70-130			
1,4-Dichlorobenzene	77		15	ug/m³ Air	60.1		128	70-130			
2-Butanone	35		7.4	ug/m³ Air	29.5		119	70-130			
2-Hexanone	51		10	ug/m³ Air	41.0		125	70-130			
4-Methyl-2-pentanone	51		10	ug/m³ Air	41.0		123	70-130			
Acetone	27		5.9	ug/m³ Air	23.8		112	70-130			
Benzene	35		8.0	ug/m³ Air	32.0		110	70-130			
Bromodichloromethane	75		17	ug/m³ Air	67.0		112	70-130			
Bromoform	110		26	ug/m³ Air	103		106	70-130			
Bromomethane	44		9.7	ug/m³ Air	38.8		112	70-130			
Carbon disulfide	35		7.8	ug/m³ Air	31.1		112	70-130			
Carbon tetrachloride	46		16	ug/m³ Air	62.9		73	70-130			
Chlorobenzene	52		12	ug/m³ Air	46.0		113	70-130			
Chloroethane	31		6.6	ug/m³ Air	26.4		117	70-130			
Chloroform	57		12	ug/m³ Air	48.8		116	70-130			
Chloromethane	24		5.2	ug/m³ Air	20.7		117	70-130			
cis-1,2-Dichloroethene	45		9.9	ug/m³ Air	39.6		115	70-130			
cis-1,3-Dichloropropene	53		11	ug/m³ Air	45.4		117	70-130			
Cyclohexane	41		8.6	ug/m³ Air	34.4		119	70-130			
Dibromochloromethane	93		21	ug/m³ Air	85.2		110	70-130			
Dichlorodifluoromethane	60		12	ug/m³ Air	49.5		121	70-130			
Ethylbenzene	47		11	ug/m³ Air	43.4		109	70-130			
Freon 113	85		19	ug/m³ Air	76.6		111	70-130			
m,p-Xylenes	92		22	ug/m³ Air	86.8		106	70-130			
Methylene chloride	37		8.7	ug/m³ Air	34.7		106	70-130			
Methyl-tert-butyl ether	40		9.0	ug/m³ Air	36.1		112	70-130			
o-Xylene	48		11	ug/m³ Air	43.4		110	70-130			
Styrene	46		11	ug/m³ Air	42.6		108	70-130			
Tetrachloroethene	73		17	ug/m³ Air	67.8		108	70-130			
Toluene	40		9.4	ug/m³ Air	37.7		106	70-130			
trans-1,2-Dichloroethene	45		9.9	ug/m³ Air	39.6		114	70-130			
trans-1,3-Dichloropropene	58		11	ug/m³ Air	45.4		128	70-130			
Trichloroethene	59		13	ug/m³ Air	53.7		109	70-130			
Trichlorofluoromethane	67		14	ug/m³ Air	56.2		119	70-130			
Vinyl chloride	31		6.4	ug/m³ Air	25.6		119	70-130			
Xylenes (Total)	140		11	ug/m³ Air	130		107	70-130			
4-Bromofluorobenzene	*30*			*ppbv*	*31.0*		*98*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0I14028 - NO PREP 2 - Continued

LCS Dup (0I14028-BSD1) Prepared: 09/13/2020 20:23 Analyzed: 09/13/2020 22:26

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	63		14	ug/m³ Air	54.6		115	70-130	0.4	25	
1,1,2,2-Tetrachloroethane	84		17	ug/m³ Air	68.7		122	70-130	0.9	25	
1,1,2-Trichloroethane	63		14	ug/m³ Air	54.6		115	70-130	0.4	25	
1,1-Dichloroethane	47		10	ug/m³ Air	40.5		116	70-130	0.5	25	
1,1-Dichloroethene	47		9.9	ug/m³ Air	39.7		119	70-130	0.5	25	
1,2,4-Trichlorobenzene	88		19	ug/m³ Air	74.2		118	70-130	3	25	
1,2-Dibromoethane	90		19	ug/m³ Air	76.8		118	70-130	0.4	25	
1,2-Dichlorobenzene	79		15	ug/m³ Air	60.1		131	70-130	0.2	25	QL-02
1,2-Dichloroethane	47		10	ug/m³ Air	40.5		117	70-130	0.06	25	
1,2-Dichloropropane	54		12	ug/m³ Air	46.2		116	70-130	0.7	25	
1,3-Dichlorobenzene	78		15	ug/m³ Air	60.1		130	70-130	1	25	
1,4-Dichlorobenzene	78		15	ug/m³ Air	60.1		129	70-130	0.6	25	
2-Butanone	36		7.4	ug/m³ Air	29.5		121	70-130	2	25	
2-Hexanone	51		10	ug/m³ Air	41.0		125	70-130	0.1	25	
4-Methyl-2-pentanone	51		10	ug/m³ Air	41.0		124	70-130	0.9	25	
Acetone	27		5.9	ug/m³ Air	23.8		112	70-130	0.7	25	
Benzene	36		8.0	ug/m³ Air	32.0		112	70-130	1	25	
Bromodichloromethane	76		17	ug/m³ Air	67.0		113	70-130	0.4	25	
Bromoform	110		26	ug/m³ Air	103		105	70-130	0.6	25	
Bromomethane	44		9.7	ug/m³ Air	38.8		112	70-130	0.3	25	
Carbon disulfide	35		7.8	ug/m³ Air	31.1		112	70-130	0.03	25	
Carbon tetrachloride	46		16	ug/m³ Air	62.9		73	70-130	0.4	25	
Chlorobenzene	52		12	ug/m³ Air	46.0		113	70-130	0.03	25	
Chloroethane	31		6.6	ug/m³ Air	26.4		117	70-130	0.1	25	
Chloroform	58		12	ug/m³ Air	48.8		118	70-130	2	25	
Chloromethane	24		5.2	ug/m³ Air	20.7		116	70-130	0.9	25	
cis-1,2-Dichloroethene	45		9.9	ug/m³ Air	39.6		115	70-130	0.2	25	
cis-1,3-Dichloropropene	53		11	ug/m³ Air	45.4		118	70-130	0.5	25	
Cyclohexane	41		8.6	ug/m³ Air	34.4		120	70-130	1	25	
Dibromochloromethane	93		21	ug/m³ Air	85.2		109	70-130	0.8	25	
Dichlorodifluoromethane	60		12	ug/m³ Air	49.5		120	70-130	0.7	25	
Ethylbenzene	47		11	ug/m³ Air	43.4		109	70-130	0.2	25	
Freon 113	86		19	ug/m³ Air	76.6		113	70-130	1	25	
m,p-Xylenes	92		22	ug/m³ Air	86.8		106	70-130	0.07	25	
Methylene chloride	38		8.7	ug/m³ Air	34.7		109	70-130	3	25	
Methyl-tert-butyl ether	40		9.0	ug/m³ Air	36.1		112	70-130	0.2	25	
o-Xylene	48		11	ug/m³ Air	43.4		111	70-130	1	25	
Styrene	46		11	ug/m³ Air	42.6		108	70-130	0.6	25	
Tetrachloroethene	74		17	ug/m³ Air	67.8		109	70-130	1	25	
Toluene	40		9.4	ug/m³ Air	37.7		105	70-130	0.5	25	
trans-1,2-Dichloroethene	46		9.9	ug/m³ Air	39.6		116	70-130	1	25	
trans-1,3-Dichloropropene	58		11	ug/m³ Air	45.4		128	70-130	0.2	25	
Trichloroethene	60		13	ug/m³ Air	53.7		111	70-130	2	25	
Trichlorofluoromethane	67		14	ug/m³ Air	56.2		120	70-130	0.7	25	
Vinyl chloride	30		6.4	ug/m³ Air	25.6		119	70-130	0.6	25	
Xylenes (Total)	140		11	ug/m³ Air	130		108	70-130	0.3	25	
4-Bromofluorobenzene	*30*			*ppbv*	*31.0*		*97*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
J-01	Result may be biased high due to positive results in the associated method blank at a concentration above the MDL and/or greater than one-half the MRL.
J-05	Result may be biased low. Associated calibration verification standard did not meet the minimum control limit.
O-01	This compound is a common laboratory contaminant.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

AD05968

Tetra Tech, Inc.

CHAIN OF CUSTODY | **NUMBER** No. 1421 | **PAGE** 1 **OF** 1

PROJECT NO: 112 G09982	**FACILITY:** HMFN	**PROJECT MANAGER** Chris Hook	**PHONE NUMBER** 724 766 1043	**LABORATORY NAME AND CONTACT:** Encc
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Dan Forester	**PHONE NUMBER** 309 790 1426	**ADDRESS**
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Orlando FL

STANDARD TAT X
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS TO-15								COMMENTS
9/9	1635	HMFN UMP2 Field 2020 09 09	HMFN	/	/	Air	8hr C	1	X		Summa	TS CERC		Reg SA	0064	51			
9/9	1630	HMFN UMP2 Plot 2020 09 09	P2 HMFN	/	/	Air	8hr C	1	X		Summa	TS 0788		Reg SA	0662	92			

1. RELINQUISHED BY Tetra Tech	DATE 9.11.2020	TIME 1430	1. RECEIVED BY Jamal Gregory	DATE 9/11/20	TIME 1426
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS Box 25.3°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

9/14/2020

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN / 112G08982
Purchase Order # : 1170718

Lab Reference # : AD05968 Lab Receipt Date: 11-Sep-20 14:20
Anticipated ***(Estimated)*** Completion Date: 18-Sep-20 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMFN-VMP1-Field-20200909(Lab ID: AD05968-01), Matrix: Air, Sampled: 09-Sep-20 16:35 (GMT-05:00) Eastern Time (US &			
TO15 (SUMMA)	5	09-Oct-20 23:59	Received
Sample ID: HMFN-VMP2- P.Lot-20200909(Lab ID: AD05968-02), Matrix: Air, Sampled: 09-Sep-20 16:30 (GMT-05:00) Eastern Time (US &			
TO15 (SUMMA)	5	09-Oct-20 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AD05968-TE015

CLASS: 06_VOA_AIR

METHOD: TO-15

ANALYSES DATA PACKAGE COVER PAGE

TO-15

Laboratory: ENCO Orlando

SDG: AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Client Sample Id:	Lab Sample Id:
HMFN-VMP1-Field-20200909	AD05968-01
HMFN-VMP2- P.Lot-20200909	AD05968-02

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP1-Field-20200909

Laboratory: ENCO Orlando SDG: AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Air Laboratory ID: AD05968-01 File ID: 207IH010.D

Sampled: 09/09/20 16:35 Prepared: 09/14/20 08:00 Analyzed: 09/14/20 12:01

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 0I14028 Sequence: AA62436 Calibration: 2009010 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.33	3.6	UD	3.6	16
74-87-3	Chloromethane	1.33	1.6	JD	1.3	6.9
75-01-4	Vinyl chloride	1.33	11	D	1.9	8.5
74-83-9	Bromomethane	1.33	1.7	UD	1.7	13
75-00-3	Chloroethane	1.33	1.1	UD	1.1	8.8
75-69-4	Trichlorofluoromethane	1.33	2.5	UD	2.5	19
75-34-3	1,1-Dichloroethane	1.33	1.9	UD	1.9	13
67-64-1	Acetone	1.33	10	D	1.1	7.9
75-15-0	Carbon disulfide	1.33	1.7	UD	1.7	10
75-09-2	Methylene chloride	1.33	2.7	JBD	0.92	12
76-13-1	Freon 113	1.33	22	JD	3.3	25
156-60-5	trans-1,2-Dichloroethene	1.33	1.8	JD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.33	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.33	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.33	59	DE	2.0	13
78-93-3	2-Butanone	1.33	1.5	JD	1.3	9.8
67-66-3	Chloroform	1.33	2.5	UD	2.5	16
107-06-2	1,2-Dichloroethane	1.33	2.0	UD	2.0	13
71-55-6	1,1,1-Trichloroethane	1.33	2.5	UD	2.5	18
110-82-7	Cyclohexane	1.33	1.6	UD	1.6	11
56-23-5	Carbon tetrachloride	1.33	2.3	UD	2.3	21
71-43-2	Benzene	1.33	1.5	UD	1.5	11
78-87-5	1,2-Dichloropropane	1.33	2.5	UD	2.5	15
79-01-6	Trichloroethene	1.33	24	D	2.5	18
75-27-4	Bromodichloromethane	1.33	3.0	UD	3.0	22
10061-01-5	cis-1,3-Dichloropropene	1.33	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.33	2.1	UD	2.1	15
79-00-5	1,1,2-Trichloroethane	1.33	2.5	UD	2.5	18
108-10-1	4-Methyl-2-pentanone	1.33	1.9	UD	1.9	14
108-88-3	Toluene	1.33	1.9	UD	1.9	13
591-78-6	2-Hexanone	1.33	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.33	3.7	UD	3.7	26
127-18-4	Tetrachloroethene	1.33	2.8	UD	2.8	23
124-48-1	Dibromochloromethane	1.33	3.7	UD	3.7	28
108-90-7	Chlorobenzene	1.33	2.0	UD	2.0	15
100-41-4	Ethylbenzene	1.33	1.7	UD	1.7	14
1330-20-7	Xylenes (Total)	1.33	3.8	UD	3.8	14
100-42-5	Styrene	1.33	2.0	UD	2.0	14
75-25-2	Bromoform	1.33	5.2	UD	5.2	34
79-34-5	1,1,2,2-Tetrachloroethane	1.33	3.3	UD	3.3	23
541-73-1	1,3-Dichlorobenzene	1.33	2.2	UD	2.2	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP1-Field-20200909

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Air
Laboratory ID: AD05968-01
File ID: 207IH010.D
Sampled: 09/09/20 16:35
Prepared: 09/14/20 08:00
Analyzed: 09/14/20 12:01
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 0I14028
Sequence: AA62436
Calibration: 2009010
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.33	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.33	2.2	UD	2.2	20
120-82-1	1,2,4-Trichlorobenzene	1.33	3.8	UD	3.8	25

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	93	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	798551	11.03	720455	11.03	
1,4-Difluorobenzene	2750943	12.53	2458620	12.53	
Chlorobenzene-d5	2071196	15.93	1849264	15.93	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP2- P.Lot-20200909

Laboratory: ENCO Orlando SDG: AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Air Laboratory ID: AD05968-02 File ID: 207IH011.D

Sampled: 09/09/20 16:30 Prepared: 09/14/20 08:00 Analyzed: 09/14/20 12:46

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 0I14028 Sequence: AA62436 Calibration: 2009010 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.36	3.7	UD	3.7	17
74-87-3	Chloromethane	1.36	1.5	JD	1.3	7.0
75-01-4	Vinyl chloride	1.36	1.9	UD	1.9	8.7
74-83-9	Bromomethane	1.36	1.7	UD	1.7	13
75-00-3	Chloroethane	1.36	1.1	UD	1.1	9.0
75-69-4	Trichlorofluoromethane	1.36	2.6	UD	2.6	19
75-34-3	1,1-Dichloroethane	1.36	2.0	UD	2.0	14
67-64-1	Acetone	1.36	9.8	D	1.1	8.1
75-15-0	Carbon disulfide	1.36	1.8	UD	1.8	11
75-09-2	Methylene chloride	1.36	1.2	JBD	0.94	12
76-13-1	Freon 113	1.36	3.3	UD	3.3	26
156-60-5	trans-1,2-Dichloroethene	1.36	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.36	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.36	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.36	2.0	UD	2.0	13
78-93-3	2-Butanone	1.36	1.5	JD	1.3	10
67-66-3	Chloroform	1.36	2.5	UD	2.5	17
107-06-2	1,2-Dichloroethane	1.36	2.0	UD	2.0	14
71-55-6	1,1,1-Trichloroethane	1.36	2.5	UD	2.5	19
110-82-7	Cyclohexane	1.36	1.6	UD	1.6	12
56-23-5	Carbon tetrachloride	1.36	2.3	UD	2.3	21
71-43-2	Benzene	1.36	1.6	UD	1.6	11
78-87-5	1,2-Dichloropropane	1.36	2.5	UD	2.5	16
79-01-6	Trichloroethene	1.36	2.6	UD	2.6	18
75-27-4	Bromodichloromethane	1.36	3.1	UD	3.1	23
10061-01-5	cis-1,3-Dichloropropene	1.36	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.36	2.1	UD	2.1	15
79-00-5	1,1,2-Trichloroethane	1.36	2.6	UD	2.6	19
108-10-1	4-Methyl-2-pentanone	1.36	1.9	UD	1.9	14
108-88-3	Toluene	1.36	8.7	JD	1.9	13
591-78-6	2-Hexanone	1.36	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.36	3.8	UD	3.8	26
127-18-4	Tetrachloroethene	1.36	2.9	UD	2.9	23
124-48-1	Dibromochloromethane	1.36	3.8	UD	3.8	29
108-90-7	Chlorobenzene	1.36	2.1	UD	2.1	16
100-41-4	Ethylbenzene	1.36	1.8	UD	1.8	15
1330-20-7	Xylenes (Total)	1.36	7.6	JD	3.9	15
100-42-5	Styrene	1.36	2.1	UD	2.1	14
75-25-2	Bromoform	1.36	5.3	UD	5.3	35
79-34-5	1,1,2,2-Tetrachloroethane	1.36	3.4	UD	3.4	23
541-73-1	1,3-Dichlorobenzene	1.36	2.3	UD	2.3	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP2- P.Lot-20200909

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Air
Laboratory ID: AD05968-02
File ID: 207IH011.D
Sampled: 09/09/20 16:30
Prepared: 09/14/20 08:00
Analyzed: 09/14/20 12:46
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 0I14028
Sequence: AA62436
Calibration: 2009010
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.36	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.36	2.2	UD	2.2	20
120-82-1	1,2,4-Trichlorobenzene	1.36	3.9	UD	3.9	25

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	94	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	775009	11.03	720455	11.03	
1,4-Difluorobenzene	2701399	12.53	2458620	12.53	
Chlorobenzene-d5	2003738	15.93	1849264	15.93	

* Values outside of QC limits

HOLDING TIME SUMMARY

TO-15

Laboratory: ENCO Orlando

SDG: AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMFN-VMP1-Field-20200909	09/09/20 16:35	09/11/20 14:20	09/14/20 08:00	4.64	NA	09/14/20 12:01	5.00	30.00	
HMFN-VMP2- P.Lot-20200909	09/09/20 16:30	09/11/20 14:20	09/14/20 08:00	4.65	NA	09/14/20 12:46	5.00	30.00	

PREPARATION BATCH SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Batch: 0I14028 Batch Matrix: Air Preparation: NO PREP 2

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	0I14028-BLK1	207IH008.D	09/13/20 20:23	
LCS	0I14028-BS1	207IH004.D	09/13/20 20:23	
LCS Dup	0I14028-BSD1	207IH005.D	09/13/20 20:23	
HMFN-VMP1-Field-20200909	AD05968-01	207IH010.D	09/14/20 08:00	
HMFN-VMP2- P.Lot-20200909	AD05968-02	207IH011.D	09/14/20 08:00	

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Air	Laboratory ID:	0I14028-BLK1	File ID:	207IH008.D
Prepared:	09/13/20 20:23	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	09/14/20 00:25	Instrument:	OVGCMS7		
Batch:	0I14028	Sequence:	AA62436	Calibration:	2009010

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
75-71-8	Dichlorodifluoromethane	2.7	U
74-87-3	Chloromethane	0.99	U
75-01-4	Vinyl chloride	1.4	U
74-83-9	Bromomethane	1.3	U
75-00-3	Chloroethane	0.84	U
75-69-4	Trichlorofluoromethane	1.9	U
75-34-3	1,1-Dichloroethane	1.5	U
67-64-1	Acetone	0.83	U
75-15-0	Carbon disulfide	1.3	U
75-09-2	Methylene chloride	0.78	J
76-13-1	Freon 113	2.5	U
156-60-5	trans-1,2-Dichloroethene	1.3	U
1634-04-4	Methyl-tert-butyl ether	1.3	U
75-35-4	1,1-Dichloroethene	1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	U
78-93-3	2-Butanone	0.94	U
67-66-3	Chloroform	1.9	U
107-06-2	1,2-Dichloroethane	1.5	U
71-55-6	1,1,1-Trichloroethane	1.9	U
110-82-7	Cyclohexane	1.2	U
56-23-5	Carbon tetrachloride	1.7	U
71-43-2	Benzene	1.2	U
78-87-5	1,2-Dichloropropane	1.8	U
79-01-6	Trichloroethene	1.9	U
75-27-4	Bromodichloromethane	2.3	U
10061-01-5	cis-1,3-Dichloropropene	1.7	U
10061-02-6	trans-1,3-Dichloropropene	1.5	U
79-00-5	1,1,2-Trichloroethane	1.9	U
108-10-1	4-Methyl-2-pentanone	1.4	U
108-88-3	Toluene	1.4	U

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Air	Laboratory ID:	0I14028-BLK1	File ID:	207IH008.D
Prepared:	09/13/20 20:23	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	09/14/20 00:25	Instrument:	OVGCMS7		
Batch:	0I14028	Sequence:	AA62436	Calibration:	2009010

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
591-78-6	2-Hexanone	1.4	U
106-93-4	1,2-Dibromoethane	2.8	U
127-18-4	Tetrachloroethene	2.1	U
124-48-1	Dibromochloromethane	2.8	U
108-90-7	Chlorobenzene	1.5	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (Total)	2.9	U
100-42-5	Styrene	1.5	U
75-25-2	Bromoform	3.9	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	1.7	U
106-46-7	1,4-Dichlorobenzene	1.9	U
95-50-1	1,2-Dichlorobenzene	1.6	U
120-82-1	1,2,4-Trichlorobenzene	2.9	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	92	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	761576	11.02	720455	11.03	
1,4-Difluorobenzene	2656320	12.52	2458620	12.53	
Chlorobenzene-d5	1990640	15.92	1849264	15.93	

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I14028	Laboratory ID:	0I14028-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	49.5	60	121	70 - 130
Chloromethane	20.7	24	117	70 - 130
Vinyl chloride	25.6	31	119	70 - 130
Bromomethane	38.8	44	112	70 - 130
Chloroethane	26.4	31	117	70 - 130
Trichlorofluoromethane	56.2	67	119	70 - 130
1,1-Dichloroethane	40.5	47	116	70 - 130
Acetone	23.8	27	112	70 - 130
Carbon disulfide	31.1	35	112	70 - 130
Methylene chloride	34.7	37	106	70 - 130
Freon 113	76.6	85	111	70 - 130
trans-1,2-Dichloroethene	39.6	45	114	70 - 130
Methyl-tert-butyl ether	36.1	40	112	70 - 130
1,1-Dichloroethene	39.7	47	119	70 - 130
cis-1,2-Dichloroethene	39.6	45	115	70 - 130
2-Butanone	29.5	35	119	70 - 130
Chloroform	48.8	57	116	70 - 130
1,2-Dichloroethane	40.5	47	117	70 - 130
1,1,1-Trichloroethane	54.6	63	115	70 - 130
Cyclohexane	34.4	41	119	70 - 130
Carbon tetrachloride	62.9	46	73	70 - 130
Benzene	32.0	35	110	70 - 130
1,2-Dichloropropane	46.2	53	116	70 - 130
Trichloroethene	53.7	59	109	70 - 130
Bromodichloromethane	67.0	75	112	70 - 130
cis-1,3-Dichloropropene	45.4	53	117	70 - 130
trans-1,3-Dichloropropene	45.4	58	128	70 - 130
1,1,2-Trichloroethane	54.6	62	114	70 - 130
4-Methyl-2-pentanone	41.0	51	123	70 - 130
Toluene	37.7	40	106	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I14028	Laboratory ID:	0I14028-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
2-Hexanone	41.0	51	125	70 - 130
1,2-Dibromoethane	76.8	90	117	70 - 130
Tetrachloroethene	67.8	73	108	70 - 130
Dibromochloromethane	85.2	93	110	70 - 130
Chlorobenzene	46.0	52	113	70 - 130
Ethylbenzene	43.4	47	109	70 - 130
m,p-Xylenes	86.8	92	106	70 - 130
o-Xylene	43.4	48	110	70 - 130
Xylenes (Total)	130	140	107	70 - 130
Styrene	42.6	46	108	70 - 130
Bromoform	103	110	106	70 - 130
1,1,2,2-Tetrachloroethane	68.7	85	123	70 - 130
1,3-Dichlorobenzene	60.1	78	129	70 - 130
1,4-Dichlorobenzene	60.1	77	128	70 - 130
1,2-Dichlorobenzene	60.1	79	131 *	70 - 130
1,2,4-Trichlorobenzene	74.2	85	114	70 - 130

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	49.5	60	120	0.7	25	70 - 130
Chloromethane	20.7	24	116	0.9	25	70 - 130
Vinyl chloride	25.6	30	119	0.6	25	70 - 130
Bromomethane	38.8	44	112	0.3	25	70 - 130
Chloroethane	26.4	31	117	0.1	25	70 - 130
Trichlorofluoromethane	56.2	67	120	0.7	25	70 - 130
1,1-Dichloroethane	40.5	47	116	0.5	25	70 - 130
Acetone	23.8	27	112	0.7	25	70 - 130
Carbon disulfide	31.1	35	112	0.03	25	70 - 130
Methylene chloride	34.7	38	109	3	25	70 - 130
Freon 113	76.6	86	113	1	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I14028	Laboratory ID:	0I14028-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,2-Dichloroethene	39.6	46	116	1	25	70 - 130
Methyl-tert-butyl ether	36.1	40	112	0.2	25	70 - 130
1,1-Dichloroethene	39.7	47	119	0.5	25	70 - 130
cis-1,2-Dichloroethene	39.6	45	115	0.2	25	70 - 130
2-Butanone	29.5	36	121	2	25	70 - 130
Chloroform	48.8	58	118	2	25	70 - 130
1,2-Dichloroethane	40.5	47	117	0.06	25	70 - 130
1,1,1-Trichloroethane	54.6	63	115	0.4	25	70 - 130
Cyclohexane	34.4	41	120	1	25	70 - 130
Carbon tetrachloride	62.9	46	73	0.4	25	70 - 130
Benzene	32.0	36	112	1	25	70 - 130
1,2-Dichloropropane	46.2	54	116	0.7	25	70 - 130
Trichloroethene	53.7	60	111	2	25	70 - 130
Bromodichloromethane	67.0	76	113	0.4	25	70 - 130
cis-1,3-Dichloropropene	45.4	53	118	0.5	25	70 - 130
trans-1,3-Dichloropropene	45.4	58	128	0.2	25	70 - 130
1,1,2-Trichloroethane	54.6	63	115	0.4	25	70 - 130
4-Methyl-2-pentanone	41.0	51	124	0.9	25	70 - 130
Toluene	37.7	40	105	0.5	25	70 - 130
2-Hexanone	41.0	51	125	0.1	25	70 - 130
1,2-Dibromoethane	76.8	90	118	0.4	25	70 - 130
Tetrachloroethene	67.8	74	109	1	25	70 - 130
Dibromochloromethane	85.2	93	109	0.8	25	70 - 130
Chlorobenzene	46.0	52	113	0.03	25	70 - 130
Ethylbenzene	43.4	47	109	0.2	25	70 - 130
m,p-Xylenes	86.8	92	106	0.07	25	70 - 130
o-Xylene	43.4	48	111	1	25	70 - 130
Xylenes (Total)	130	140	108	0.3	25	70 - 130
Styrene	42.6	46	108	0.6	25	70 - 130
Bromoform	103	110	105	0.6	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0I14028	Laboratory ID:	0I14028-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,2,2-Tetrachloroethane	68.7	84	122	0.9	25	70 - 130
1,3-Dichlorobenzene	60.1	78	130	1	25	70 - 130
1,4-Dichlorobenzene	60.1	78	129	0.6	25	70 - 130
1,2-Dichlorobenzene	60.1	79	131 *	0.2	25	70 - 130
1,2,4-Trichlorobenzene	74.2	88	118	3	25	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA62229
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA62229-SCV1)			Lab File ID: 207I1017.D		Analyzed: 09/01/20 17:14			
4-Bromofluorobenzene	31.0	103	0 - 200	17.36	17.36	0.0000	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA62436
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA62436-CCV1)			Lab File ID: 207IH003.D		Analyzed: 09/13/20 21:08			
4-Bromofluorobenzene	31.0	100	0 - 200	17.36	17.36	0.0000	+/-1.0	
LCS (0I14028-BS1)			Lab File ID: 207IH004.D		Analyzed: 09/13/20 21:47			
4-Bromofluorobenzene	31.0	98	70 - 130	17.36	17.36	0.0000	+/-1.0	
LCS Dup (0I14028-BSD1)			Lab File ID: 207IH005.D		Analyzed: 09/13/20 22:26			
4-Bromofluorobenzene	31.0	97	70 - 130	17.36	17.36	0.0000	+/-1.0	
Instrument RL Check (AA62436-CRL1)			Lab File ID: 207IH006.D		Analyzed: 09/13/20 23:05			
4-Bromofluorobenzene	31.0	93	0 - 200	17.36	17.36	0.0000	+/-1.0	
Blank (0I14028-BLK1)			Lab File ID: 207IH008.D		Analyzed: 09/14/20 00:25			
4-Bromofluorobenzene	31.0	92	70 - 130	17.36	17.36	0.0000	+/-1.0	
HMFN-VMP1-Field-20200909 (AD05968-01)			Lab File ID: 207IH010.D		Analyzed: 09/14/20 12:01			
4-Bromofluorobenzene	31.0	93	70 - 130	17.36	17.36	0.0000	+/-1.0	
HMFN-VMP2- P.Lot-20200909 (AD05968-02)			Lab File ID: 207IH011.D		Analyzed: 09/14/20 12:46			
4-Bromofluorobenzene	31.0	94	70 - 130	17.36	17.36	0.0000	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA62229
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA62229-CAL1)			Lab File ID: 207I1004.D			Analyzed: 09/01/20 08:20			
Bromochloromethane	754508	11.02	720455	11.03	105	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1969336	15.92	1849264	15.93	106	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL2)			Lab File ID: 207I1005.D			Analyzed: 09/01/20 08:59			
Bromochloromethane	760658	11.02	720455	11.03	106	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1980384	15.92	1849264	15.93	107	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL3)			Lab File ID: 207I1006.D			Analyzed: 09/01/20 09:37			
Bromochloromethane	762082	11.02	720455	11.03	106	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	2005238	15.92	1849264	15.93	108	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL4)			Lab File ID: 207I1007.D			Analyzed: 09/01/20 10:16			
Bromochloromethane	749778	11.02	720455	11.03	104	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1959363	15.92	1849264	15.93	106	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA62229-CAL7)			Lab File ID: 207I1010.D			Analyzed: 09/01/20 12:22			
Bromochloromethane	720455	11.03	720455	11.03	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1849264	15.93	1849264	15.93	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL5)			Lab File ID: 207I1011.D			Analyzed: 09/01/20 13:04			
Bromochloromethane	616785	11.03	720455	11.03	86	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1868471	15.93	1849264	15.93	101	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL6)			Lab File ID: 207I1012.D			Analyzed: 09/01/20 13:42			
Bromochloromethane	730370	11.03	720455	11.03	101	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1885789	15.93	1849264	15.93	102	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL8)			Lab File ID: 207I1013.D			Analyzed: 09/01/20 14:29			
Bromochloromethane	626230	11.03	720455	11.03	87	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1573023	15.93	1849264	15.93	85	50 - 200	0.0000	+/-0.50	
Cal Standard (AA62229-CAL9)			Lab File ID: 207I1014.D			Analyzed: 09/01/20 15:14			
Bromochloromethane	592321	11.04	720455	11.03	82	60 - 140	0.0100	+/-0.50	
Chlorobenzene-d5	1469610	15.93	1849264	15.93	79	50 - 200	0.0000	+/-0.50	
Secondary Cal Check (AA62229-SCV1)			Lab File ID: 207I1017.D			Analyzed: 09/01/20 17:14			
Bromochloromethane	749928	11.04	720455	11.03	104	60 - 140	0.0100	+/-0.50	
Chlorobenzene-d5	1926964	15.93	1849264	15.93	104	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA62436
Instrument: OVGCMS7
Matrix: Air
Calibration: 2009010

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA62436-CCV1)			Lab File ID: 207IH003.D			Analyzed: 09/13/20 21:08			
Bromochloromethane	764137	11.03	720455	11.03	106	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1967899	15.93	1849264	15.93	106	50 - 200	0.0000	+/-0.50	
LCS (0I14028-BS1)			Lab File ID: 207IH004.D			Analyzed: 09/13/20 21:47			
Bromochloromethane	618904	11.03	720455	11.03	86	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1640496	15.93	1849264	15.93	89	50 - 200	0.0000	+/-0.50	
LCS Dup (0I14028-BSD1)			Lab File ID: 207IH005.D			Analyzed: 09/13/20 22:26			
Bromochloromethane	612015	11.03	720455	11.03	85	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1637465	15.93	1849264	15.93	89	50 - 200	0.0000	+/-0.50	
Instrument RL Check (AA62436-CRL1)			Lab File ID: 207IH006.D			Analyzed: 09/13/20 23:05			
Bromochloromethane	623563	11.02	720455	11.03	87	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1689581	15.92	1849264	15.93	91	50 - 200	-0.0100	+/-0.50	
Blank (0I14028-BLK1)			Lab File ID: 207IH008.D			Analyzed: 09/14/20 00:25			
Bromochloromethane	761576	11.02	720455	11.03	106	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	2656320	12.52	2458620	12.53	108	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	1990640	15.92	1849264	15.93	108	50 - 200	-0.0100	+/-0.50	
HMFN-VMP1-Field-20200909 (AD05968-01)			Lab File ID: 207IH010.D			Analyzed: 09/14/20 12:01			
Bromochloromethane	798551	11.03	720455	11.03	111	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	2750943	12.53	2458620	12.53	112	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	2071196	15.93	1849264	15.93	112	50 - 200	0.0000	+/-0.50	
HMFN-VMP2- P.Lot-20200909 (AD05968-02)			Lab File ID: 207IH011.D			Analyzed: 09/14/20 12:46			
Bromochloromethane	775009	11.03	720455	11.03	108	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	2701399	12.53	2458620	12.53	110	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	2003738	15.93	1849264	15.93	108	50 - 200	0.0000	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA62229		
Calibration:	2009010	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA62229-TUN1	207I1002.D	09/01/20 06:33
Cal Standard	AA62229-CAL1	207I1004.D	09/01/20 08:20
Cal Standard	AA62229-CAL2	207I1005.D	09/01/20 08:59
Cal Standard	AA62229-CAL3	207I1006.D	09/01/20 09:37
Cal Standard	AA62229-CAL4	207I1007.D	09/01/20 10:16
Cal Standard	AA62229-CAL7	207I1010.D	09/01/20 12:22
Cal Standard	AA62229-CAL5	207I1011.D	09/01/20 13:04
Cal Standard	AA62229-CAL6	207I1012.D	09/01/20 13:42
Cal Standard	AA62229-CAL8	207I1013.D	09/01/20 14:29
Cal Standard	AA62229-CAL9	207I1014.D	09/01/20 15:14
Secondary Cal Check	AA62229-SCV1	207I1017.D	09/01/20 17:14

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA62436		
Calibration:	2009010	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA62436-TUN1	207IH002.D	09/13/20 20:23
Calibration Check	AA62436-CCV1	207IH003.D	09/13/20 21:08
LCS	0I14028-BS1	207IH004.D	09/13/20 21:47
LCS Dup	0I14028-BSD1	207IH005.D	09/13/20 22:26
Instrument RL Check	AA62436-CRL1	207IH006.D	09/13/20 23:05
Blank	0I14028-BLK1	207IH008.D	09/14/20 00:25
HMFN-VMP1-Field-20200909	AD05968-01	207IH010.D	09/14/20 12:01
HMFN-VMP2- P.Lot-20200909	AD05968-02	207IH011.D	09/14/20 12:46

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	207I1002.D	Injection Date:	09/01/20
Instrument ID:	OVGCMS7	Injection Time:	06:33
Sequence:	AA62229	Lab Sample ID:	AA62229-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	19.3	PASS
75	30 - 66% of 95	39.2	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.53	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	81.7	PASS
175	4 - 9% of 174	8.92	PASS
176	95 - 101% of 174	101	PASS
177	5 - 9% of 176	6.58	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	207IH002.D	Injection Date:	09/13/20
Instrument ID:	OVGCMS7	Injection Time:	20:23
Sequence:	AA62436	Lab Sample ID:	AA62436-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	18.9	PASS
75	30 - 66% of 95	38.7	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.54	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	81.2	PASS
175	4 - 9% of 174	8.91	PASS
176	95 - 101% of 174	101	PASS
177	5 - 9% of 176	6.47	PASS

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS7	Calibration:	2009010
Lab File ID:	207IH003.D	Calibration Date:	09/01/20 06:33
Sequence:	AA62436	Injection Date:	09/13/20
Lab Sample ID:	AA62436-CCV1	Injection Time:	21:08

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	10.0	12	2.225314	2.607436		17	30
Chloromethane	A	10.0	12	1.411339	1.672349		19	30
Vinyl chloride	A	10.0	12	1.258522	1.527612		21	30
Bromomethane	A	10.0	11	0.9611645	1.047527		9.0	30
Chloroethane	A	10.0	11	0.5231733	0.5740422		9.7	30
Trichlorofluoromethane	A	10.0	11	1.612561	1.733218		7.5	30
1,1-Dichloroethane	A	10.0	11	2.083198	2.281974		9.5	30
Acetone	A	10.0	10	2.352154	2.391598		1.7	30
Carbon disulfide	A	10.0	11	3.371876	3.869405		15	30
Methylene chloride	A	10.0	11	1.076514	1.160425		7.8	30
Freon 113	A	10.0	11	1.499698	1.671071		11	30
trans-1,2-Dichloroethene	A	10.0	11	1.620164	1.797024		11	30
Methyl-tert-butyl ether	A	10.0	11	2.932301	3.14278		7.2	30
1,1-Dichloroethene	A	10.0	11	1.753325	1.986362		13	30
cis-1,2-Dichloroethene	A	10.0	11	1.170851	1.298188		11	30
2-Butanone	A	10.0	11	3.465852	3.641774		5.1	30
Chloroform	A	10.0	11	2.096944	2.281982		8.8	30
1,2-Dichloroethane	A	10.0	10	1.240659	1.270115		2.4	30
1,1,1-Trichloroethane	A	10.0	10	1.716679	1.782298		3.8	30
Cyclohexane	A	10.0	11	1.941856	2.181713		12	30
Carbon tetrachloride	A	10.0	10	1.687549	1.754476		4.0	30
Benzene	A	10.0	10	3.52937	3.676497		4.2	30
1,2-Dichloropropane	A	10.0	11	0.3905356	0.4258902		9.1	30
Trichloroethene	A	10.0	11	0.4190128	0.4423411		5.6	30
Bromodichloromethane	A	10.0	11	0.598495	0.6703531		12	30
cis-1,3-Dichloropropene	A	10.0	11	0.5704011	0.6091514		6.8	30
trans-1,3-Dichloropropene	A	10.0	10	0.4018199	0.4172207		3.8	30
1,1,2-Trichloroethane	A	10.0	11	0.3710501	0.3982323		7.3	30
4-Methyl-2-pentanone	A	10.0	11	1.103402	1.180902		7.0	30

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS7	Calibration:	2009010
Lab File ID:	207IH003.D	Calibration Date:	09/01/20 06:33
Sequence:	AA62436	Injection Date:	09/13/20
Lab Sample ID:	AA62436-CCV1	Injection Time:	21:08

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	10.0	10	0.6998491	0.6985087		-0.2	30	
2-Hexanone	A	10.0	10	0.9756389	1.024007		5.0	30	
1,2-Dibromoethane	A	10.0	11	0.5915854	0.6463359		9.3	30	
Tetrachloroethene	A	10.0	10	0.4977973	0.5018213		0.80	30	
Dibromochloromethane	A	10.0	11	0.484477	0.5442167		12	30	
Chlorobenzene	A	10.0	10	0.9644813	0.9970052		3.4	30	
Ethylbenzene	A	10.0	9.9	0.4808969	0.4762399		-1	30	
m,p-Xylenes	A	20.0	19	0.6687477	0.6489887		-3	30	
o-Xylene	A	10.0	10	0.6240481	0.6473583		3.7	30	
Styrene	A	10.0	11	0.9174599	0.9966271		8.6	30	
Bromoform	A	10.0	11	0.6553159	0.7525873		15	30	
1,1,2,2-Tetrachloroethane	A	10.0	11	0.8568666	0.9732861		14	30	
1,3-Dichlorobenzene	A	10.0	12	0.658507	0.7592932		15	30	
1,4-Dichlorobenzene	A	10.0	12	0.6246073	0.7195787		15	30	
1,2-Dichlorobenzene	A	10.0	9.3	0.5998125	0.5576254		-7	30	
1,2,4-Trichlorobenzene	A	10.0	6.9	0.1501591	0.1630183		-31	30	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

TO-15

Laboratory:	ENCO Orlando	SDG:	AD05968-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA62229	Instrument:	OVGCMS7
Calibration:	2009010		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0H1322	Air- VIRTUAL TUN-083120	AA62229-TUN1	207I1002.D	09/01/20 06:33
A0H1127	Air- Virtual CAL1 082520	AA62229-CAL1	207I1004.D	09/01/20 08:20
A0H1128	Air- Virtual CAL2 082520	AA62229-CAL2	207I1005.D	09/01/20 08:59
A0H1129	Air- Virtual CAL3 082520	AA62229-CAL3	207I1006.D	09/01/20 09:37
A0H1130	Air- Virtual CAL4 082520	AA62229-CAL4	207I1007.D	09/01/20 10:16
A0H1133	Air- Virtual CAL7 082520	AA62229-CAL7	207I1010.D	09/01/20 12:22
A0H1131	Air- Virtual CAL5 082520	AA62229-CAL5	207I1011.D	09/01/20 13:04
A0H1132	Air- Virtual CAL6 082520	AA62229-CAL6	207I1012.D	09/01/20 13:42
A0H1134	Air- Virtual CAL8 082520	AA62229-CAL8	207I1013.D	09/01/20 14:29
A0H1135	Air- Virtual CAL9 082520	AA62229-CAL9	207I1014.D	09/01/20 15:14
A0H1136	Air- Virtual SCV 082520	AA62229-SCV1	207I1017.D	09/01/20 17:14

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	0.125	2.746213	0.25	2.590825	0.5	2.345658	1.25	2.47574	2.5	2.180788	5	1.963988
Chloromethane	0.125	1.824235	0.25	1.652012	0.5	1.457413	1.25	1.557504	2.5	1.280279	5	1.213523
Vinyl chloride	0.125	1.557009	0.25	1.423136	0.5	1.30487	1.25	1.405716	2.5	1.162207	5	1.088194
Bromomethane	0.125	1.331527	0.25	1.116665	0.5	1.057304	1.25	0.9966929	2.5	0.8898141	5	0.8043438
Chloroethane	0.125	0.7267358	0.25	0.5721888	0.5	0.5478518	1.25	0.5427516	2.5	0.4822809	5	0.4616915
Trichlorofluoromethane	0.125	1.840341	0.25	1.707274	0.5	1.687813	1.25	1.699468	2.5	1.51954	5	1.549249
1,1-Dichloroethane	0.125	2.419166	0.25	2.197792	0.5	2.161956	1.25	2.189562	2.5	1.908557	5	2.107688
Acetone	0.125	~~4.478086~~	0.25	3.176871	0.5	2.662784	1.25	2.403335	2.5	2.067079	5	2.23547
Carbon disulfide	0.125	4.324916	0.25	3.797475	0.5	3.602447	1.25	3.533095	2.5	2.980777	5	3.103514
Methylene chloride	0.125	~~3.067673~~	0.25	~~2.040807~~	0.5	1.474091	1.25	1.236828	2.5	0.9573041	5	1.080503
Freon 113	0.125	1.796954	0.25	1.659511	0.5	1.600437	1.25	1.65637	2.5	1.393144	5	1.414726
trans-1,2-Dichloroethene	0.125	1.870581	0.25	1.700591	0.5	1.659745	1.25	1.69196	2.5	1.458	5	1.652524
Methyl-tert-butyl ether	0.125	3.720125	0.25	3.107914	0.5	3.029456	1.25	2.987135	2.5	2.604003	5	2.901115
1,1-Dichloroethene	0.125	2.016519	0.25	1.84535	0.5	1.797481	1.25	1.888368	2.5	1.645533	5	1.676972
cis-1,2-Dichloroethene	0.125	1.364068	0.25	1.276584	0.5	1.19089	1.25	1.255483	2.5	1.041119	5	1.208956
2-Butanone	0.125	4.117512	0.25	3.536812	0.5	3.300779	1.25	3.443491	2.5	3.276812	5	3.391465
Chloroform	0.125	2.447105	0.25	2.165189	0.5	2.161631	1.25	2.246024	2.5	1.966417	5	2.111465
1,2-Dichloroethane	0.125	1.355193	0.25	1.328261	0.5	1.217819	1.25	1.220521	2.5	1.247107	5	1.216308
1,1,1-Trichloroethane	0.125	1.909366	0.25	1.909089	0.5	1.7686	1.25	1.762148	2.5	1.60643	5	1.69923
Cyclohexane	0.125	2.057934	0.25	1.973318	0.5	2.006404	1.25	2.068899	2.5	1.840243	5	2.027154
Carbon tetrachloride	0.125	1.863349	0.25	1.776394	0.5	1.658688	1.25	1.731222	2.5	1.609647	5	1.722642
Benzene	0.125	4.319	0.25	3.825677	0.5	3.505796	1.25	3.477129	2.5	3.645202	5	3.396796
1,2-Dichloropropane	0.125	0.4682238	0.25	0.4058708	0.5	0.4039575	1.25	0.399665	2.5	0.3665358	5	0.3986255
Trichloroethene	0.125	0.5080219	0.25	0.4628194	0.5	0.4402278	1.25	0.4278125	2.5	0.3867649	5	0.4195372
Bromodichloromethane	0.125	0.6263663	0.25	0.6158007	0.5	0.5945989	1.25	0.6314732	2.5	0.5661847	5	0.6325848
cis-1,3-Dichloropropene	0.125	0.6582429	0.25	0.6442041	0.5	0.5692331	1.25	0.5717391	2.5	0.5217315	5	0.5760751
trans-1,3-Dichloropropene	0.125	0.4848302	0.25	0.4565337	0.5	0.4066017	1.25	0.3989829	2.5	0.3663128	5	0.399378
1,1,2-Trichloroethane	0.125	0.4400693	0.25	0.403366	0.5	0.3679212	1.25	0.3672042	2.5	0.3404713	5	0.3729558
4-Methyl-2-pentanone	0.125	1.265808	0.25	1.095539	0.5	1.030334	1.25	1.10313	2.5	1.01678	5	1.109924
Toluene	0.125	0.9903707	0.25	0.850684	0.5	0.7785478	1.25	0.6674309	2.5	0.6020747	5	0.6599821
2-Hexanone	0.125	1.259509	0.25	0.9917085	0.5	0.9107588	1.25	0.9452356	2.5	0.8876133	5	0.9645447

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando

SDG: AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Calibration: 2009010

Instrument: OVGCMS7

Matrix: Air

Calibration Date: 09/01/20 06:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	0.125	0.6890697	0.25	0.6184	0.5	0.6150974	1.25	0.6072837	2.5	0.5599081	5	0.6110455
Tetrachloroethene	0.125	0.6639692	0.25	0.5583323	0.5	0.5300611	1.25	0.5032246	2.5	0.4465546	5	0.4936508
Dibromochloromethane	0.125	0.5049678	0.25	0.4752488	0.5	0.4467331	1.25	0.5090654	2.5	0.4561215	5	0.5115973
Chlorobenzene	0.125	1.174934	0.25	1.120229	0.5	1.033097	1.25	0.9728431	2.5	0.9006515	5	0.9691494
Ethylbenzene	0.125	0.6867005	0.25	0.5540723	0.5	0.5284061	1.25	0.481441	2.5	0.4271679	5	0.4653644
m,p-Xylenes	0.25	0.9641889	0.5	0.8359611	1	0.757547	2.5	0.6519015	5	0.5932216	10	0.6335442
o-Xylene	0.125	0.8215723	0.25	0.7148028	0.5	0.6765391	1.25	0.6204674	2.5	0.5510902	5	0.6205757
Styrene	0.125	1.083508	0.25	0.972272	0.5	0.9103797	1.25	0.9246826	2.5	0.8481572	5	0.9414073
Bromoform	0.125	0.6656701	0.25	0.6161855	0.5	0.5981285	1.25	0.6959421	2.5	0.6547182	5	0.7249157
1,1,2,2-Tetrachloroethane	0.125	1.008831	0.25	0.9033965	0.5	0.8513553	1.25	0.8907866	2.5	0.8336433	5	0.8870411
1,3-Dichlorobenzene	0.125	0.6664256	0.25	0.6299607	0.5	0.622369	1.25	0.6806016	2.5	0.6451883	5	0.7204937
1,4-Dichlorobenzene	0.125	0.6487953	0.25	0.6278318	0.5	0.5566352	1.25	0.6385671	2.5	0.6031199	5	0.6736005
1,2-Dichlorobenzene	0.125	0.6246166	0.25	0.5831879	0.5	0.5333222	1.25	0.6117845	2.5	0.6128821	5	0.6626556
1,2,4-Trichlorobenzene	0.125	0.1283235	0.25	0.1050039	0.5	0.1017545	1.25	0.1190534	2.5	0.1423517	5	0.1467815
4-Bromofluorobenzene	31	0.4615942	31	0.4654335	31	0.4636218	31	0.4710419	31	0.4732527	31	0.4873297

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	10	1.737128	25	2.014444	50	1.973042						
Chloromethane	10	1.043459	25	1.2852	50	1.388425						
Vinyl chloride	10	0.9562624	25	1.167655	50	1.261653						
Bromomethane	10	0.7078811	25	0.8466881	50	0.8995648						
Chloroethane	10	0.4003144	25	0.4645876	50	0.5101572						
Trichlorofluoromethane	10	1.329391	25	1.525115	50	1.65486						
1,1-Dichloroethane	10	1.847122	25	1.880451	50	2.036484						
Acetone	10	1.937761	25	2.08387	50	2.250064						
Carbon disulfide	10	2.924208	25	2.946152	50	3.134297						
Methylene chloride	10	0.9107513	25	0.9128632	50	0.9632583						
Freon 113	10	1.309912	25	1.321705	50	1.34452						
trans-1,2-Dichloroethene	10	1.44176	25	1.500687	50	1.60563						
Methyl-tert-butyl ether	10	2.536535	25	2.729703	50	2.774725						
1,1-Dichloroethene	10	1.551276	25	1.606604	50	1.751822						
cis-1,2-Dichloroethene	10	1.051136	25	1.059559	50	1.089862						
2-Butanone	10	2.977528	25	3.723748	50	3.424517						
Chloroform	10	1.858559	25	1.961498	50	1.954606						
1,2-Dichloroethane	10	1.044991	25	1.296376	50	1.239353						
1,1,1-Trichloroethane	10	1.477478	25	1.741451	50	1.576315						
Cyclohexane	10	1.768018	25	1.852626	50	1.882106						
Carbon tetrachloride	10	1.481178	25	1.758409	50	1.586409						
Benzene	10	2.951716	25	3.562269	50	3.080743						
1,2-Dichloropropane	10	0.3445579	25	0.3565008	50	0.370883						
Trichloroethene	10	0.3684539	25	0.3756497	50	0.3818278						
Bromodichloromethane	10	0.5479816	25	0.5755935	50	0.5958715						
cis-1,3-Dichloropropene	10	0.5014316	25	0.537063	50	0.5538896						
trans-1,3-Dichloropropene	10	0.3458717	25	0.4065185	50	0.3513493						
1,1,2-Trichloroethane	10	0.323862	25	0.388123	50	0.3354778						
4-Methyl-2-pentanone	10	0.969179	25	1.196664	50	1.143263						
Toluene	10	0.5677344	25	0.5922115	50	0.5896063						
2-Hexanone	10	0.8491555	25	0.9533907	50	1.018834						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	10	0.5297305	25	0.5333045	50	0.5604294						
Tetrachloroethene	10	0.4143332	25	0.4779947	50	0.392055						
Dibromochloromethane	10	0.4495291	25	0.5342822	50	0.472748						
Chlorobenzene	10	0.8433814	25	0.8392234	50	0.8268232						
Ethylbenzene	10	0.39789	25	0.3959736	50	0.3910563						
m,p-Xylenes	20	0.5423136	50	0.5333459	100	0.5067054						
o-Xylene	10	0.5343241	25	0.5272524	50	0.5498088						
Styrene	10	0.8256071	25	0.8630534	50	0.8880718						
Bromoform	10	0.6334161	25	0.6520586	50	0.6568082						
1,1,2,2-Tetrachloroethane	10	0.7790936	25	0.7552073	50	0.8024448						
1,3-Dichlorobenzene	10	0.6304037	25	0.6441442	50	0.6869761						
1,4-Dichlorobenzene	10	0.5984007	25	0.6147212	50	0.6597939						
1,2-Dichlorobenzene	10	0.5758706	25	0.5795839	50	0.6144092						
1,2,4-Trichlorobenzene	10	0.149342	25	0.2091076	50	0.2497137						
4-Bromofluorobenzene	31	0.4980933	31	0.510304	31	0.5461088						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	2.225314	15.06274	4.557778	0.2394937			30	
Chloromethane	1.411339	16.98986	5.061111	0.2311476			30	
Vinyl chloride	1.258522	14.81002	5.32	0.2105278			30	
Bromomethane	0.9611645	19.55398	6.148889	0.2070399			30	
Chloroethane	0.5231733	17.74898	6.477778	0.1852232			30	
Trichlorofluoromethane	1.612561	9.20725	6.803333	0.2075717			30	
1,1-Dichloroethane	2.083198	8.878016	10.04889	0.1039833			30	
Acetone	2.352154	17.06837	8.99875	3.995619E-02			30	
Carbon disulfide	3.371876	14.1907	7.893333	0.2001535			30	
Methylene chloride	1.076514	19.52512	8.872857	0.1248481			30	
Freon 113	1.499698	11.99663	7.953333	0.1538423			30	
trans-1,2-Dichloroethene	1.620164	8.439156	9.134445	0.1457913			30	
Methyl-tert-butyl ether	2.932301	12.0283	9.35	5.491324E-02			30	
1,1-Dichloroethene	1.753325	8.501008	7.854445	0.1572708			30	
cis-1,2-Dichloroethene	1.170851	9.906757	10.76333	0.0931772			30	
2-Butanone	3.465852	9.154805	11.49222	0.0392965			30	
Chloroform	2.096944	8.701682	11.09778	7.516091E-02			30	
1,2-Dichloroethane	1.240659	7.194968	12.07444	5.857727E-02			30	
1,1,1-Trichloroethane	1.716679	8.46423	11.39	6.072828E-02			30	
Cyclohexane	1.941856	5.585801	11.04444	9.170877E-02			30	
Carbon tetrachloride	1.687549	6.842866	11.30333	6.149401E-02			30	
Benzene	3.52937	11.34066	11.84111	5.411332E-02			30	
1,2-Dichloropropane	0.3905356	9.423025	13.13556	5.233828E-02			30	
Trichloroethene	0.4190128	11.07524	12.50778	6.688433E-02			30	
Bromodichloromethane	0.598495	5.105024	13.17222	2.919393E-02			30	
cis-1,3-Dichloropropene	0.5704011	9.132396	13.89111	2.832081E-02			30	
trans-1,3-Dichloropropene	0.4018199	11.43218	14.61556	3.659225E-02			30	
1,1,2-Trichloroethane	0.3710501	9.78922	14.81333	2.827788E-02			30	
4-Methyl-2-pentanone	1.103402	8.332498	14.57111	2.848533E-02			30	
Toluene	0.6998491	20.62872	14.17778	4.396212E-02			30	

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD05968-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2009010
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 09/01/20 06:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Hexanone	0.9756389	12.13868	15.51444	3.058825E-02			30	
1,2-Dibromoethane	0.5915854	8.57708	15.36	4.756948E-02			30	
Tetrachloroethene	0.4977973	16.43253	14.63111	1.163171E-02			30	
Dibromochloromethane	0.484477	6.491719	15.04111	2.201801E-02			30	
Chlorobenzene	0.9644813	13.04951	15.94667	3.270613E-02			30	
Ethylbenzene	0.4808969	20.1702	15.93889	2.164073E-02			30	
m,p-Xylenes	0.6687477	23.10127	16.09222	2.023865E-02			30	
o-Xylene	0.6240481	15.85187	16.62	3.018551E-02			30	
Styrene	0.9174599	8.470551	16.67444	3.656002E-02			30	
Bromoform	0.6553159	5.884485	16.74889	4.831623E-02			30	
1,1,2,2-Tetrachloroethane	0.8568666	8.967446	17.54111	2.592137E-02			30	
1,3-Dichlorobenzene	0.658507	4.949423	18.66	2.315104E-02			30	
1,4-Dichlorobenzene	0.6246073	5.743345	18.76111	0.0271012			30	
1,2-Dichlorobenzene	0.5998125	6.117543	19.31222	1.643618E-02			30	
1,2,4-Trichlorobenzene	0.1501591	32.69776	21.23444	3.008408E-02	0.990		0.99	
4-Bromofluorobenzene	0.4863089	5.750567	17.36	1.697032E-02			30	

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2009010 **Laboratory ID:** AA62229-SCV1

Sequence: AA62229 **Standard ID:** A0H1136

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
Chlorobenzene	10.0	9.7	-2.9	30.00
Ethylbenzene	10.0	9.4	-6.3	30.00
Carbon tetrachloride	10.0	8.0	-20.4	30.00
1,3-Dichlorobenzene	10.0	11	15.0	30.00
Methyl-tert-butyl ether	10.0	9.3	-6.5	30.00
trans-1,2-Dichloroethene	10.0	9.7	-2.8	30.00
cis-1,2-Dichloroethene	10.0	9.9	-0.8	30.00
Xylenes (Total)	30.0	28	-6.6	30.00
Tetrachloroethene	10.0	9.4	-6.0	30.00
Dibromochloromethane	10.0	9.8	-1.7	30.00
Acetone	10.0	9.0	-9.8	30.00
Cyclohexane	10.0	9.6	-3.8	30.00
Chloroform	10.0	9.7	-2.7	30.00
Toluene	10.0	9.2	-8.4	30.00
m,p-Xylenes	20.0	18	-8.6	30.00
4-Methyl-2-pentanone	10.0	9.8	-1.6	30.00
1,2-Dichloroethane	10.0	9.5	-4.8	30.00
1,2-Dibromoethane	10.0	10	1.7	30.00
1,4-Dichlorobenzene	10.0	11	13.7	30.00
trans-1,3-Dichloropropene	10.0	11	5.7	30.00
cis-1,3-Dichloropropene	10.0	10	-0.5	30.00
Styrene	10.0	9.3	-7.0	30.00
1,2,4-Trichlorobenzene	10.0	8.8	-11.6	30.00
Bromodichloromethane	10.0	9.8	-2.5	30.00
o-Xylene	10.0	9.7	-2.6	30.00
1,1,2,2-Tetrachloroethane	10.0	11	8.6	30.00
Trichloroethene	10.0	9.5	-5.2	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AD05968-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2009010 **Laboratory ID:** AA62229-SCV1

Sequence: AA62229 **Standard ID:** A0H1136

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
1,1,2-Trichloroethane	10.0	9.7	-2.7	30.00
2-Butanone	10.0	9.4	-6.3	30.00
1,2-Dichloropropane	10.0	9.9	-0.8	30.00
Freon 113	10.0	10	0.3	30.00
Dichlorodifluoromethane	10.0	10	2.5	30.00
Trichlorofluoromethane	10.0	9.8	-2.2	30.00
2-Hexanone	10.0	9.9	-0.8	30.00
1,1-Dichloroethane	10.0	9.8	-2.1	30.00
1,2-Dichlorobenzene	10.0	9.7	-2.8	30.00
Bromoform	10.0	10	0.2	30.00
Carbon disulfide	10.0	9.9	-0.9	30.00
Methylene chloride	10.0	9.5	-4.9	30.00
Vinyl chloride	10.0	10	4.3	30.00
Chloroethane	10.0	9.9	-1.0	30.00
Chloromethane	10.0	10	-0.2	30.00
Bromomethane	10.0	9.8	-1.8	30.00
1,1,1-Trichloroethane	10.0	9.4	-5.7	30.00
Benzene	10.0	9.2	-7.8	30.00
1,1-Dichloroethene	10.0	10	-0.04	30.00

* Values outside of QC limits

TETRA TECH ISG
TtNUS, Information Systems Group

Completion Ticket

On 9/29/2020 at 1:43 PM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AD05968A1.txt, TE015AD05968A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2020929_4480053050_ledd_ENCO

You may print this page by clicking on the "Print This Page" button

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: October 01, 2020

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Friday, November 20, 2020
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AD07766

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, November 13, 2020.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AD07766
SDG: AD07766-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
TO-15	OVGCMS7

Analysis: TO-15

The calibration curve and the continuing calibration standards are in ppbv. Raw data is reported in pptv. Per request, results may be reported in a unit other than ppbv which is obtained through a conversion factor set up in the laboratories' database.

Manual integrations were performed on samples associated with TO-15. All data & explanations are included in the raw data section of the report.

Acetone is a common laboratory contaminant.

Affected Samples: 0K15003-BS1, 0K15003-BSD1, HMFN-VMP01-20201111[AD07766-01], HMFN-VMP02-20201111[AD07766-02]
The associated laboratory control sample exhibited high bias for multiple analytes. Analytes not detected in the sample.

Affected Samples: 0K15003-BLK1, HMFN-VMP01-20201111[AD07766-01], HMFN-VMP02-20201111[AD07766-02]
Result may be biased high due to positive results for acetone in the associated method blank.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-VMP01-20201111 **Lab ID: AD07766-01** **Sampled: 11/11/20 15:08** **Received: 11/13/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	12/11/20	11/16/20 12:00	11/16/20 14:47

Client ID: HMFN-VMP02-20201111 **Lab ID: AD07766-02** **Sampled: 11/11/20 15:03** **Received: 11/13/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	12/11/20	11/16/20 12:00	11/16/20 15:33

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMFN-VMP01-20201111 **Lab ID:** AD07766-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	6.5	IV	1.1	7.8	ug/m³ Air	TO-15	J-01, O-01
Chloromethane	1.4	I	1.3	6.8	ug/m³ Air	TO-15	

Client ID: HMFN-VMP02-20201111 **Lab ID:** AD07766-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	1.6	I	1.2	9.6	ug/m³ Air	TO-15	
Acetone	7.7	V	1.1	7.7	ug/m³ Air	TO-15	J-01, O-01
Chloromethane	1.5	I	1.3	6.7	ug/m³ Air	TO-15	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-VMP01-20201111 | **Lab Sample ID:** AD07766-01 | **Received:** 11/13/20 14:30

Matrix: Air | **Sampled:** 11/11/20 15:08 | **Work Order:** AD07766

Project: NASA KSC HMFN | **Sampled By:** Melissa Bennett | **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.4	U	ug/m³ Air	1.31	2.4	18	0K15003	TO-15	11/16/20 14:47	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.2	U	ug/m³ Air	1.31	3.2	22	0K15003	TO-15	11/16/20 14:47	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.5	U	ug/m³ Air	1.31	2.5	18	0K15003	TO-15	11/16/20 14:47	rgg	
1,1-Dichloroethane [75-34-3]^	1.9	U	ug/m³ Air	1.31	1.9	13	0K15003	TO-15	11/16/20 14:47	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.31	2.0	13	0K15003	TO-15	11/16/20 14:47	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.8	U	ug/m³ Air	1.31	3.8	24	0K15003	TO-15	11/16/20 14:47	rgg	
1,2-Dibromoethane [106-93-4]^	3.6	U	ug/m³ Air	1.31	3.6	25	0K15003	TO-15	11/16/20 14:47	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.1	U	ug/m³ Air	1.31	2.1	20	0K15003	TO-15	11/16/20 14:47	rgg	QL-02
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.31	2.0	13	0K15003	TO-15	11/16/20 14:47	rgg	
1,2-Dichloropropane [78-87-5]^	2.4	U	ug/m³ Air	1.31	2.4	15	0K15003	TO-15	11/16/20 14:47	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.2	U	ug/m³ Air	1.31	2.2	20	0K15003	TO-15	11/16/20 14:47	rgg	QL-02
1,4-Dichlorobenzene [106-46-7]^	2.4	U	ug/m³ Air	1.31	2.4	20	0K15003	TO-15	11/16/20 14:47	rgg	QL-02
2-Butanone [78-93-3]^	1.2	U	ug/m³ Air	1.31	1.2	9.7	0K15003	TO-15	11/16/20 14:47	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.31	1.8	13	0K15003	TO-15	11/16/20 14:47	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.8	U	ug/m³ Air	1.31	1.8	13	0K15003	TO-15	11/16/20 14:47	rgg	
Acetone [67-64-1]^	**6.5**	IV	ug/m³ Air	1.31	1.1	7.8	0K15003	TO-15	11/16/20 14:47	rgg	J-01, O-01
Benzene [71-43-2]^	1.5	U	ug/m³ Air	1.31	1.5	10	0K15003	TO-15	11/16/20 14:47	rgg	
Bromodichloromethane [75-27-4]^	3.0	U	ug/m³ Air	1.31	3.0	22	0K15003	TO-15	11/16/20 14:47	rgg	
Bromoform [75-25-2]^	5.1	U	ug/m³ Air	1.31	5.1	34	0K15003	TO-15	11/16/20 14:47	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.31	1.7	13	0K15003	TO-15	11/16/20 14:47	rgg	
Carbon disulfide [75-15-0]^	1.7	U	ug/m³ Air	1.31	1.7	10	0K15003	TO-15	11/16/20 14:47	rgg	
Carbon tetrachloride [56-23-5]^	2.2	U	ug/m³ Air	1.31	2.2	21	0K15003	TO-15	11/16/20 14:47	rgg	
Chlorobenzene [108-90-7]^	2.0	U	ug/m³ Air	1.31	2.0	15	0K15003	TO-15	11/16/20 14:47	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.31	1.1	8.6	0K15003	TO-15	11/16/20 14:47	rgg	
Chloroform [67-66-3]^	2.4	U	ug/m³ Air	1.31	2.4	16	0K15003	TO-15	11/16/20 14:47	rgg	
Chloromethane [74-87-3]^	**1.4**	I	ug/m³ Air	1.31	1.3	6.8	0K15003	TO-15	11/16/20 14:47	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.31	2.0	13	0K15003	TO-15	11/16/20 14:47	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.31	2.3	15	0K15003	TO-15	11/16/20 14:47	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.31	1.6	11	0K15003	TO-15	11/16/20 14:47	rgg	
Dibromochloromethane [124-48-1]^	3.7	U	ug/m³ Air	1.31	3.7	28	0K15003	TO-15	11/16/20 14:47	rgg	
Dichlorodifluoromethane [75-71-8]^	3.6	U	ug/m³ Air	1.31	3.6	16	0K15003	TO-15	11/16/20 14:47	rgg	
Ethylbenzene [100-41-4]^	1.7	U	ug/m³ Air	1.31	1.7	14	0K15003	TO-15	11/16/20 14:47	rgg	
Freon 113 [76-13-1]^	3.2	U	ug/m³ Air	1.31	3.2	25	0K15003	TO-15	11/16/20 14:47	rgg	
Methylene chloride [75-09-2]^	0.91	U	ug/m³ Air	1.31	0.91	11	0K15003	TO-15	11/16/20 14:47	rgg	
Methyl-tert-butyl ether [1634-04-4]^	1.7	U	ug/m³ Air	1.31	1.7	12	0K15003	TO-15	11/16/20 14:47	rgg	
Styrene [100-42-5]^	2.0	U	ug/m³ Air	1.31	2.0	14	0K15003	TO-15	11/16/20 14:47	rgg	
Tetrachloroethene [127-18-4]^	2.8	U	ug/m³ Air	1.31	2.8	22	0K15003	TO-15	11/16/20 14:47	rgg	
Toluene [108-88-3]^	1.8	U	ug/m³ Air	1.31	1.8	12	0K15003	TO-15	11/16/20 14:47	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.31	1.7	13	0K15003	TO-15	11/16/20 14:47	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.0	U	ug/m³ Air	1.31	2.0	15	0K15003	TO-15	11/16/20 14:47	rgg	QL-02
Trichloroethene [79-01-6]^	2.5	U	ug/m³ Air	1.31	2.5	18	0K15003	TO-15	11/16/20 14:47	rgg	
Trichlorofluoromethane [75-69-4]^	2.5	U	ug/m³ Air	1.31	2.5	18	0K15003	TO-15	11/16/20 14:47	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.31	1.9	8.4	0K15003	TO-15	11/16/20 14:47	rgg	
Xylenes (Total) [1330-20-7]^	3.8	U	ug/m³ Air	1.31	3.8	14	0K15003	TO-15	11/16/20 14:47	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description:	HMFN-VMP01-20201111	**Lab Sample ID:**	AD07766-01	**Received:**	11/13/20 14:30
Matrix:	Air	**Sampled:**	11/11/20 15:08	**Work Order:**	AD07766
Project:	NASA KSC HMFN	**Sampled By:**	Melissa Bennett	**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*29*	*1*	*31.0*	*93 %*	*70-130*	*0K15003*	*TO-15*	*11/16/20 14:47*	*rgg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-VMP02-20201111 | **Lab Sample ID:** AD07766-02 | **Received:** 11/13/20 14:30

Matrix: Air | **Sampled:** 11/11/20 15:03 | **Work Order:** AD07766

Project: NASA KSC HMFN | **Sampled By:** Melissa Bennett | **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.4	U	ug/m³ Air	1.3	2.4	18	0K15003	TO-15	11/16/20 15:33	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.2	U	ug/m³ Air	1.3	3.2	22	0K15003	TO-15	11/16/20 15:33	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.5	U	ug/m³ Air	1.3	2.5	18	0K15003	TO-15	11/16/20 15:33	rgg	
1,1-Dichloroethane [75-34-3]^	1.9	U	ug/m³ Air	1.3	1.9	13	0K15003	TO-15	11/16/20 15:33	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.3	2.0	13	0K15003	TO-15	11/16/20 15:33	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.8	U	ug/m³ Air	1.3	3.8	24	0K15003	TO-15	11/16/20 15:33	rgg	
1,2-Dibromoethane [106-93-4]^	3.6	U	ug/m³ Air	1.3	3.6	25	0K15003	TO-15	11/16/20 15:33	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.1	U	ug/m³ Air	1.3	2.1	20	0K15003	TO-15	11/16/20 15:33	rgg	QL-02
1,2-Dichloroethane [107-06-2]^	1.9	U	ug/m³ Air	1.3	1.9	13	0K15003	TO-15	11/16/20 15:33	rgg	
1,2-Dichloropropane [78-87-5]^	2.4	U	ug/m³ Air	1.3	2.4	15	0K15003	TO-15	11/16/20 15:33	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.2	U	ug/m³ Air	1.3	2.2	20	0K15003	TO-15	11/16/20 15:33	rgg	QL-02
1,4-Dichlorobenzene [106-46-7]^	2.4	U	ug/m³ Air	1.3	2.4	20	0K15003	TO-15	11/16/20 15:33	rgg	QL-02
2-Butanone [78-93-3]^	**1.6**	I	ug/m³ Air	1.3	1.2	9.6	0K15003	TO-15	11/16/20 15:33	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.3	1.8	13	0K15003	TO-15	11/16/20 15:33	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.8	U	ug/m³ Air	1.3	1.8	13	0K15003	TO-15	11/16/20 15:33	rgg	
Acetone [67-64-1]^	**7.7**	V	ug/m³ Air	1.3	1.1	7.7	0K15003	TO-15	11/16/20 15:33	rgg	J-01, O-01
Benzene [71-43-2]^	1.5	U	ug/m³ Air	1.3	1.5	10	0K15003	TO-15	11/16/20 15:33	rgg	
Bromodichloromethane [75-27-4]^	3.0	U	ug/m³ Air	1.3	3.0	22	0K15003	TO-15	11/16/20 15:33	rgg	
Bromoform [75-25-2]^	5.1	U	ug/m³ Air	1.3	5.1	34	0K15003	TO-15	11/16/20 15:33	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.3	1.7	13	0K15003	TO-15	11/16/20 15:33	rgg	
Carbon disulfide [75-15-0]^	1.7	U	ug/m³ Air	1.3	1.7	10	0K15003	TO-15	11/16/20 15:33	rgg	
Carbon tetrachloride [56-23-5]^	2.2	U	ug/m³ Air	1.3	2.2	20	0K15003	TO-15	11/16/20 15:33	rgg	
Chlorobenzene [108-90-7]^	2.0	U	ug/m³ Air	1.3	2.0	15	0K15003	TO-15	11/16/20 15:33	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.3	1.1	8.6	0K15003	TO-15	11/16/20 15:33	rgg	
Chloroform [67-66-3]^	2.4	U	ug/m³ Air	1.3	2.4	16	0K15003	TO-15	11/16/20 15:33	rgg	
Chloromethane [74-87-3]^	**1.5**	I	ug/m³ Air	1.3	1.3	6.7	0K15003	TO-15	11/16/20 15:33	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.3	2.0	13	0K15003	TO-15	11/16/20 15:33	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.2	U	ug/m³ Air	1.3	2.2	15	0K15003	TO-15	11/16/20 15:33	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.3	1.6	11	0K15003	TO-15	11/16/20 15:33	rgg	
Dibromochloromethane [124-48-1]^	3.7	U	ug/m³ Air	1.3	3.7	28	0K15003	TO-15	11/16/20 15:33	rgg	
Dichlorodifluoromethane [75-71-8]^	3.5	U	ug/m³ Air	1.3	3.5	16	0K15003	TO-15	11/16/20 15:33	rgg	
Ethylbenzene [100-41-4]^	1.7	U	ug/m³ Air	1.3	1.7	14	0K15003	TO-15	11/16/20 15:33	rgg	
Freon 113 [76-13-1]^	3.2	U	ug/m³ Air	1.3	3.2	25	0K15003	TO-15	11/16/20 15:33	rgg	
Methylene chloride [75-09-2]^	0.90	U	ug/m³ Air	1.3	0.90	11	0K15003	TO-15	11/16/20 15:33	rgg	
Methyl-tert-butyl ether [1634-04-4]^	1.7	U	ug/m³ Air	1.3	1.7	12	0K15003	TO-15	11/16/20 15:33	rgg	
Styrene [100-42-5]^	2.0	U	ug/m³ Air	1.3	2.0	14	0K15003	TO-15	11/16/20 15:33	rgg	
Tetrachloroethene [127-18-4]^	2.7	U	ug/m³ Air	1.3	2.7	22	0K15003	TO-15	11/16/20 15:33	rgg	
Toluene [108-88-3]^	1.8	U	ug/m³ Air	1.3	1.8	12	0K15003	TO-15	11/16/20 15:33	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.6	U	ug/m³ Air	1.3	1.6	13	0K15003	TO-15	11/16/20 15:33	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.0	U	ug/m³ Air	1.3	2.0	15	0K15003	TO-15	11/16/20 15:33	rgg	QL-02
Trichloroethene [79-01-6]^	2.4	U	ug/m³ Air	1.3	2.4	17	0K15003	TO-15	11/16/20 15:33	rgg	
Trichlorofluoromethane [75-69-4]^	2.5	U	ug/m³ Air	1.3	2.5	18	0K15003	TO-15	11/16/20 15:33	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.3	1.9	8.3	0K15003	TO-15	11/16/20 15:33	rgg	
Xylenes (Total) [1330-20-7]^	3.7	U	ug/m³ Air	1.3	3.7	14	0K15003	TO-15	11/16/20 15:33	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description:	HMFN-VMP02-20201111	**Lab Sample ID:**	AD07766-02	**Received:**	11/13/20 14:30
Matrix:	Air	**Sampled:**	11/11/20 15:03	**Work Order:**	AD07766
Project:	NASA KSC HMFN	**Sampled By:**	Melissa Bennett	**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*29*	*1*	*31.0*	*94 %*	*70-130*	*0K15003*	*TO-15*	*11/16/20 15:33*	*rgg*	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K15003 - NO PREP 2

Blank (0K15003-BLK1) Prepared: 11/15/2020 17:37 Analyzed: 11/15/2020 23:10

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1,2,2-Tetrachloroethane	2.5	U	17	ug/m³ Air							
1,1,2-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1-Dichloroethane	1.5	U	10	ug/m³ Air							
1,1-Dichloroethene	1.5	U	9.9	ug/m³ Air							
1,2,4-Trichlorobenzene	2.9	U	19	ug/m³ Air							
1,2-Dibromoethane	2.8	U	19	ug/m³ Air							
1,2-Dichlorobenzene	1.6	U	15	ug/m³ Air							
1,2-Dichloroethane	1.5	U	10	ug/m³ Air							
1,2-Dichloropropane	1.8	U	12	ug/m³ Air							
1,3-Dichlorobenzene	1.7	U	15	ug/m³ Air							
1,4-Dichlorobenzene	1.9	U	15	ug/m³ Air							
2-Butanone	0.94	U	7.4	ug/m³ Air							
2-Hexanone	1.4	U	10	ug/m³ Air							
4-Methyl-2-pentanone	1.4	U	10	ug/m³ Air							
Acetone	**0.90**	**I**	5.9	ug/m³ Air							J-01, O-01
Benzene	1.2	U	8.0	ug/m³ Air							
Bromodichloromethane	2.3	U	17	ug/m³ Air							
Bromoform	3.9	U	26	ug/m³ Air							
Bromomethane	1.3	U	9.7	ug/m³ Air							
Carbon disulfide	1.3	U	7.8	ug/m³ Air							
Carbon tetrachloride	1.7	U	16	ug/m³ Air							
Chlorobenzene	1.5	U	12	ug/m³ Air							
Chloroethane	0.84	U	6.6	ug/m³ Air							
Chloroform	1.9	U	12	ug/m³ Air							
Chloromethane	0.99	U	5.2	ug/m³ Air							
cis-1,2-Dichloroethene	1.5	U	9.9	ug/m³ Air							
cis-1,3-Dichloropropene	1.7	U	11	ug/m³ Air							
Cyclohexane	1.2	U	8.6	ug/m³ Air							
Dibromochloromethane	2.8	U	21	ug/m³ Air							
Dichlorodifluoromethane	2.7	U	12	ug/m³ Air							
Ethylbenzene	1.3	U	11	ug/m³ Air							
Freon 113	2.5	U	19	ug/m³ Air							
Methylene chloride	0.69	U	8.7	ug/m³ Air							
Methyl-tert-butyl ether	1.3	U	9.0	ug/m³ Air							
Styrene	1.5	U	11	ug/m³ Air							
Tetrachloroethene	2.1	U	17	ug/m³ Air							
Toluene	1.4	U	9.4	ug/m³ Air							
trans-1,2-Dichloroethene	1.3	U	9.9	ug/m³ Air							
trans-1,3-Dichloropropene	1.5	U	11	ug/m³ Air							
Trichloroethene	1.9	U	13	ug/m³ Air							
Trichlorofluoromethane	1.9	U	14	ug/m³ Air							
Vinyl chloride	1.4	U	6.4	ug/m³ Air							
Xylenes (Total)	2.9	U	11	ug/m³ Air							
4-Bromofluorobenzene	*29*			*ppbv*	*31.0*		*95*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K15003 - NO PREP 2 - Continued

LCS (0K15003-BS1) Prepared: 11/15/2020 17:37 Analyzed: 11/15/2020 20:29

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	11		2.5	ppbv	10.0		110	70-130			
1,1,2,2-Tetrachloroethane	13		2.5	ppbv	10.0		128	70-130			
1,1,2-Trichloroethane	11		2.5	ppbv	10.0		113	70-130			
1,1-Dichloroethane	11		2.5	ppbv	10.0		109	70-130			
1,1-Dichloroethene	11		2.5	ppbv	10.0		110	70-130			
1,2,4-Trichlorobenzene	12		2.5	ppbv	10.0		116	70-130			
1,2-Dibromoethane	12		2.5	ppbv	10.0		120	70-130			
1,2-Dichlorobenzene	14		2.5	ppbv	10.0		141	70-130			QL-02
1,2-Dichloroethane	11		2.5	ppbv	10.0		110	70-130			
1,2-Dichloropropane	11		2.5	ppbv	10.0		110	70-130			
1,3-Dichlorobenzene	14		2.5	ppbv	10.0		135	70-130			QL-02
1,4-Dichlorobenzene	14		2.5	ppbv	10.0		141	70-130			QL-02
2-Butanone	10		2.5	ppbv	10.0		104	70-130			
2-Hexanone	11		2.5	ppbv	10.0		115	70-130			
4-Methyl-2-pentanone	11		2.5	ppbv	10.0		112	70-130			
Acetone	10		2.5	ppbv	10.0		104	70-130			
Benzene	11		2.5	ppbv	10.0		108	70-130			
Bromodichloromethane	11		2.5	ppbv	10.0		106	70-130			
Bromoform	11		2.5	ppbv	10.0		113	70-130			
Bromomethane	9.8		2.5	ppbv	10.0		98	70-130			
Carbon disulfide	10		2.5	ppbv	10.0		103	70-130			
Carbon tetrachloride	9.9		2.5	ppbv	10.0		99	70-130			
Chlorobenzene	11		2.5	ppbv	10.0		113	70-130			
Chloroethane	9.9		2.5	ppbv	10.0		99	70-130			
Chloroform	11		2.5	ppbv	10.0		110	70-130			
Chloromethane	10		2.5	ppbv	10.0		104	70-130			
cis-1,2-Dichloroethene	11		2.5	ppbv	10.0		110	70-130			
cis-1,3-Dichloropropene	12		2.5	ppbv	10.0		118	70-130			
Cyclohexane	10		2.5	ppbv	10.0		102	70-130			
Dibromochloromethane	11		2.5	ppbv	10.0		111	70-130			
Dichlorodifluoromethane	11		2.5	ppbv	10.0		109	70-130			
Ethylbenzene	11		2.5	ppbv	10.0		111	70-130			
Freon 113	11		2.5	ppbv	10.0		111	70-130			
m,p-Xylenes	23		5.0	ppbv	20.0		115	70-130			
Methylene chloride	11		2.5	ppbv	10.0		112	70-130			
Methyl-tert-butyl ether	10		2.5	ppbv	10.0		103	70-130			
o-Xylene	11		2.5	ppbv	10.0		111	70-130			
Styrene	13		2.5	ppbv	10.0		127	70-130			
Tetrachloroethene	12		2.5	ppbv	10.0		117	70-130			
Toluene	11		2.5	ppbv	10.0		112	70-130			
trans-1,2-Dichloroethene	10		2.5	ppbv	10.0		103	70-130			
trans-1,3-Dichloropropene	14		2.5	ppbv	10.0		140	70-130			QL-02
Trichloroethene	11		2.5	ppbv	10.0		112	70-130			
Trichlorofluoromethane	11		2.5	ppbv	10.0		107	70-130			
Vinyl chloride	11		2.5	ppbv	10.0		106	70-130			
Xylenes (Total)	34		2.5	ppbv	30.0		114	70-130			
4-Bromofluorobenzene	*31*			*ppbv*	*31.0*		*100*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K15003 - NO PREP 2 - Continued

LCS Dup (0K15003-BSD1) Prepared: 11/15/2020 17:37 Analyzed: 11/15/2020 21:47

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	11		2.5	ppbv	10.0		110	70-130	0.03	25	
1,1,2,2-Tetrachloroethane	13		2.5	ppbv	10.0		127	70-130	0.08	25	
1,1,2-Trichloroethane	11		2.5	ppbv	10.0		114	70-130	0.4	25	
1,1-Dichloroethane	11		2.5	ppbv	10.0		110	70-130	0.6	25	
1,1-Dichloroethene	11		2.5	ppbv	10.0		110	70-130	0.6	25	
1,2,4-Trichlorobenzene	11		2.5	ppbv	10.0		112	70-130	3	25	
1,2-Dibromoethane	12		2.5	ppbv	10.0		119	70-130	0.5	25	
1,2-Dichlorobenzene	14		2.5	ppbv	10.0		141	70-130	0.1	25	QL-02
1,2-Dichloroethane	11		2.5	ppbv	10.0		109	70-130	1	25	
1,2-Dichloropropane	11		2.5	ppbv	10.0		109	70-130	0.6	25	
1,3-Dichlorobenzene	14		2.5	ppbv	10.0		136	70-130	0.09	25	QL-02
1,4-Dichlorobenzene	14		2.5	ppbv	10.0		141	70-130	0.3	25	QL-02
2-Butanone	10		2.5	ppbv	10.0		103	70-130	0.8	25	
2-Hexanone	12		2.5	ppbv	10.0		116	70-130	0.5	25	
4-Methyl-2-pentanone	11		2.5	ppbv	10.0		111	70-130	0.9	25	
Acetone	10		2.5	ppbv	10.0		103	70-130	1	25	
Benzene	11		2.5	ppbv	10.0		108	70-130	0.2	25	
Bromodichloromethane	11		2.5	ppbv	10.0		106	70-130	0.03	25	
Bromoform	11		2.5	ppbv	10.0		113	70-130	0.02	25	
Bromomethane	9.9		2.5	ppbv	10.0		99	70-130	0.8	25	
Carbon disulfide	10		2.5	ppbv	10.0		102	70-130	0.9	25	
Carbon tetrachloride	9.9		2.5	ppbv	10.0		99	70-130	0.5	25	
Chlorobenzene	11		2.5	ppbv	10.0		113	70-130	0.4	25	
Chloroethane	9.7		2.5	ppbv	10.0		97	70-130	2	25	
Chloroform	11		2.5	ppbv	10.0		110	70-130	0.2	25	
Chloromethane	11		2.5	ppbv	10.0		107	70-130	3	25	
cis-1,2-Dichloroethene	11		2.5	ppbv	10.0		110	70-130	0.4	25	
cis-1,3-Dichloropropene	12		2.5	ppbv	10.0		118	70-130	0.5	25	
Cyclohexane	10		2.5	ppbv	10.0		103	70-130	1	25	
Dibromochloromethane	11		2.5	ppbv	10.0		111	70-130	0.4	25	
Dichlorodifluoromethane	11		2.5	ppbv	10.0		109	70-130	0.5	25	
Ethylbenzene	11		2.5	ppbv	10.0		111	70-130	0.1	25	
Freon 113	11		2.5	ppbv	10.0		110	70-130	1	25	
m,p-Xylenes	23		5.0	ppbv	20.0		114	70-130	0.09	25	
Methylene chloride	11		2.5	ppbv	10.0		111	70-130	0.7	25	
Methyl-tert-butyl ether	10		2.5	ppbv	10.0		103	70-130	0.6	25	
o-Xylene	11		2.5	ppbv	10.0		112	70-130	0.6	25	
Styrene	13		2.5	ppbv	10.0		126	70-130	0.4	25	
Tetrachloroethene	12		2.5	ppbv	10.0		117	70-130	0.07	25	
Toluene	11		2.5	ppbv	10.0		112	70-130	0.03	25	
trans-1,2-Dichloroethene	10		2.5	ppbv	10.0		104	70-130	0.9	25	
trans-1,3-Dichloropropene	14		2.5	ppbv	10.0		140	70-130	0.02	25	QL-02
Trichloroethene	11		2.5	ppbv	10.0		112	70-130	0.6	25	
Trichlorofluoromethane	11		2.5	ppbv	10.0		106	70-130	0.4	25	
Vinyl chloride	11		2.5	ppbv	10.0		109	70-130	3	25	
Xylenes (Total)	34		2.5	ppbv	30.0		114	70-130	0.1	25	
4-Bromofluorobenzene	*31*			*ppbv*	*31.0*		*100*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
J-01	Result may be biased high due to positive results in the associated method blank at a concentration above the MDL and/or greater than one-half the MRL.
O-01	This compound is a common laboratory contaminant.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.

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B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

Tetra Tech, Inc.

AD077660

CHAIN OF CUSTODY | NUMBER No. 2150 | **PAGE** 1 **OF** 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	KSC- HMFN	Chris Hook	412-921-8790	ENCO
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Melissa Bennett		Melissa Bennett	321-914-9394	
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2020)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: TO-15 VOC	Summa 1	COMMENTS
11/11	1508	HMFN-VMP01-20201111	VMP1	—	—	Air	G	1			X		
11/11	1503	HMFN-VMP02-20201111	VMP2	—	—	Air	G	1			X		

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY Melissa Bennett	11-13-20	~~1300~~ 1430	1. RECEIVED BY	11/13/20	1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS ~~Logged~~ 1.6°C Box 24.1°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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102-A Woodwinds Industrial Ct, Cary, NC 27511

COMPENDIUM METHOD TO-14A/COMPENDIUM METHOD TO-15 CANISTER SAMPLING FIELD TEST DATA SHEET

General Sampling Information should be recorded for each SUMMA canister used to collect samples.

General Information

SITE LOCATION:	VMP01 - Field
SITE ADDRESS:	KSC-HMFN
SAMPLER ID:	HMFN-VMP01-20201111
SAMPLING DATE:	11-11-2020
OPERATOR:	TT
SHIPPING DATE:	10/21/20
CANISTER SERIAL NO.:	03-068
CANISTER LEAK CHECK DATE:	Laboratory information on file.
REGULATOR SERIAL NO.:	0688

Sampling Information

	Temperature	Canister Pressure	Local Time	Regulator Flow Rate
START	79°F	-28	7:03	8-HR
STOP	82°F	0	1503	8-HR

Signature/Title: [signature] Env Engineer

Environmental Conservation Laboratories, Inc.
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4810 Executive Park Court, Suite 211,Jacksonville, FL 32216
102-A Woodwinds Industrial Ct, Cary, NC 27511

www.encolabs.com

COMPENDIUM METHOD TO-14A/COMPENDIUM METHOD TO-15 CANISTER SAMPLING FIELD TEST DATA SHEET

General Sampling Information should be recorded for each SUMMA canister used to collect samples.

General Information

SITE LOCATION:	VMP 02 - R.20+
SITE ADDRESS:	KSC-HMFN
SAMPLER ID:	HMFN- VMP02- 20201111
SAMPLING DATE:	11-11-2020
OPERATOR:	T+
SHIPPING DATE:	10/21/20
CANISTER SERIAL NO.:	18-3F+
CANISTER LEAK CHECK DATE:	Laboratory information on file.
REGULATOR SERIAL NO.:	6499

Sampling Information

	Temperature	Canister Pressure	Local Time	Regulator Flow Rate
START	79°F	-29	7:08	8-HR
STOP	82°F	0 mmHg	1508	8-HR

Signature/Title: MT Env. Engineer

11/16/2020

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN / 112G08982
Purchase Order # : 1170718

Lab Reference # : AD07766 Lab Receipt Date: 13-Nov-20 14:30
Anticipated ***(Estimated)*** Completion Date: 20-Nov-20 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMFN-VMP01-20201111(Lab ID: AD07766-01), Matrix: Air, Sampled: 11-Nov-20 15:08 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on container says 1503, JAJ 11/16/20.			
TO15 (SUMMA)	5	11-Dec-20 23:59	Received
Sample ID: HMFN-VMP02-20201111(Lab ID: AD07766-02), Matrix: Air, Sampled: 11-Nov-20 15:03 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on container says 1508, JAJ 11/16/20.			
TO15 (SUMMA)	5	11-Dec-20 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AD07766-TE015

CLASS: 06_VOA_AIR

METHOD: TO-15

ANALYSES DATA PACKAGE COVER PAGE

TO-15

Laboratory: ENCO Orlando

SDG: AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Client Sample Id:	Lab Sample Id:
HMFN-VMP01-20201111	AD07766-01
HMFN-VMP02-20201111	AD07766-02

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP01-20201111

Laboratory: ENCO Orlando SDG: AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Air Laboratory ID: AD07766-01 File ID: 207KJ020.D

Sampled: 11/11/20 15:08 Prepared: 11/16/20 12:00 Analyzed: 11/16/20 14:47

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 0K15003 Sequence: AA63569 Calibration: 2011052 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.31	3.6	UD	3.6	16
74-87-3	Chloromethane	1.31	1.4	JD	1.3	6.8
75-01-4	Vinyl chloride	1.31	1.9	UD	1.9	8.4
74-83-9	Bromomethane	1.31	1.7	UD	1.7	13
75-00-3	Chloroethane	1.31	1.1	UD	1.1	8.6
75-69-4	Trichlorofluoromethane	1.31	2.5	UD	2.5	18
75-34-3	1,1-Dichloroethane	1.31	1.9	UD	1.9	13
67-64-1	Acetone	1.31	6.5	JBD	1.1	7.8
75-15-0	Carbon disulfide	1.31	1.7	UD	1.7	10
75-09-2	Methylene chloride	1.31	0.91	UD	0.91	11
76-13-1	Freon 113	1.31	3.2	UD	3.2	25
156-60-5	trans-1,2-Dichloroethene	1.31	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.31	1.7	UD	1.7	12
75-35-4	1,1-Dichloroethene	1.31	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.31	2.0	UD	2.0	13
78-93-3	2-Butanone	1.31	1.2	UD	1.2	9.7
67-66-3	Chloroform	1.31	2.4	UD	2.4	16
107-06-2	1,2-Dichloroethane	1.31	2.0	UD	2.0	13
71-55-6	1,1,1-Trichloroethane	1.31	2.4	UD	2.4	18
110-82-7	Cyclohexane	1.31	1.6	UD	1.6	11
56-23-5	Carbon tetrachloride	1.31	2.2	UD	2.2	21
71-43-2	Benzene	1.31	1.5	UD	1.5	10
78-87-5	1,2-Dichloropropane	1.31	2.4	UD	2.4	15
79-01-6	Trichloroethene	1.31	2.5	UD	2.5	18
75-27-4	Bromodichloromethane	1.31	3.0	UD	3.0	22
10061-01-5	cis-1,3-Dichloropropene	1.31	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.31	2.0	UD	2.0	15
79-00-5	1,1,2-Trichloroethane	1.31	2.5	UD	2.5	18
108-10-1	4-Methyl-2-pentanone	1.31	1.8	UD	1.8	13
108-88-3	Toluene	1.31	1.8	UD	1.8	12
591-78-6	2-Hexanone	1.31	1.8	UD	1.8	13
106-93-4	1,2-Dibromoethane	1.31	3.6	UD	3.6	25
127-18-4	Tetrachloroethene	1.31	2.8	UD	2.8	22
124-48-1	Dibromochloromethane	1.31	3.7	UD	3.7	28
108-90-7	Chlorobenzene	1.31	2.0	UD	2.0	15
100-41-4	Ethylbenzene	1.31	1.7	UD	1.7	14
1330-20-7	Xylenes (Total)	1.31	3.8	UD	3.8	14
100-42-5	Styrene	1.31	2.0	UD	2.0	14
75-25-2	Bromoform	1.31	5.1	UD	5.1	34
79-34-5	1,1,2,2-Tetrachloroethane	1.31	3.2	UD	3.2	22
541-73-1	1,3-Dichlorobenzene	1.31	2.2	UD	2.2	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP01-20201111

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Air
Laboratory ID: AD07766-01
File ID: 207KJ020.D
Sampled: 11/11/20 15:08
Prepared: 11/16/20 12:00
Analyzed: 11/16/20 14:47
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 0K15003
Sequence: AA63569
Calibration: 2011052
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.31	2.4	UD	2.4	20
95-50-1	1,2-Dichlorobenzene	1.31	2.1	UD	2.1	20
120-82-1	1,2,4-Trichlorobenzene	1.31	3.8	UD	3.8	24

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	93	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	291767	10.99	317777	11.04	
1,4-Difluorobenzene	963270	12.49	1062761	12.53	
Chlorobenzene-d5	733722	15.9	855342	15.92	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP02-20201111

Laboratory: ENCO Orlando SDG: AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Air Laboratory ID: AD07766-02 File ID: 207KJ021.D

Sampled: 11/11/20 15:03 Prepared: 11/16/20 12:00 Analyzed: 11/16/20 15:33

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 0K15003 Sequence: AA63569 Calibration: 2011052 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.3	3.5	UD	3.5	16
74-87-3	Chloromethane	1.3	1.5	JD	1.3	6.7
75-01-4	Vinyl chloride	1.3	1.9	UD	1.9	8.3
74-83-9	Bromomethane	1.3	1.7	UD	1.7	13
75-00-3	Chloroethane	1.3	1.1	UD	1.1	8.6
75-69-4	Trichlorofluoromethane	1.3	2.5	UD	2.5	18
75-34-3	1,1-Dichloroethane	1.3	1.9	UD	1.9	13
67-64-1	Acetone	1.3	7.7	BD	1.1	7.7
75-15-0	Carbon disulfide	1.3	1.7	UD	1.7	10
75-09-2	Methylene chloride	1.3	0.90	UD	0.90	11
76-13-1	Freon 113	1.3	3.2	UD	3.2	25
156-60-5	trans-1,2-Dichloroethene	1.3	1.6	UD	1.6	13
1634-04-4	Methyl-tert-butyl ether	1.3	1.7	UD	1.7	12
75-35-4	1,1-Dichloroethene	1.3	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.3	2.0	UD	2.0	13
78-93-3	2-Butanone	1.3	1.6	JD	1.2	9.6
67-66-3	Chloroform	1.3	2.4	UD	2.4	16
107-06-2	1,2-Dichloroethane	1.3	1.9	UD	1.9	13
71-55-6	1,1,1-Trichloroethane	1.3	2.4	UD	2.4	18
110-82-7	Cyclohexane	1.3	1.6	UD	1.6	11
56-23-5	Carbon tetrachloride	1.3	2.2	UD	2.2	20
71-43-2	Benzene	1.3	1.5	UD	1.5	10
78-87-5	1,2-Dichloropropane	1.3	2.4	UD	2.4	15
79-01-6	Trichloroethene	1.3	2.4	UD	2.4	17
75-27-4	Bromodichloromethane	1.3	3.0	UD	3.0	22
10061-01-5	cis-1,3-Dichloropropene	1.3	2.2	UD	2.2	15
10061-02-6	trans-1,3-Dichloropropene	1.3	2.0	UD	2.0	15
79-00-5	1,1,2-Trichloroethane	1.3	2.5	UD	2.5	18
108-10-1	4-Methyl-2-pentanone	1.3	1.8	UD	1.8	13
108-88-3	Toluene	1.3	1.8	UD	1.8	12
591-78-6	2-Hexanone	1.3	1.8	UD	1.8	13
106-93-4	1,2-Dibromoethane	1.3	3.6	UD	3.6	25
127-18-4	Tetrachloroethene	1.3	2.7	UD	2.7	22
124-48-1	Dibromochloromethane	1.3	3.7	UD	3.7	28
108-90-7	Chlorobenzene	1.3	2.0	UD	2.0	15
100-41-4	Ethylbenzene	1.3	1.7	UD	1.7	14
1330-20-7	Xylenes (Total)	1.3	3.7	UD	3.7	14
100-42-5	Styrene	1.3	2.0	UD	2.0	14
75-25-2	Bromoform	1.3	5.1	UD	5.1	34
79-34-5	1,1,2,2-Tetrachloroethane	1.3	3.2	UD	3.2	22
541-73-1	1,3-Dichlorobenzene	1.3	2.2	UD	2.2	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-VMP02-20201111

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Air
Laboratory ID: AD07766-02
File ID: 207KJ021.D
Sampled: 11/11/20 15:03
Prepared: 11/16/20 12:00
Analyzed: 11/16/20 15:33
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 0K15003
Sequence: AA63569
Calibration: 2011052
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.3	2.4	UD	2.4	20
95-50-1	1,2-Dichlorobenzene	1.3	2.1	UD	2.1	20
120-82-1	1,2,4-Trichlorobenzene	1.3	3.8	UD	3.8	24

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	94	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	281345	10.99	317777	11.04	
1,4-Difluorobenzene	933553	12.49	1062761	12.53	
Chlorobenzene-d5	712888	15.9	855342	15.92	

* Values outside of QC limits

HOLDING TIME SUMMARY

TO-15

Laboratory: ENCO Orlando

SDG: AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMFN-VMP01-20201111	11/11/20 15:08	11/13/20 14:30	11/16/20 12:00	4.87	NA	11/16/20 14:47	5.00	30.00	
HMFN-VMP02-20201111	11/11/20 15:03	11/13/20 14:30	11/16/20 12:00	4.87	NA	11/16/20 15:33	5.00	30.00	

PREPARATION BATCH SUMMARY

TO-15

Laboratory: ENCO Orlando SDG: AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Batch: 0K15003 Batch Matrix: Air Preparation: NO PREP 2

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	0K15003-BLK1	207KJ009.D	11/15/20 17:37	
LCS	0K15003-BS1	207KJ005.D	11/15/20 17:37	
LCS Dup	0K15003-BSD1	207KJ007.D	11/15/20 17:37	
HMFN-VMP01-20201111	AD07766-01	207KJ020.D	11/16/20 12:00	
HMFN-VMP02-20201111	AD07766-02	207KJ021.D	11/16/20 12:00	

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Air	Laboratory ID:	0K15003-BLK1	File ID:	207KJ009.D
Prepared:	11/15/20 17:37	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	11/15/20 23:10	Instrument:	OVGCMS7		
Batch:	0K15003	Sequence:	AA63569	Calibration:	2011052

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
75-71-8	Dichlorodifluoromethane	2.7	U
74-87-3	Chloromethane	0.99	U
75-01-4	Vinyl chloride	1.4	U
74-83-9	Bromomethane	1.3	U
75-00-3	Chloroethane	0.84	U
75-69-4	Trichlorofluoromethane	1.9	U
75-34-3	1,1-Dichloroethane	1.5	U
67-64-1	Acetone	0.90	J
75-15-0	Carbon disulfide	1.3	U
75-09-2	Methylene chloride	0.69	U
76-13-1	Freon 113	2.5	U
156-60-5	trans-1,2-Dichloroethene	1.3	U
1634-04-4	Methyl-tert-butyl ether	1.3	U
75-35-4	1,1-Dichloroethene	1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	U
78-93-3	2-Butanone	0.94	U
67-66-3	Chloroform	1.9	U
107-06-2	1,2-Dichloroethane	1.5	U
71-55-6	1,1,1-Trichloroethane	1.9	U
110-82-7	Cyclohexane	1.2	U
56-23-5	Carbon tetrachloride	1.7	U
71-43-2	Benzene	1.2	U
78-87-5	1,2-Dichloropropane	1.8	U
79-01-6	Trichloroethene	1.9	U
75-27-4	Bromodichloromethane	2.3	U
10061-01-5	cis-1,3-Dichloropropene	1.7	U
10061-02-6	trans-1,3-Dichloropropene	1.5	U
79-00-5	1,1,2-Trichloroethane	1.9	U
108-10-1	4-Methyl-2-pentanone	1.4	U
108-88-3	Toluene	1.4	U

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Air	Laboratory ID:	0K15003-BLK1	File ID:	207KJ009.D
Prepared:	11/15/20 17:37	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	11/15/20 23:10	Instrument:	OVGCMS7		
Batch:	0K15003	Sequence:	AA63569	Calibration:	2011052

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
591-78-6	2-Hexanone	1.4	U
106-93-4	1,2-Dibromoethane	2.8	U
127-18-4	Tetrachloroethene	2.1	U
124-48-1	Dibromochloromethane	2.8	U
108-90-7	Chlorobenzene	1.5	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (Total)	2.9	U
100-42-5	Styrene	1.5	U
75-25-2	Bromoform	3.9	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	1.7	U
106-46-7	1,4-Dichlorobenzene	1.9	U
95-50-1	1,2-Dichlorobenzene	1.6	U
120-82-1	1,2,4-Trichlorobenzene	2.9	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	95	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	306095	11	317777	11.04	
1,4-Difluorobenzene	1002382	12.5	1062761	12.53	
Chlorobenzene-d5	735439	15.91	855342	15.92	

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0K15003	Laboratory ID:	0K15003-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	10.0	11	109	70 - 130
Chloromethane	10.0	10	104	70 - 130
Vinyl chloride	10.0	11	106	70 - 130
Bromomethane	10.0	9.8	98	70 - 130
Chloroethane	10.0	9.9	99	70 - 130
Trichlorofluoromethane	10.0	11	107	70 - 130
1,1-Dichloroethane	10.0	11	109	70 - 130
Acetone	10.0	10	104	70 - 130
Carbon disulfide	10.0	10	103	70 - 130
Methylene chloride	10.0	11	112	70 - 130
Freon 113	10.0	11	111	70 - 130
trans-1,2-Dichloroethene	10.0	10	103	70 - 130
Methyl-tert-butyl ether	10.0	10	103	70 - 130
1,1-Dichloroethene	10.0	11	110	70 - 130
cis-1,2-Dichloroethene	10.0	11	110	70 - 130
2-Butanone	10.0	10	104	70 - 130
Chloroform	10.0	11	110	70 - 130
1,2-Dichloroethane	10.0	11	110	70 - 130
1,1,1-Trichloroethane	10.0	11	110	70 - 130
Cyclohexane	10.0	10	102	70 - 130
Carbon tetrachloride	10.0	9.9	99	70 - 130
Benzene	10.0	11	108	70 - 130
1,2-Dichloropropane	10.0	11	110	70 - 130
Trichloroethene	10.0	11	112	70 - 130
Bromodichloromethane	10.0	11	106	70 - 130
cis-1,3-Dichloropropene	10.0	12	118	70 - 130
trans-1,3-Dichloropropene	10.0	14	140 *	70 - 130
1,1,2-Trichloroethane	10.0	11	113	70 - 130
4-Methyl-2-pentanone	10.0	11	112	70 - 130
Toluene	10.0	11	112	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0K15003	Laboratory ID:	0K15003-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCS CONCENTRATION (ppbv)	LCS % REC. #	QC LIMITS REC.
2-Hexanone	10.0	11	115	70 - 130
1,2-Dibromoethane	10.0	12	120	70 - 130
Tetrachloroethene	10.0	12	117	70 - 130
Dibromochloromethane	10.0	11	111	70 - 130
Chlorobenzene	10.0	11	113	70 - 130
Ethylbenzene	10.0	11	111	70 - 130
m,p-Xylenes	20.0	23	115	70 - 130
o-Xylene	10.0	11	111	70 - 130
Xylenes (Total)	30.0	34	114	70 - 130
Styrene	10.0	13	127	70 - 130
Bromoform	10.0	11	113	70 - 130
1,1,2,2-Tetrachloroethane	10.0	13	128	70 - 130
1,3-Dichlorobenzene	10.0	14	135 *	70 - 130
1,4-Dichlorobenzene	10.0	14	141 *	70 - 130
1,2-Dichlorobenzene	10.0	14	141 *	70 - 130
1,2,4-Trichlorobenzene	10.0	12	116	70 - 130

COMPOUND	SPIKE ADDED (ppbv)	LCSD CONCENTRATION (ppbv)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	10.0	11	109	0.5	25	70 - 130
Chloromethane	10.0	11	107	3	25	70 - 130
Vinyl chloride	10.0	11	109	3	25	70 - 130
Bromomethane	10.0	9.9	99	0.8	25	70 - 130
Chloroethane	10.0	9.7	97	2	25	70 - 130
Trichlorofluoromethane	10.0	11	106	0.4	25	70 - 130
1,1-Dichloroethane	10.0	11	110	0.6	25	70 - 130
Acetone	10.0	10	103	1	25	70 - 130
Carbon disulfide	10.0	10	102	0.9	25	70 - 130
Methylene chloride	10.0	11	111	0.7	25	70 - 130
Freon 113	10.0	11	110	1	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0K15003	Laboratory ID:	0K15003-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCSD CONCENTRATION (ppbv)	LCSD % REC. #		% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,2-Dichloroethene	10.0	10	104		0.9	25	70 - 130
Methyl-tert-butyl ether	10.0	10	103		0.6	25	70 - 130
1,1-Dichloroethene	10.0	11	110		0.6	25	70 - 130
cis-1,2-Dichloroethene	10.0	11	110		0.4	25	70 - 130
2-Butanone	10.0	10	103		0.8	25	70 - 130
Chloroform	10.0	11	110		0.2	25	70 - 130
1,2-Dichloroethane	10.0	11	109		1	25	70 - 130
1,1,1-Trichloroethane	10.0	11	110		0.03	25	70 - 130
Cyclohexane	10.0	10	103		1	25	70 - 130
Carbon tetrachloride	10.0	9.9	99		0.5	25	70 - 130
Benzene	10.0	11	108		0.2	25	70 - 130
1,2-Dichloropropane	10.0	11	109		0.6	25	70 - 130
Trichloroethene	10.0	11	112		0.6	25	70 - 130
Bromodichloromethane	10.0	11	106		0.03	25	70 - 130
cis-1,3-Dichloropropene	10.0	12	118		0.5	25	70 - 130
trans-1,3-Dichloropropene	10.0	14	140	*	0.02	25	70 - 130
1,1,2-Trichloroethane	10.0	11	114		0.4	25	70 - 130
4-Methyl-2-pentanone	10.0	11	111		0.9	25	70 - 130
Toluene	10.0	11	112		0.03	25	70 - 130
2-Hexanone	10.0	12	116		0.5	25	70 - 130
1,2-Dibromoethane	10.0	12	119		0.5	25	70 - 130
Tetrachloroethene	10.0	12	117		0.07	25	70 - 130
Dibromochloromethane	10.0	11	111		0.4	25	70 - 130
Chlorobenzene	10.0	11	113		0.4	25	70 - 130
Ethylbenzene	10.0	11	111		0.1	25	70 - 130
m,p-Xylenes	20.0	23	114		0.09	25	70 - 130
o-Xylene	10.0	11	112		0.6	25	70 - 130
Xylenes (Total)	30.0	34	114		0.1	25	70 - 130
Styrene	10.0	13	126		0.4	25	70 - 130
Bromoform	10.0	11	113		0.02	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Air		
Batch:	0K15003	Laboratory ID:	0K15003-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ppbv)	LCSD CONCENTRATION (ppbv)	LCSD % REC. #		% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1,2,2-Tetrachloroethane	10.0	13	127		0.08	25	70 - 130
1,3-Dichlorobenzene	10.0	14	136	*	0.09	25	70 - 130
1,4-Dichlorobenzene	10.0	14	141	*	0.3	25	70 - 130
1,2-Dichlorobenzene	10.0	14	141	*	0.1	25	70 - 130
1,2,4-Trichlorobenzene	10.0	11	112		3	25	70 - 130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA63477
Instrument: OVGCMS7
Matrix: Air
Calibration: 2011052

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA63477-SCV1)			Lab File ID: 207KE015.D		Analyzed: 11/10/20 21:16			
4-Bromofluorobenzene	31.0	101	0 - 200	17.35	17.35	0.0000	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA63569
Instrument: OVGCMS7
Matrix: Air
Calibration: 2011052

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA63569-CCV1)			Lab File ID: 207KJ003.D		Analyzed: 11/15/20 19:12			
4-Bromofluorobenzene	31.0	100	0 - 200	17.34	17.35	-0.0100	+/-1.0	
LCS (0K15003-BS1)			Lab File ID: 207KJ005.D		Analyzed: 11/15/20 20:29			
4-Bromofluorobenzene	31.0	100	70 - 130	17.34	17.35	-0.0100	+/-1.0	
LCS Dup (0K15003-BSD1)			Lab File ID: 207KJ007.D		Analyzed: 11/15/20 21:47			
4-Bromofluorobenzene	31.0	100	70 - 130	17.34	17.35	-0.0100	+/-1.0	
Blank (0K15003-BLK1)			Lab File ID: 207KJ009.D		Analyzed: 11/15/20 23:10			
4-Bromofluorobenzene	31.0	95	70 - 130	17.34	17.35	-0.0100	+/-1.0	
HMFN-VMP01-20201111 (AD07766-01)			Lab File ID: 207KJ020.D		Analyzed: 11/16/20 14:47			
4-Bromofluorobenzene	31.0	93	70 - 130	17.33	17.35	-0.0200	+/-1.0	
HMFN-VMP02-20201111 (AD07766-02)			Lab File ID: 207KJ021.D		Analyzed: 11/16/20 15:33			
4-Bromofluorobenzene	31.0	94	70 - 130	17.33	17.35	-0.0200	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA63477
Instrument: OVGCMS7
Matrix: Air
Calibration: 2011052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA63477-CAL1)			Lab File ID: 207KE004.D			Analyzed: 11/10/20 13:55			
Bromochloromethane	321834	11.02	317777	11.04	101	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1066269	12.52	1062761	12.53	100	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	822344	15.92	855342	15.92	96	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL2)			Lab File ID: 207KE005.D			Analyzed: 11/10/20 14:34			
Bromochloromethane	312759	11.02	317777	11.04	98	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1042342	12.53	1062761	12.53	98	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	799117	15.92	855342	15.92	93	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL3)			Lab File ID: 207KE006.D			Analyzed: 11/10/20 15:12			
Bromochloromethane	314786	11.03	317777	11.04	99	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1047011	12.53	1062761	12.53	99	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	806178	15.92	855342	15.92	94	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL4)			Lab File ID: 207KE007.D			Analyzed: 11/10/20 15:51			
Bromochloromethane	318236	11.03	317777	11.04	100	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1050404	12.52	1062761	12.53	99	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	818913	15.92	855342	15.92	96	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL5)			Lab File ID: 207KE008.D			Analyzed: 11/10/20 16:30			
Bromochloromethane	310265	11.03	317777	11.04	98	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1022161	12.53	1062761	12.53	96	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	806691	15.92	855342	15.92	94	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL6)			Lab File ID: 207KE009.D			Analyzed: 11/10/20 17:08			
Bromochloromethane	309173	11.03	317777	11.04	97	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1034731	12.53	1062761	12.53	97	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	818627	15.92	855342	15.92	96	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL7)			Lab File ID: 207KE010.D			Analyzed: 11/10/20 17:47			
Bromochloromethane	317777	11.04	317777	11.04	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1062761	12.53	1062761	12.53	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	855342	15.92	855342	15.92	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63477-CAL8)			Lab File ID: 207KE011.D			Analyzed: 11/10/20 18:31			
Bromochloromethane	337156	11.04	317777	11.04	106	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1121573	12.54	1062761	12.53	106	60 - 140	0.0100	+/-0.50	
Chlorobenzene-d5	897767	15.93	855342	15.92	105	50 - 200	0.0100	+/-0.50	
Cal Standard (AA63477-CAL9)			Lab File ID: 207KE012.D			Analyzed: 11/10/20 19:16			
Bromochloromethane	340219	11.04	317777	11.04	107	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1100800	12.53	1062761	12.53	104	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	857673	15.93	855342	15.92	100	50 - 200	0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA63477
Instrument: OVGCMS7
Matrix: Air
Calibration: 2011052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA63477-SCV1)			Lab File ID: 207KE015.D			Analyzed: 11/10/20 21:16			
Bromochloromethane	317977	11.03	317777	11.04	100	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1060731	12.53	1062761	12.53	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	846937	15.92	855342	15.92	99	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA63569
Instrument: OVGCMS7
Matrix: Air
Calibration: 2011052

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA63569-CCV1)			Lab File ID: 207KJ003.D			Analyzed: 11/15/20 19:12			
Bromochloromethane	290783	11.01	317777	11.04	92	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	958257	12.51	1062761	12.53	90	60 - 140	-0.0200	+/-0.50	
Chlorobenzene-d5	768114	15.91	855342	15.92	90	50 - 200	-0.0100	+/-0.50	
LCS (0K15003-BS1)			Lab File ID: 207KJ005.D			Analyzed: 11/15/20 20:29			
Bromochloromethane	309289	11.01	317777	11.04	97	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1019712	12.51	1062761	12.53	96	60 - 140	-0.0200	+/-0.50	
Chlorobenzene-d5	818168	15.91	855342	15.92	96	50 - 200	-0.0100	+/-0.50	
LCS Dup (0K15003-BSD1)			Lab File ID: 207KJ007.D			Analyzed: 11/15/20 21:47			
Bromochloromethane	312544	11.01	317777	11.04	98	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1018072	12.51	1062761	12.53	96	60 - 140	-0.0200	+/-0.50	
Chlorobenzene-d5	819316	15.91	855342	15.92	96	50 - 200	-0.0100	+/-0.50	
Blank (0K15003-BLK1)			Lab File ID: 207KJ009.D			Analyzed: 11/15/20 23:10			
Bromochloromethane	306095	11	317777	11.04	96	60 - 140	-0.0400	+/-0.50	
1,4-Difluorobenzene	1002382	12.5	1062761	12.53	94	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	735439	15.91	855342	15.92	86	50 - 200	-0.0100	+/-0.50	
HMFN-VMP01-20201111 (AD07766-01)			Lab File ID: 207KJ020.D			Analyzed: 11/16/20 14:47			
Bromochloromethane	291767	10.99	317777	11.04	92	60 - 140	-0.0500	+/-0.50	
1,4-Difluorobenzene	963270	12.49	1062761	12.53	91	60 - 140	-0.0400	+/-0.50	
Chlorobenzene-d5	733722	15.9	855342	15.92	86	50 - 200	-0.0200	+/-0.50	
HMFN-VMP02-20201111 (AD07766-02)			Lab File ID: 207KJ021.D			Analyzed: 11/16/20 15:33			
Bromochloromethane	281345	10.99	317777	11.04	89	60 - 140	-0.0500	+/-0.50	
1,4-Difluorobenzene	933553	12.49	1062761	12.53	88	60 - 140	-0.0400	+/-0.50	
Chlorobenzene-d5	712888	15.9	855342	15.92	83	50 - 200	-0.0200	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA63477		
Calibration:	2011052	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA63477-TUN1	207KE002.D	11/10/20 12:33
Cal Standard	AA63477-CAL1	207KE004.D	11/10/20 13:55
Cal Standard	AA63477-CAL2	207KE005.D	11/10/20 14:34
Cal Standard	AA63477-CAL3	207KE006.D	11/10/20 15:12
Cal Standard	AA63477-CAL4	207KE007.D	11/10/20 15:51
Cal Standard	AA63477-CAL5	207KE008.D	11/10/20 16:30
Cal Standard	AA63477-CAL6	207KE009.D	11/10/20 17:08
Cal Standard	AA63477-CAL7	207KE010.D	11/10/20 17:47
Cal Standard	AA63477-CAL8	207KE011.D	11/10/20 18:31
Cal Standard	AA63477-CAL9	207KE012.D	11/10/20 19:16
Secondary Cal Check	AA63477-SCV1	207KE015.D	11/10/20 21:16

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA63569		
Calibration:	2011052	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA63569-TUN1	207KJ002.D	11/15/20 18:27
Calibration Check	AA63569-CCV1	207KJ003.D	11/15/20 19:12
LCS	0K15003-BS1	207KJ005.D	11/15/20 20:29
LCS Dup	0K15003-BSD1	207KJ007.D	11/15/20 21:47
Blank	0K15003-BLK1	207KJ009.D	11/15/20 23:10
HMFN-VMP01-20201111	AD07766-01	207KJ020.D	11/16/20 14:47
HMFN-VMP02-20201111	AD07766-02	207KJ021.D	11/16/20 15:33

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	207KE002.D	Injection Date:	11/10/20
Instrument ID:	OVGCMS7	Injection Time:	12:33
Sequence:	AA63477	Lab Sample ID:	AA63477-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	29.1	PASS
75	30 - 66% of 95	50.7	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.57	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	68.9	PASS
175	4 - 9% of 174	5.73	PASS
176	95 - 101% of 174	98.7	PASS
177	5 - 9% of 176	6.77	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	207KJ002.D	Injection Date:	11/15/20
Instrument ID:	OVGCMS7	Injection Time:	18:27
Sequence:	AA63569	Lab Sample ID:	AA63569-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	29.6	PASS
75	30 - 66% of 95	52.7	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.69	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	67.5	PASS
175	4 - 9% of 174	5.78	PASS
176	95 - 101% of 174	99.4	PASS
177	5 - 9% of 176	6.74	PASS

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS7	Calibration:	2011052
Lab File ID:	207KJ003.D	Calibration Date:	11/10/20 12:33
Sequence:	AA63569	Injection Date:	11/15/20
Lab Sample ID:	AA63569-CCV1	Injection Time:	19:12

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	10.0	11	6.973592	7.338027		5.2	30
Chloromethane	A	10.0	10	3.024364	3.113219		2.9	30
Vinyl chloride	A	10.0	11	2.732432	2.904032		6.3	30
Bromomethane	A	10.0	9.4	2.698054	2.523034		-6.5	30
Chloroethane	A	10.0	9.5	1.41443	1.346393		-4.8	30
Trichlorofluoromethane	A	10.0	10	6.030676	6.07176		0.70	30
1,1-Dichloroethane	A	10.0	10	4.56271	4.724205		3.5	30
Acetone	A	10.0	10	5.845352	6.086494		4.1	30
Carbon disulfide	A	10.0	10	6.684307	6.918404		3.5	30
Methylene chloride	A	10.0	11	1.996064	2.098113		5.1	30
Freon 113	A	10.0	11	3.110278	3.271491		5.2	30
trans-1,2-Dichloroethene	A	10.0	11	3.845788	4.054265		5.4	30
Methyl-tert-butyl ether	A	10.0	11	6.831089	7.173167		5.0	30
1,1-Dichloroethene	A	10.0	10	4.563446	4.757435		4.3	30
cis-1,2-Dichloroethene	A	10.0	10	2.232142	2.321191		4.0	30
2-Butanone	A	10.0	11	7.729143	8.135566		5.3	30
Chloroform	A	10.0	10	5.056263	5.223976		3.3	30
1,2-Dichloroethane	A	10.0	10	3.725527	3.905685		4.8	30
1,1,1-Trichloroethane	A	10.0	11	4.702093	5.009458		6.5	30
Cyclohexane	A	10.0	11	4.230597	4.449997		5.2	30
Carbon tetrachloride	A	10.0	11	4.753955	5.02966		5.8	30
Benzene	A	10.0	10	6.451452	6.680549		3.6	30
1,2-Dichloropropane	A	10.0	10	0.7971387	0.8271189		3.8	30
Trichloroethene	A	10.0	11	0.7987102	0.8597767		7.6	30
Bromodichloromethane	A	10.0	11	1.589696	1.722863		8.4	30
cis-1,3-Dichloropropene	A	10.0	11	1.182573	1.247758		5.5	30
trans-1,3-Dichloropropene	A	10.0	11	0.8474344	0.8955983		5.7	30
1,1,2-Trichloroethane	A	10.0	11	0.69173	0.7307083		5.6	30
4-Methyl-2-pentanone	A	10.0	11	2.522592	2.749448		9.0	30

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AD07766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS7	Calibration:	2011052
Lab File ID:	207KJ003.D	Calibration Date:	11/10/20 12:33
Sequence:	AA63569	Injection Date:	11/15/20
Lab Sample ID:	AA63569-CCV1	Injection Time:	19:12

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	10	1.165264	1.219995		4.7	30
2-Hexanone	A	10.0	11	2.106753	2.343104		11	30
1,2-Dibromoethane	A	10.0	11	1.089628	1.18715		9.0	30
Tetrachloroethene	A	10.0	11	0.9012218	0.9794861		8.7	30
Dibromochloromethane	A	10.0	11	1.082968	1.237788		14	30
Chlorobenzene	A	10.0	10	1.747106	1.82705		4.6	30
Ethylbenzene	A	10.0	10	0.8758307	0.8948025		2.2	30
m,p-Xylenes	A	20.0	21	1.045399	1.094265		4.7	30
o-Xylene	A	10.0	10	0.9875949	1.003964		1.7	30
Styrene	A	10.0	11	1.373504	1.516022		10	30
Bromoform	A	10.0	12	1.306341	1.527032		17	30
1,1,2,2-Tetrachloroethane	A	10.0	11	1.377798	1.489789		8.1	30
1,3-Dichlorobenzene	A	10.0	12	0.881244	1.032788		17	30
1,4-Dichlorobenzene	A	10.0	12	0.7737203	0.9209145		19	30
1,2-Dichlorobenzene	A	10.0	12	0.7792018	0.9209225		18	30
1,2,4-Trichlorobenzene	A	10.0	7.5	0.1383459	0.1547348		-25	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA63477
Instrument: OVGCMS7

Calibration: 2011052

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0K0796	Air- VIRTUAL TUN-111020	AA63477-TUN1	207KE002.D	11/10/20 12:33
A0K0799	Air- Virtual CAL1 111020	AA63477-CAL1	207KE004.D	11/10/20 13:55
A0K0800	Air- Virtual CAL2 111020	AA63477-CAL2	207KE005.D	11/10/20 14:34
A0K0801	Air- Virtual CAL3 111020	AA63477-CAL3	207KE006.D	11/10/20 15:12
A0K0802	Air- Virtual CAL4 111020	AA63477-CAL4	207KE007.D	11/10/20 15:51
A0K0803	Air- Virtual CAL5 111020	AA63477-CAL5	207KE008.D	11/10/20 16:30
A0K0804	Air- Virtual CAL6 111020	AA63477-CAL6	207KE009.D	11/10/20 17:08
A0K0805	Air- Virtual CAL7 111020	AA63477-CAL7	207KE010.D	11/10/20 17:47
A0K0806	Air- Virtual CAL8 111020	AA63477-CAL8	207KE011.D	11/10/20 18:31
A0K0807	Air- Virtual CAL9 111020	AA63477-CAL9	207KE012.D	11/10/20 19:16
A0K0808	Air- Virtual SCV 111020	AA63477-SCV1	207KE015.D	11/10/20 21:16

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2011052
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 11/10/20 12:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	0.125	8.118098	0.25	7.424324	0.5	6.780518	1.25	8.2875	2.5	7.608576	5	6.847427
Chloromethane	0.125	3.468397	0.25	3.070671	0.5	2.999886	1.25	3.389314	2.5	3.21693	5	2.950832
Vinyl chloride	0.125	3.024541	0.25	2.697195	0.5	2.617785	1.25	3.071984	2.5	2.909073	5	2.644054
Bromomethane	0.125	3.563179	0.25	3.154723	0.5	2.621724	1.25	2.903267	2.5	2.705048	5	2.516513
Chloroethane	0.125	1.68989	0.25	1.54386	0.5	1.366306	1.25	1.577451	2.5	1.480215	5	1.333177
Trichlorofluoromethane	0.125	6.639348	0.25	6.296362	0.5	5.976924	1.25	7.017793	2.5	6.552599	5	5.916624
1,1-Dichloroethane	0.125	5.127463	0.25	4.536426	0.5	4.446748	1.25	5.125819	2.5	4.872755	5	4.362077
Acetone	0.125	~~9.95594~~	0.25	~~7.666567~~	0.5	~~6.543773~~	1.25	7.008753	2.5	6.338542	5	5.715828
Carbon disulfide	0.125	7.429967	0.25	6.666667	0.5	6.490988	1.25	7.445081	2.5	7.075072	5	6.407674
Methylene chloride	0.125	~~3.080023~~	0.25	~~2.50451~~	0.5	~~2.049361~~	1.25	2.325107	2.5	2.160673	5	1.946453
Freon 113	0.125	3.410603	0.25	3.053226	0.5	2.976251	1.25	3.501766	2.5	3.332072	5	2.992363
trans-1,2-Dichloroethene	0.125	4.117999	0.25	3.834275	0.5	3.592536	1.25	4.415958	2.5	4.155248	5	3.807618
Methyl-tert-butyl ether	0.125	7.147933	0.25	6.800278	0.5	6.556969	1.25	7.821559	2.5	7.394439	5	6.706972
1,1-Dichloroethene	0.125	5.038076	0.25	4.544752	0.5	4.453051	1.25	5.256584	2.5	4.903928	5	4.452338
cis-1,2-Dichloroethene	0.125	2.545238	0.25	2.149271	0.5	2.111403	1.25	2.432494	2.5	2.370893	5	2.146988
2-Butanone	0.125	8.489519	0.25	7.821588	0.5	7.28946	1.25	8.615428	2.5	8.174172	5	7.448852
Chloroform	0.125	5.32165	0.25	5.085539	0.5	4.955494	1.25	5.923272	2.5	5.553533	5	4.955941
1,2-Dichloroethane	0.125	4.091028	0.25	3.688373	0.5	3.628776	1.25	4.349952	2.5	4.142379	5	3.6286
1,1,1-Trichloroethane	0.125	5.343997	0.25	4.641491	0.5	4.546803	1.25	5.521935	2.5	5.248673	5	4.683093
Cyclohexane	0.125	4.478632	0.25	4.130836	0.5	3.936033	1.25	4.852831	2.5	4.554666	5	4.111549
Carbon tetrachloride	0.125	5.079687	0.25	4.862722	0.5	4.621648	1.25	5.535572	2.5	5.298351	5	4.773314
Benzene	0.125	7.20881	0.25	6.780057	0.5	6.093327	1.25	7.165002	2.5	6.820969	5	6.115234
1,2-Dichloropropane	0.125	0.8935981	0.25	0.7776603	0.5	0.7404392	1.25	0.8994452	2.5	0.8499941	5	0.7583822
Trichloroethene	0.125	0.8628967	0.25	0.7903893	0.5	0.7169304	1.25	0.9108252	2.5	0.8509646	5	0.7713786
Bromodichloromethane	0.125	1.620664	0.25	1.52903	0.5	1.467081	1.25	1.894204	2.5	1.786932	5	1.586342
cis-1,3-Dichloropropene	0.125	1.325512	0.25	1.139902	0.5	1.081406	1.25	1.318735	2.5	1.269308	5	1.135991
trans-1,3-Dichloropropene	0.125	0.9654674	0.25	0.8823476	0.5	0.7830749	1.25	0.985834	2.5	0.9175646	5	0.8331012
1,1,2-Trichloroethane	0.125	0.7433471	0.25	0.6607198	0.5	0.6420219	1.25	0.77724	2.5	0.7488566	5	0.6703313
4-Methyl-2-pentanone	0.125	2.523101	0.25	2.285634	0.5	2.217173	1.25	2.907496	2.5	2.820495	5	2.506632
Toluene	0.125	1.288763	0.25	1.150728	0.5	1.053456	1.25	1.289883	2.5	1.246829	5	1.108375
2-Hexanone	0.125	2.065835	0.25	1.798838	0.5	1.711999	1.25	2.403353	2.5	2.371557	5	2.143607

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2011052
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 11/10/20 12:33

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	0.125	1.152932	0.25	0.9982175	0.5	0.9532622	1.25	1.215653	2.5	1.183419	5	1.065017
Tetrachloroethene	0.125	0.995006	0.25	0.8564137	0.5	0.83104	1.25	0.9862118	2.5	0.9529391	5	0.8717309
Dibromochloromethane	0.125	1.035476	0.25	0.9534874	0.5	0.9189168	1.25	1.257656	2.5	1.226521	5	1.106967
Chlorobenzene	0.125	2.043184	0.25	1.741022	0.5	1.578267	1.25	1.928428	2.5	1.861865	5	1.680731
Ethylbenzene	0.125	1.064868	0.25	0.8894417	0.5	0.7929787	1.25	0.9690592	2.5	0.9256218	5	0.8469015
m,p-Xylenes	0.25	1.205102	0.5	1.053846	1	0.9443299	2.5	1.164073	5	1.115175	10	1.009864
o-Xylene	0.125	1.15896	0.25	0.9861134	0.5	0.874653	1.25	1.094344	2.5	1.019357	5	0.9292498
Styrene	0.125	1.337192	0.25	1.167043	0.5	1.097373	1.25	1.550967	2.5	1.446037	5	1.374982
Bromoform	0.125	1.175849	0.25	1.006441	0.5	1.014699	1.25	1.511113	2.5	1.453293	5	1.375709
1,1,2,2-Tetrachloroethane	0.125	1.424951	0.25	1.153233	0.5	1.062073	1.25	1.646725	2.5	1.531456	5	1.3935
1,3-Dichlorobenzene	0.125	0.8389871	0.25	0.6602538	0.5	0.6479338	1.25	0.9891376	2.5	0.9655568	5	0.9415343
1,4-Dichlorobenzene	0.125	0.6589456	0.25	0.5683923	0.5	0.5595687	1.25	0.8395646	2.5	0.8453829	5	0.8481208
1,2-Dichlorobenzene	0.125	0.6839765	0.25	0.5811164	0.5	0.5371891	1.25	0.9240874	2.5	0.8955246	5	0.8393732
1,2,4-Trichlorobenzene	0.125	~~0.2011518~~	0.25	~~0.1188612~~	0.5	8.113593E-02	1.25	0.108538	2.5	0.1180526	5	0.135061
4-Bromofluorobenzene	31	0.4165045	31	0.4227378	31	0.4298716	31	0.431787	31	0.4334522	31	0.44677

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2011052
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 11/10/20 12:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	10	6.855613	25	5.534288	50	5.305985						
Chloromethane	10	2.875463	25	2.649971	50	2.597812						
Vinyl chloride	10	2.647463	25	2.44278	50	2.537012						
Bromomethane	10	2.398265	25	2.178271	50	2.241497						
Chloroethane	10	1.315235	25	1.187591	50	1.236149						
Trichlorofluoromethane	10	5.822325	25	5.088926	50	4.965185						
1,1-Dichloroethane	10	4.370068	25	3.999577	50	4.223457						
Acetone	10	5.640759	25	5.092185	50	5.276044						
Carbon disulfide	10	6.405778	25	5.961581	50	6.275958						
Methylene chloride	10	1.918822	25	1.771497	50	1.85383						
Freon 113	10	3.020319	25	2.80491	50	2.90099						
trans-1,2-Dichloroethene	10	3.751028	25	3.423376	50	3.51405						
Methyl-tert-butyl ether	10	6.660634	25	6.111953	50	6.279063						
1,1-Dichloroethene	10	4.400963	25	3.979125	50	4.042194						
cis-1,2-Dichloroethene	10	2.175083	25	2.029228	50	2.128681						
2-Butanone	10	7.474565	25	6.970015	50	7.278687						
Chloroform	10	4.890072	25	4.42491	50	4.395952						
1,2-Dichloroethane	10	3.624629	25	3.241707	50	3.134299						
1,1,1-Trichloroethane	10	4.573231	25	3.908621	50	3.850993						
Cyclohexane	10	4.145375	25	3.841839	50	4.023612						
Carbon tetrachloride	10	4.70241	25	4.126664	50	3.785228						
Benzene	10	6.092838	25	5.739261	50	6.047573						
1,2-Dichloropropane	10	0.7611059	25	0.7184213	50	0.7752022						
Trichloroethene	10	0.777747	25	0.7314286	50	0.7758319						
Bromodichloromethane	10	1.581312	25	1.429095	50	1.412601						
cis-1,3-Dichloropropene	10	1.151018	25	1.077499	50	1.143786						
trans-1,3-Dichloropropene	10	0.8203488	25	0.731349	50	0.7078223						
1,1,2-Trichloroethane	10	0.6791839	25	0.630026	50	0.6738434						
4-Methyl-2-pentanone	10	2.554479	25	2.376217	50	2.512101						
Toluene	10	1.135316	25	1.070494	50	1.143531						
2-Hexanone	10	2.18887	25	2.074141	50	2.202575						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2011052
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 11/10/20 12:33

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	10	1.091938	25	1.038733	50	1.107478						
Tetrachloroethene	10	0.9020112	25	0.8642884	50	0.851355						
Dibromochloromethane	10	1.144656	25	1.052558	50	1.050474						
Chlorobenzene	10	1.673171	25	1.577039	50	1.640251						
Ethylbenzene	10	0.8327475	25	0.7732702	50	0.7875874						
m,p-Xylenes	20	1.014328	50	0.9497039	100	0.9521669						
o-Xylene	10	0.9280008	25	0.8951905	50	1.002486						
Styrene	10	1.411295	25	1.399228	50	1.577419						
Bromoform	10	1.405257	25	1.374785	50	1.439927						
1,1,2,2-Tetrachloroethane	10	1.385508	25	1.313085	50	1.489647						
1,3-Dichlorobenzene	10	0.983224	25	1.023325	50	~~1.23421~~						
1,4-Dichlorobenzene	10	0.9096185	25	0.9601693	50	~~1.180407~~						
1,2-Dichlorobenzene	10	0.8761374	25	0.8962099	50	~~1.061413~~						
1,2,4-Trichlorobenzene	10	0.1724179	25	0.2148699	50	~~0.2932569~~						
4-Bromofluorobenzene	31	0.4516147	31	0.4700462	31	0.5008389						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2011052
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 11/10/20 12:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	6.973592	14.83516	4.587778	0.2836025			30	
Chloromethane	3.024364	9.918579	5.092222	0.3642746			30	
Vinyl chloride	2.732432	8.011089	5.348889	0.2550915			30	
Bromomethane	2.698054	16.60866	6.181111	0.2353258			30	
Chloroethane	1.41443	11.87072	6.508889	0.2232533			30	
Trichlorofluoromethane	6.030676	11.38209	6.837778	0.1756255			30	
1,1-Dichloroethane	4.56271	8.683716	10.05667	8.493392E-02			30	
Acetone	5.845352	12.20948	8.998333	0.0461777			30	
Carbon disulfide	6.684307	7.788678	7.92	0.1785759			30	
Methylene chloride	1.996064	10.37547	8.888333	0.1095424			30	
Freon 113	3.110278	7.817153	7.98	0.1254799			30	
trans-1,2-Dichloroethene	3.845788	8.51628	9.148889	0.126472			30	
Methyl-tert-butyl ether	6.831089	7.919289	9.355556	9.497211E-02			30	
1,1-Dichloroethene	4.563446	9.444521	7.877778	0.1383662			30	
cis-1,2-Dichloroethene	2.232142	7.779814	10.77	6.678839E-02			30	
2-Butanone	7.729143	7.497025	11.49333	4.420676E-02			30	
Chloroform	5.056263	9.771158	11.10111	8.316433E-02			30	
1,2-Dichloroethane	3.725527	10.86685	12.07444	3.999656E-02			30	
1,1,1-Trichloroethane	4.702093	12.54052	11.39222	5.648544E-02			30	
Cyclohexane	4.230597	7.77632	11.05333	8.968143E-02			30	
Carbon tetrachloride	4.753955	11.46772	11.30778	0.0729903			30	
Benzene	6.451452	8.432235	11.84556	7.635456E-02			30	
1,2-Dichloropropane	0.7971387	8.372831	13.13444	0.0361807			30	
Trichloroethene	0.7987102	7.969532	12.51556	4.276699E-02			30	
Bromodichloromethane	1.589696	10.15625	13.17111	4.261238E-02			30	
cis-1,3-Dichloropropene	1.182573	8.147169	13.89	3.871401E-02			30	
trans-1,3-Dichloropropene	0.8474344	11.59738	14.61778	3.190659E-02			30	
1,1,2-Trichloroethane	0.69173	7.479554	14.81222	2.321011E-02			30	
4-Methyl-2-pentanone	2.522592	8.964818	14.57	1.744623E-02			30	
Toluene	1.165264	7.659779	14.17778	2.501684E-02			30	

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AD07766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2011052
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 11/10/20 12:33

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Hexanone	2.106753	10.9887	15.51111	1.764847E-02			30	
1,2-Dibromoethane	1.089628	7.891931	15.35889	4.157953E-02			30	
Tetrachloroethene	0.9012218	6.834192	14.63111	1.163171E-02			30	
Dibromochloromethane	1.082968	10.49878	15.03778	2.990859E-02			30	
Chlorobenzene	1.747106	9.327835	15.94778	2.929109E-02			30	
Ethylbenzene	0.8758307	11.05179	15.93333	3.072485E-02			30	
m,p-Xylenes	1.045399	9.250939	16.09778	3.087712E-02			30	
o-Xylene	0.9875949	9.488147	16.61889	1.854222E-02			30	
Styrene	1.373504	11.52956	16.67111	2.988666E-02			30	
Bromoform	1.306341	14.64171	16.74889	2.075286E-02			30	
1,1,2,2-Tetrachloroethane	1.377798	13.21645	17.53778	3.143813E-02			30	
1,3-Dichlorobenzene	0.881244	17.04987	18.65625	2.329418E-02			30	
1,4-Dichlorobenzene	0.7737203	20.10779	18.75875	2.717332E-02			30	
1,2-Dichlorobenzene	0.7792018	19.88811	19.31	1.857687E-02			30	
1,2,4-Trichlorobenzene	0.1383459	34.8173	21.23	1.636723E-02	0.993		0.99	
4-Bromofluorobenzene	0.444847	5.966835	17.35	0.0180686			30	

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2011052 **Laboratory ID:** AA63477-SCV1

Sequence: AA63477 **Standard ID:** A0K0808

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
Chlorobenzene	10.0	9.8	-2.1	30.00
Ethylbenzene	10.0	9.6	-3.7	30.00
Carbon tetrachloride	10.0	9.1	-9.3	30.00
1,3-Dichlorobenzene	10.0	12	21.2	30.00
Methyl-tert-butyl ether	10.0	9.0	-9.8	30.00
trans-1,2-Dichloroethene	10.0	9.1	-8.9	30.00
cis-1,2-Dichloroethene	10.0	9.5	-5.1	30.00
Xylenes (Total)	30.0	30	-0.2	30.00
Tetrachloroethene	10.0	10	0.5	30.00
Dibromochloromethane	10.0	9.7	-3.2	30.00
Acetone	10.0	8.9	-10.9	30.00
Cyclohexane	10.0	9.0	-10.3	30.00
Chloroform	10.0	9.5	-4.6	30.00
Toluene	10.0	9.8	-2.2	30.00
m,p-Xylenes	20.0	20	0.4	30.00
4-Methyl-2-pentanone	10.0	9.7	-3.3	30.00
1,2-Dichloroethane	10.0	9.5	-4.5	30.00
1,2-Dibromoethane	10.0	10	4.0	30.00
1,4-Dichlorobenzene	10.0	13	26.9	30.00
trans-1,3-Dichloropropene	10.0	12	22.4	30.00
cis-1,3-Dichloropropene	10.0	10	3.8	30.00
Styrene	10.0	11	10.3	30.00
1,2,4-Trichlorobenzene	10.0	12	23.4	30.00
Bromodichloromethane	10.0	9.2	-8.3	30.00
o-Xylene	10.0	9.8	-1.5	30.00
1,1,2,2-Tetrachloroethane	10.0	11	11.8	30.00
Trichloroethene	10.0	9.6	-3.8	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AD07766-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2011052 **Laboratory ID:** AA63477-SCV1

Sequence: AA63477 **Standard ID:** A0K0808

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
1,1,2-Trichloroethane	10.0	9.9	-0.7	30.00
2-Butanone	10.0	9.1	-9.1	30.00
1,2-Dichloropropane	10.0	9.5	-4.7	30.00
Freon 113	10.0	9.6	-3.6	30.00
Dichlorodifluoromethane	10.0	9.8	-2.4	30.00
Trichlorofluoromethane	10.0	9.4	-5.6	30.00
2-Hexanone	10.0	10	1.0	30.00
1,1-Dichloroethane	10.0	9.5	-4.8	30.00
1,2-Dichlorobenzene	10.0	13	26.7	30.00
Bromoform	10.0	10	-0.1	30.00
Carbon disulfide	10.0	8.8	-11.6	30.00
Methylene chloride	10.0	9.6	-4.2	30.00
Vinyl chloride	10.0	9.4	-5.8	30.00
Chloroethane	10.0	9.0	-10.0	30.00
Chloromethane	10.0	9.3	-6.8	30.00
Bromomethane	10.0	8.9	-11.3	30.00
1,1,1-Trichloroethane	10.0	9.6	-4.0	30.00
Benzene	10.0	9.4	-5.7	30.00
1,1-Dichloroethene	10.0	9.5	-4.9	30.00

* Values outside of QC limits

ANALYSIS SEQUENCE

AA63569

Instrument: OVGCMS7

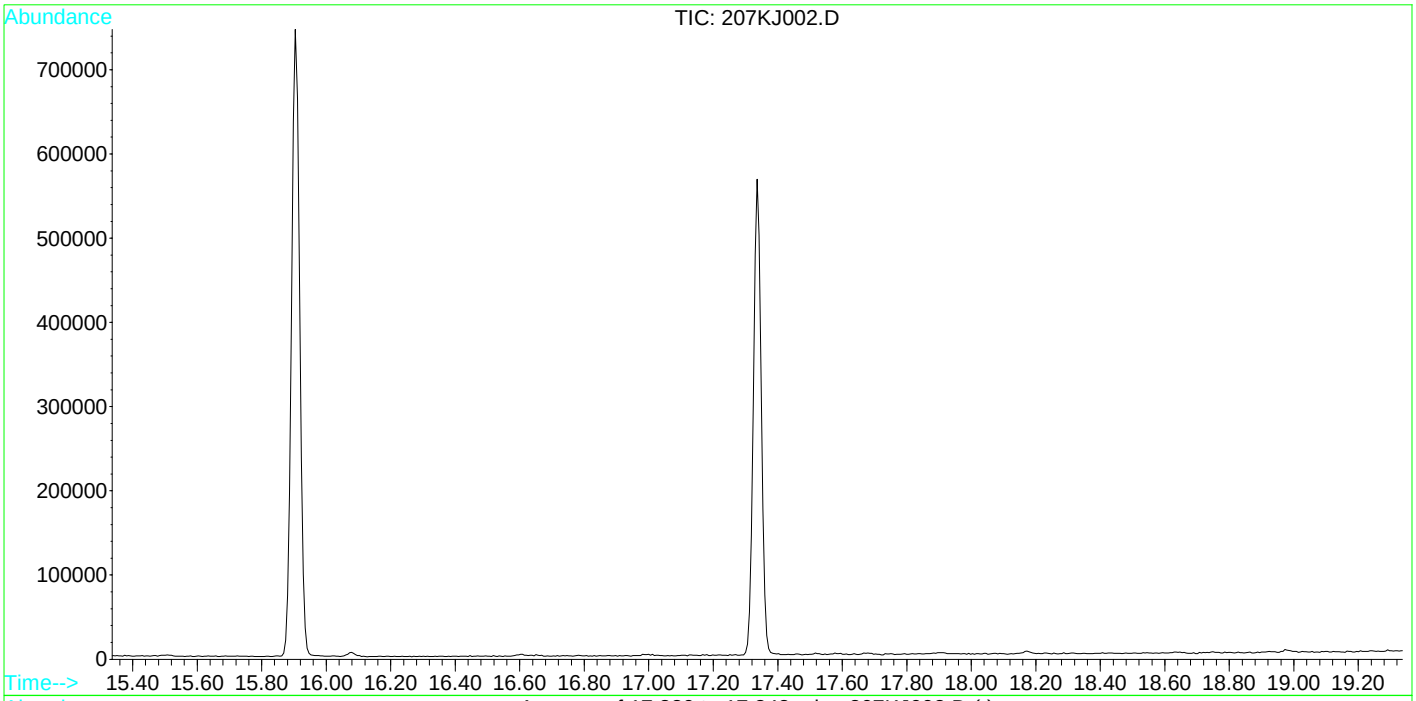
Calibration ID: 2011052 **Printed: 11/17/2020 1:20:53PM**

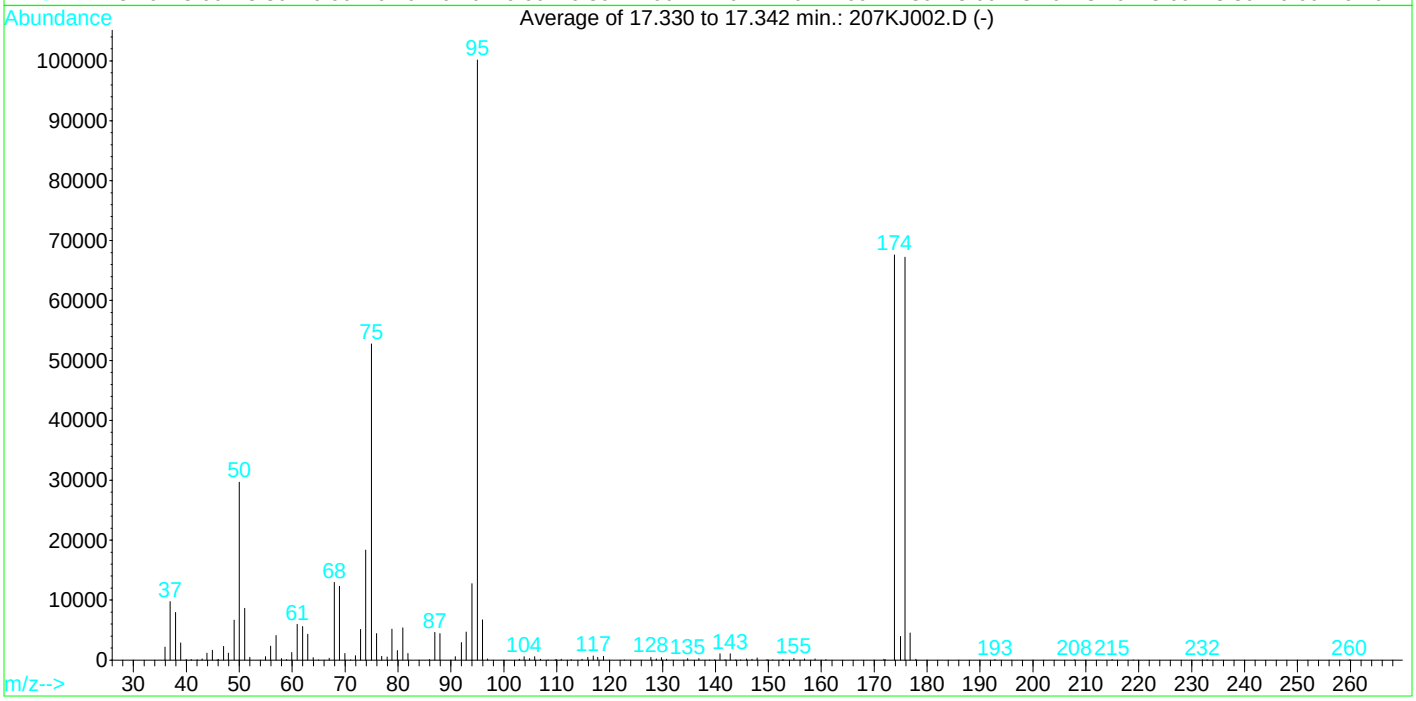
Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA63569-TUN1	QC		1		A0K0796			
AA63569-CCV1	QC		2		A0K0748	A0K0797		
0K15003-BS1	QC		3			A0K0797		
0K15003-BSD1	QC		4			A0K0797		
0K15003-BLK1	QC		5			A0K0797		
AD07713-01RE2	Method 18 Modified	A	6			A0K0797		
AD07675-01RE1	Method 18 Modified	A	7			A0K0797		
AD07675-01RE2	Method 18 Modified	A	8			A0K0797		
AD07549-01RE1	TO15 Modified	A	9			A0K0797		
AD07549-02RE1	TO15 Modified	A	10			A0K0797		
AD07549-03RE1	TO15 Modified	A	11			A0K0797		
AD07549-04RE1	TO15 Modified	A	12			A0K0797		
AD07766-01	TO15 (SUMMA)	A	13			A0K0797	Tetra Tech NUS, Inc. (TE015)	custom, ug/m3
AD07766-02	TO15 (SUMMA)	A	14			A0K0797	Tetra Tech NUS, Inc. (TE015)	custom, ug/m3

Samples Loaded By Date

Data Processed By Date

Data File : C:\HPCHEM\1\DATA\111520\207KJ002.D Vial: 2
Acq On : 15 Nov 2020 6:27 pm Operator: rgg
Sample : aa63569-tun1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)





AutoFind: Scans 2161, 2162, 2163; Background Corrected with Scan 2153

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.6	29685	PASS
75	95	30	60	52.7	52768	PASS
95	95	100	100	100.0	100139	PASS
96	95	5	9	6.7	6697	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	67.5	67605	PASS
175	174	5	9	5.8	3909	PASS
176	174	95	101	99.4	67224	PASS
177	176	5	9	6.7	4529	PASS

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☑ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

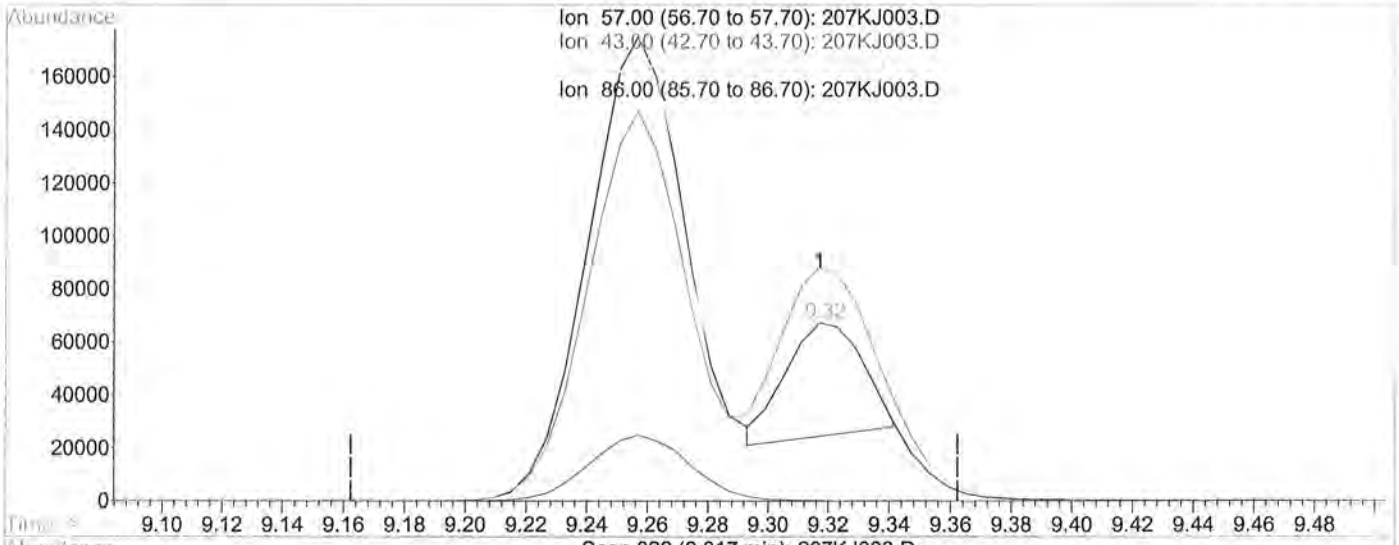
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

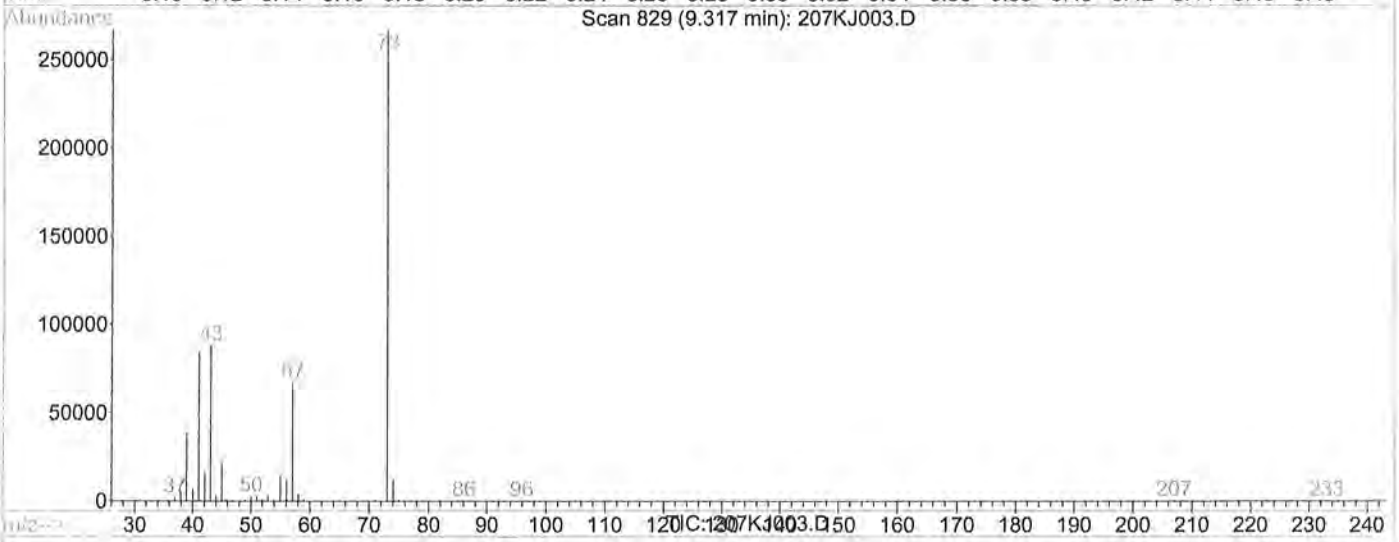
Instrument ID:	OVGCMS7
Sequence/Batch ID:	AAG3569/OK15003
Data File Prefix:	207KJ
Date and Time Range of MIs:	11/15/20 20:12 — 20:12
Reviewer Print Name:	Neil Christian
Reviewer Signature:	
Date of Review:	11/16/20

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\111520\207KJ003.D Vial: 3
Acq On : 15 Nov 2020 7:12 pm Operator: rgg
Sample : aa63569-ccv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 15 20:10 2020 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Multiple Level Calibration





(21) Hexane

9.32min 2058.81PPTV

response 75943

Ion	Exp%	Act%
57.00	100	100
43.00	84.50	142.24#
41.00	104.40	128.58
86.00	14.10	0.00#

Select One:

[✓] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:

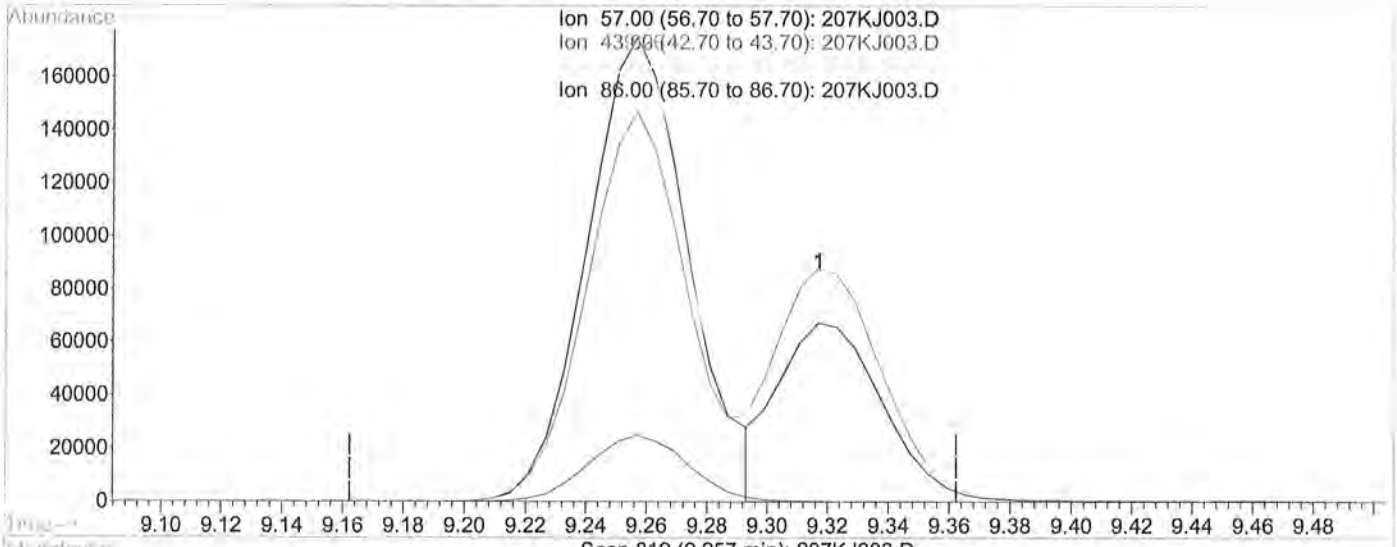
Review by/Date RS 11/16/20

Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\111520\207KJ003.D Vial: 3
Acq On : 15 Nov 2020 7:12 pm Operator: rgg
Sample : aa63569-ccv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 15 20:12 2020 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Multiple Level Calibration



(21) Hexane

9.26min 10995.94PPTV m

response 405605

Ion	Exp%	Act%
57.00	100	100
43.00	84.50	26.63#
41.00	104.40	24.07#
86.00	14.10	0.00#

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[✓] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date RG 11/16/20

Review by/Date:

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ003.D Vial: 3
Acq On : 15 Nov 2020 7:12 pm Operator: rgg
Sample : aa63569-ccv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 15 20:12 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.01	130	290783	31000.00	PPTV	-0.03
36) 1,4-DIFLUOROBENZENE	12.51	114	958257	31000.00	PPTV	-0.02
51) D5-CHLOROBENZENE	15.91	117	768114	31000.00	PPTV	-0.01
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.34	174	343127	31130.08	PPTV	-0.01
Spiked Amount 31250.000	Range 50 - 150		Recovery = 99.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.55	85	688314	10522.59	PPTV	99
3) Propene	4.42	41	286452	10220.65	PPTV	99
4) Chloromethane	5.05	50	292023	10293.80	PPTV	99
5) Freon 114	4.94	135	357901	10457.48	PPTV	99
6) Vinyl Chloride	5.31	62	272401	10628.01	PPTV	100
7) 1,3-Butadiene	5.38	39	303611	10419.61	PPTV	99
8) Bromomethane	6.14	94	236663	9351.31	PPTV	99
9) Chloroethane	6.47	64	126293	9518.98	PPTV	99
10) Trichlorofluoromethane	6.80	101	569537	10068.13	PPTV	100
11) Bromoethene	6.72	106	203523	9791.81	PPTV	99
12) 1,1-Dichloroethene	7.84	61	446252	10425.09	PPTV	99
13) Acetone	8.97	43	570919	10412.54	PPTV	99
14) Isopropyl Alcohol	8.78	45	501090	10515.98	PPTV	99
15) Carbon Disulfide	7.89	76	648953	10350.22	PPTV	99
16) Methylene Chloride	8.86	84	196805	10511.25	PPTV	99
17) Freon 113	7.95	151	306869	10518.32	PPTV	98
18) 3-chloro-1-propene	8.70	41	466497	10281.73	PPTV	97
19) t-1,2-Dichloroethene	9.12	61	380294	10542.09	PPTV	99
20) Methyl tert-butyl ether	9.32	73	672850	10500.77	PPTV	98
21) Hexane	9.26	57	405605m	10995.94	PPTV	
22) 1,1-Dichloroethane	10.03	63	443135	10353.95	PPTV	100
23) Vinyl Acetate	10.36	43	979075	10725.00	PPTV	100
24) c-1,2-Dichloroethene	10.75	96	217730	10398.94	PPTV	100
25) Ethyl Acetate	11.22	43	880778	10576.98	PPTV	100
26) 2-Butanone	11.47	43	763124	10525.83	PPTV	100
27) Chloroform	11.09	83	490014	10331.69	PPTV	98
28) Tetrahydrofuran	11.31	42	355699	10484.30	PPTV	99
29) 2,2,4-Trimethylpentane	11.64	57	1287368	10644.39	PPTV	98
30) 1,2-Dichloroethane	12.06	62	366357	10483.58	PPTV	100
31) 1,1,1-Trichloroethane	11.37	97	469892	10653.68	PPTV	100
32) Cyclohexane	11.03	56	417414	10518.60	PPTV	99
33) Carbon Tetrachloride	11.29	117	471787	10579.95	PPTV	100
34) Benzene	11.83	78	626642	10355.11	PPTV	100
35) Heptane	11.73	43	604317	10622.26	PPTV	100
37) TLPH	14.16	TIC	1726171m	10281.79	PPTV	
38) 1,2-Dichloropropane	13.12	63	255675	10376.10	PPTV	95
39) Trichloroethene	12.50	130	265770	10764.56	PPTV	100
40) 1,4-Dioxane	13.38	88	135136	10456.74	PPTV	98
41) Bromodichloromethane	13.15	83	532563	10837.69	PPTV	100
42) c-1,3-Dichloropropene	13.88	75	385701	10551.22	PPTV	99
43) t-1,3-Dichloropropene	14.60	75	276843	10568.35	PPTV	99
44) 1,1,2-Trichloroethane	14.80	97	225873	10563.49	PPTV	99
45) Methyl Isobutyl Ketone	14.55	43	849896	10899.30	PPTV	99
46) Toluene	14.16	92	377119	10469.69	PPTV	100
47) 2-Hexanone	15.49	43	724289	11121.87	PPTV	100
48) 1,2-Dibromoethane	15.34	107	366966	10895.00	PPTV	100
49) Tetrachloroethene	14.62	166	302774	10868.42	PPTV	99
50) Dibromochloromethane	15.03	127	382619	11429.59	PPTV	100
52) Chlorobenzene	15.93	112	452704	10457.58	PPTV	98
53) Ethylbenzene	15.92	106	221713	10216.61	PPTV	99
54) m-Xylene & p-Xylene	16.08	106	542271	20934.88	PPTV	99
55) Styrene	16.66	104	375638	11037.62	PPTV	98
56) o-Xylene	16.61	106	248761	10165.75	PPTV	100
57) Bromoform	16.73	173	378366	11689.38	PPTV	97

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\111520\207KJ003.D Vial: 3
Acq On : 15 Nov 2020 7:12 pm Operator: rgg
Sample : aa63569-ccv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 15 20:12 2020 Quant Results File: 111020.RES

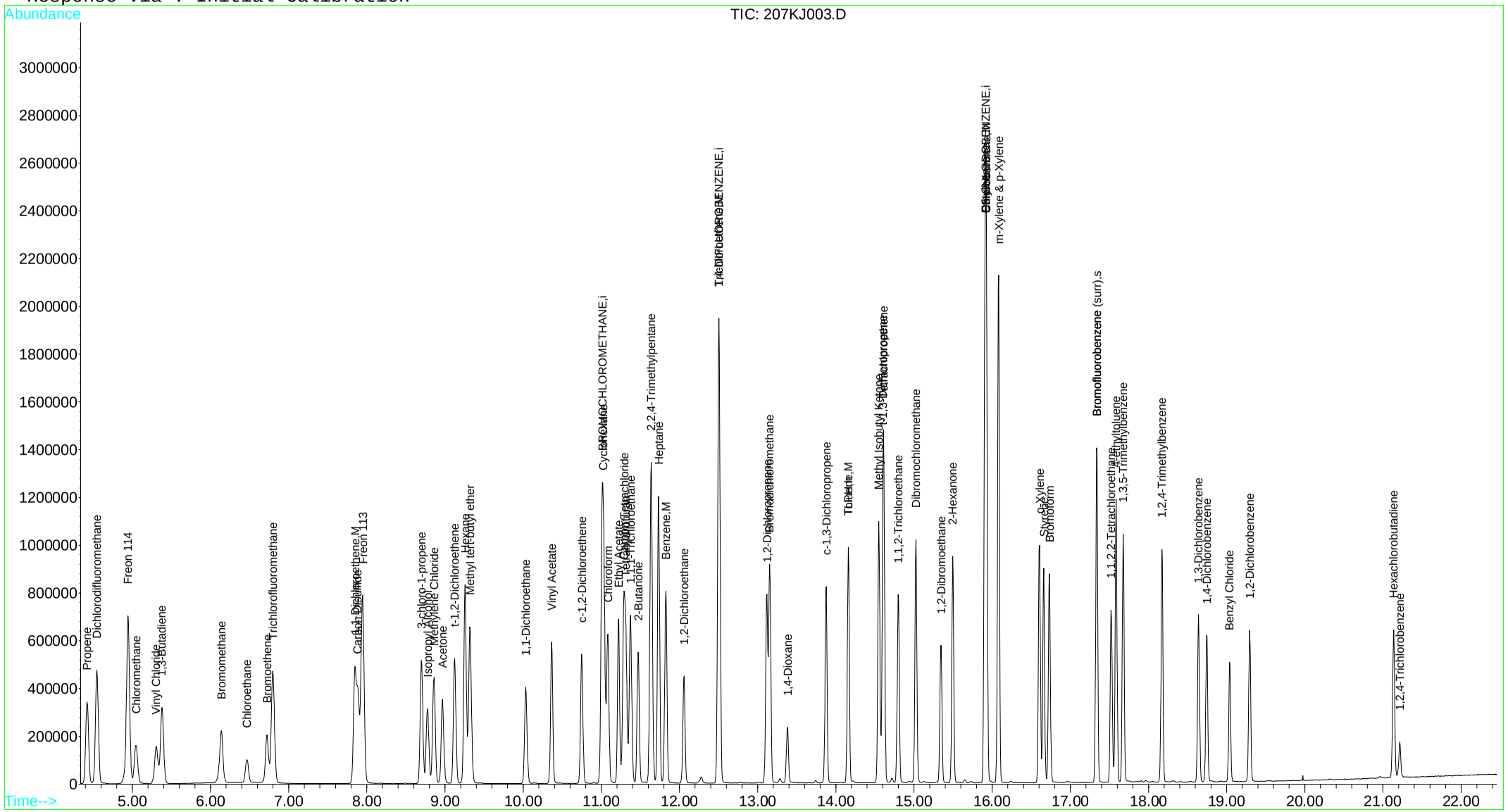
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.52	83	369138	10812.83	PPTV	100
59) Bromofluorobenzene	17.34	174	343127	31130.08	PPTV	97
61) 4-ethyltoluene	17.59	105	724889	11030.48	PPTV	99
62) 1,3,5-Trimethylbenzene	17.68	105	530561	10380.90	PPTV	99
63) 1,2,4-Trimethylbenzene	18.17	105	504510	10690.73	PPTV	99
64) 1,3-Dichlorobenzene	18.64	146	255903	11719.67	PPTV	99
65) 1,4-Dichlorobenzene	18.75	146	228183	11902.42	PPTV	99
66) Benzyl Chloride	19.04	91	336193	9477.46	PPTV	98
67) 1,2-Dichlorobenzene	19.30	146	228185	11818.79	PPTV	100
68) 1,2,4-Trichlorobenzene	21.21	180	38340	7526.88	PPTV	98
69) Hexachlorobutadiene	21.14	225	104182	9852.95	PPTV	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111520\207KJ003.D Vial: 3
Acq On : 15 Nov 2020 7:12 pm Operator: rgg
Sample : aa63569-ccv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 15 20:12 2020 Quant Results File: 111020.RES

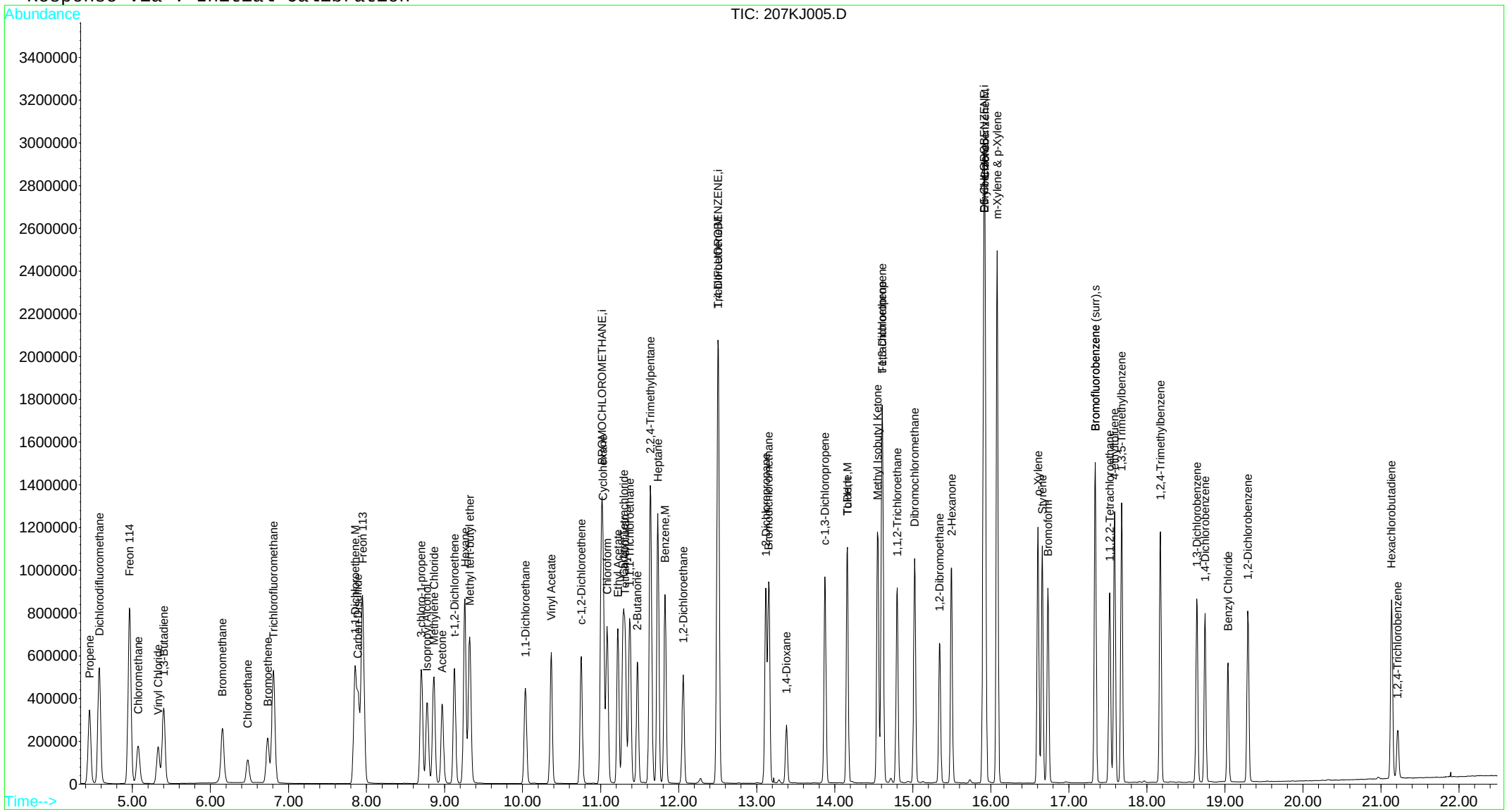
Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\111520\207KJ005.D Vial: 5
Acq On : 15 Nov 2020 8:29 pm Operator: rgg
Sample : 0k15003-bs1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:08 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ005.D Vial: 5
Acq On : 15 Nov 2020 8:29 pm Operator: rgg
Sample : 0k15003-bs1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:08 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.01	130	309289	31000.00 PPTV	-0.03
36) 1,4-DIFLUOROBENZENE	12.51	114	1019712	31000.00 PPTV	-0.02
51) D5-CHLOROBENZENE	15.91	117	818168	31000.00 PPTV	-0.01
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.34	174	362912	30910.77 PPTV	-0.01
Spiked Amount 31250.000	Range 50 - 150		Recovery = 98.91%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.58	85	755853	10863.71 PPTV	100
3) Propene	4.45	41	291604	9781.93 PPTV	99
4) Chloromethane	5.07	50	314217	10413.41 PPTV	100
5) Freon 114	4.97	135	396035	10879.33 PPTV	98
6) Vinyl Chloride	5.33	62	289117	10605.26 PPTV	100
7) 1,3-Butadiene	5.40	39	309469	9985.17 PPTV	99
8) Bromomethane	6.15	94	263419	9785.74 PPTV	100
9) Chloroethane	6.48	64	139474	9883.46 PPTV	99
10) Trichlorofluoromethane	6.81	101	642941	10685.68 PPTV	99
11) Bromoethene	6.74	106	212802	9625.64 PPTV	100
12) 1,1-Dichloroethene	7.85	61	501595	11016.85 PPTV	99
13) Acetone	8.97	43	605412	10380.96 PPTV	98
14) Isopropyl Alcohol	8.77	45	608233	12000.76 PPTV	98
15) Carbon Disulfide	7.90	76	687482	10308.66 PPTV	99
16) Methylene Chloride	8.86	84	223489	11222.23 PPTV	99
17) Freon 113	7.95	151	345961	11148.73 PPTV	99
18) 3-chloro-1-propene	8.70	41	485694	10064.32 PPTV	97
19) t-1,2-Dichloroethene	9.12	61	395901	10318.07 PPTV	99
20) Methyl tert-butyl ether	9.32	73	704985	10343.97 PPTV	99
21) Hexane	9.26	57	430003	10959.86 PPTV	97
22) 1,1-Dichloroethane	10.04	63	495506	10884.87 PPTV	99
23) Vinyl Acetate	10.37	43	1014234	10445.38 PPTV	100
24) c-1,2-Dichloroethene	10.75	96	244454	10976.72 PPTV	100
25) Ethyl Acetate	11.22	43	919302	10379.06 PPTV	99
26) 2-Butanone	11.47	43	800327	10378.47 PPTV	100
27) Chloroform	11.08	83	553571	10973.39 PPTV	99
28) Tetrahydrofuran	11.32	42	379016	10503.13 PPTV	99
29) 2,2,4-Trimethylpentane	11.64	57	1345183	10456.92 PPTV	98
30) 1,2-Dichloroethane	12.06	62	409321	11012.19 PPTV	99
31) 1,1,1-Trichloroethane	11.37	97	517408	11029.08 PPTV	99
32) Cyclohexane	11.04	56	432438	10245.18 PPTV	99
33) Carbon Tetrachloride	11.29	117	467942	9865.84 PPTV	100
34) Benzene	11.82	78	694085	10783.32 PPTV	100
35) Heptane	11.73	43	624100	10313.62 PPTV	100
37) TLPH	14.16	TIC	1960487m	10973.71 PPTV	
38) 1,2-Dichloropropane	13.12	63	287799	10975.88 PPTV	95
39) Trichloroethene	12.50	130	293675	11177.94 PPTV	99
40) 1,4-Dioxane	13.38	88	152002	11052.97 PPTV	99
41) Bromodichloromethane	13.15	83	554601	10605.98 PPTV	100
42) c-1,3-Dichloropropene	13.87	75	460602	11840.83 PPTV	99
43) t-1,3-Dichloropropene	14.60	75	389843	13985.17 PPTV	99
44) 1,1,2-Trichloroethane	14.80	97	257883	11333.66 PPTV	99
45) Methyl Isobutyl Ketone	14.55	43	925458	11153.06 PPTV	99
46) Toluene	14.16	92	428740	11185.46 PPTV	99
47) 2-Hexanone	15.49	43	796858	11498.77 PPTV	100
48) 1,2-Dibromoethane	15.34	107	429601	11985.92 PPTV	99
49) Tetrachloroethene	14.61	166	346099	11674.89 PPTV	98
50) Dibromochloromethane	15.02	127	393993	11060.05 PPTV	99
52) Chlorobenzene	15.93	112	522248	11326.00 PPTV	97
53) Ethylbenzene	15.92	106	257321	11132.03 PPTV	98
54) m-Xylene & p-Xylene	16.08	106	632392	22920.48 PPTV	98
55) Styrene	16.66	104	459521	12676.36 PPTV	98
56) o-Xylene	16.61	106	290574	11148.00 PPTV	99
57) Bromoform	16.73	173	390154	11316.15 PPTV	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ005.D Vial: 5
Acq On : 15 Nov 2020 8:29 pm Operator: rgg
Sample : 0k15003-bs1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:08 2020 Quant Results File: 111020.RES

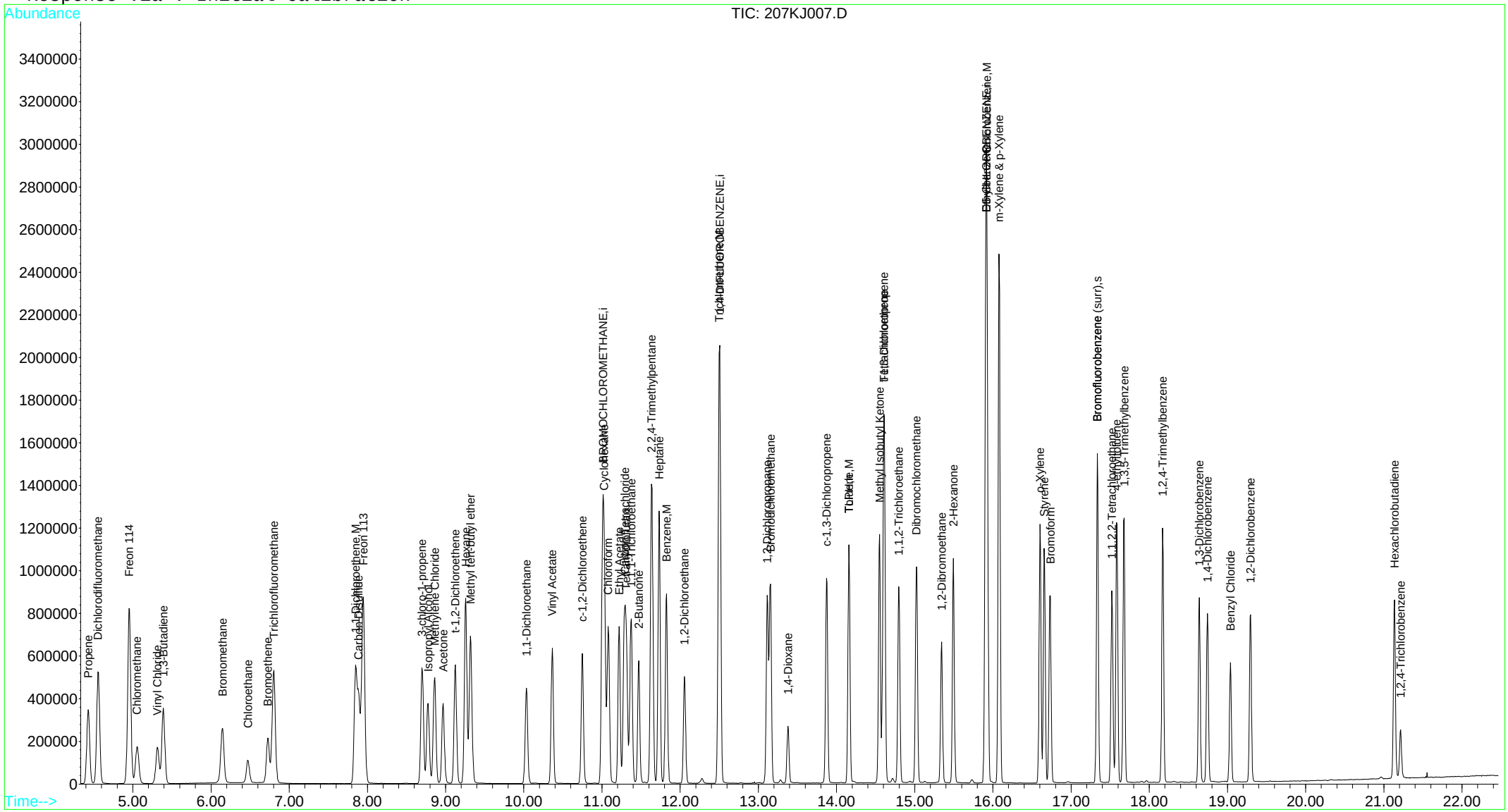
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.53	83	463897	12757.20	PPTV	100
59) Bromofluorobenzene	17.34	174	362912	30910.77	PPTV	97
61) 4-ethyltoluene	17.59	105	781772	11168.28	PPTV	99
62) 1,3,5-Trimethylbenzene	17.68	105	660318	12129.31	PPTV	99
63) 1,2,4-Trimethylbenzene	18.18	105	619386	12322.03	PPTV	99
64) 1,3-Dichlorobenzene	18.64	146	315018	13544.36	PPTV	99
65) 1,4-Dichlorobenzene	18.75	146	287032	14056.12	PPTV	98
66) Benzyl Chloride	19.04	91	374086	9900.52	PPTV	98
67) 1,2-Dichlorobenzene	19.29	146	290653	14133.32	PPTV	99
68) 1,2,4-Trichlorobenzene	21.22	180	62897	11592.47	PPTV	97
69) Hexachlorobutadiene	21.14	225	148456	13181.19	PPTV	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111520\207KJ007.D Vial: 7
Acq On : 15 Nov 2020 9:47 pm Operator: rgg
Sample : 0k13005-bsd1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:09 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ007.D Vial: 7
Acq On : 15 Nov 2020 9:47 pm Operator: rgg
Sample : 0k13005-bsd1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:09 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.01	130	312544	31000.00 PPTV	-0.03
36) 1,4-DIFLUOROBENZENE	12.51	114	1018072	31000.00 PPTV	-0.02
51) D5-CHLOROBENZENE	15.91	117	819316	31000.00 PPTV	-0.01
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.34	174	365185	31060.79 PPTV	-0.02
Spiked Amount 31250.000	Range 50 - 150		Recovery = 99.39%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.55	85	767781	10920.22 PPTV	99
3) Propene	4.43	41	299992	9958.50 PPTV	99
4) Chloromethane	5.06	50	326243	10699.36 PPTV	100
5) Freon 114	4.95	135	405564	11025.07 PPTV	99
6) Vinyl Chloride	5.31	62	301479	10943.55 PPTV	100
7) 1,3-Butadiene	5.39	39	313096	9996.99 PPTV	99
8) Bromomethane	6.15	94	268463	9869.25 PPTV	100
9) Chloroethane	6.47	64	138339	9700.94 PPTV	100
10) Trichlorofluoromethane	6.80	101	647353	10646.96 PPTV	100
11) Bromoethene	6.73	106	212037	9491.15 PPTV	98
12) 1,1-Dichloroethene	7.85	61	504013	10954.67 PPTV	99
13) Acetone	8.97	43	605634	10276.62 PPTV	99
14) Isopropyl Alcohol	8.78	45	603564	11784.61 PPTV	99
15) Carbon Disulfide	7.89	76	688455	10215.74 PPTV	99
16) Methylene Chloride	8.86	84	224199	11140.63 PPTV	98
17) Freon 113	7.95	151	346125	11037.85 PPTV	98
18) 3-chloro-1-propene	8.70	41	492924	10107.76 PPTV	96
19) t-1,2-Dichloroethene	9.13	61	403579	10408.64 PPTV	99
20) Methyl tert-butyl ether	9.32	73	708248	10283.62 PPTV	99
21) Hexane	9.26	57	430503	10858.33 PPTV	98
22) 1,1-Dichloroethane	10.03	63	503726	10950.20 PPTV	99
23) Vinyl Acetate	10.36	43	1042523	10624.90 PPTV	100
24) c-1,2-Dichloroethene	10.75	96	247940	11017.30 PPTV	99
25) Ethyl Acetate	11.22	43	932782	10421.58 PPTV	100
26) 2-Butanone	11.47	43	802511	10298.41 PPTV	99
27) Chloroform	11.08	83	558537	10956.53 PPTV	99
28) Tetrahydrofuran	11.31	42	382160	10479.97 PPTV	100
29) 2,2,4-Trimethylpentane	11.63	57	1355987	10431.13 PPTV	98
30) 1,2-Dichloroethane	12.05	62	407690	10854.08 PPTV	100
31) 1,1,1-Trichloroethane	11.37	97	523012	11032.42 PPTV	100
32) Cyclohexane	11.03	56	441246	10344.98 PPTV	98
33) Carbon Tetrachloride	11.28	117	475129	9913.04 PPTV	100
34) Benzene	11.83	78	699814	10759.09 PPTV	100
35) Heptane	11.73	43	633666	10362.64 PPTV	100
37) TLPH	14.16	TIC	1945002m	10904.57 PPTV	
38) 1,2-Dichloropropane	13.11	63	285671	10912.28 PPTV	95
39) Trichloroethene	12.49	130	294823	11239.72 PPTV	100
40) 1,4-Dioxane	13.38	88	150978	10996.19 PPTV	99
41) Bromodichloromethane	13.16	83	553858	10608.83 PPTV	99
42) c-1,3-Dichloropropene	13.87	75	457392	11777.25 PPTV	99
43) t-1,3-Dichloropropene	14.60	75	389297	13988.08 PPTV	99
44) 1,1,2-Trichloroethane	14.80	97	258463	11377.45 PPTV	99
45) Methyl Isobutyl Ketone	14.55	43	915913	11055.81 PPTV	99
46) Toluene	14.16	92	428166	11188.48 PPTV	100
47) 2-Hexanone	15.50	43	799393	11553.94 PPTV	100
48) 1,2-Dibromoethane	15.34	107	426704	11924.27 PPTV	100
49) Tetrachloroethene	14.61	166	345777	11682.82 PPTV	98
50) Dibromochloromethane	15.02	127	395114	11109.38 PPTV	99
52) Chlorobenzene	15.93	112	520807	11278.93 PPTV	97
53) Ethylbenzene	15.92	106	257316	11116.21 PPTV	97
54) m-Xylene & p-Xylene	16.08	106	632693	22899.26 PPTV	98
55) Styrene	16.66	104	458214	12622.59 PPTV	99
56) o-Xylene	16.60	106	292648	11211.84 PPTV	99
57) Bromoform	16.73	173	390615	11313.64 PPTV	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ007.D Vial: 7
Acq On : 15 Nov 2020 9:47 pm Operator: rgg
Sample : 0k13005-bsd1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:09 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.52	83	464186	12747.26	PPTV	100
59) Bromofluorobenzene	17.34	174	365185	31060.79	PPTV	97
61) 4-ethyltoluene	17.59	105	783113	11171.76	PPTV	99
62) 1,3,5-Trimethylbenzene	17.68	105	657027	12051.95	PPTV	98
63) 1,2,4-Trimethylbenzene	18.17	105	616919	12255.75	PPTV	98
64) 1,3-Dichlorobenzene	18.64	146	315737	13556.25	PPTV	99
65) 1,4-Dichlorobenzene	18.74	146	288329	14099.85	PPTV	98
66) Benzyl Chloride	19.04	91	372747	9851.26	PPTV	98
67) 1,2-Dichlorobenzene	19.30	146	291400	14149.79	PPTV	99
68) 1,2,4-Trichlorobenzene	21.22	180	60914	11211.26	PPTV	100
69) Hexachlorobutadiene	21.14	225	147762	13101.19	PPTV	99

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ009.D Vial: 9
Acq On : 15 Nov 2020 11:10 pm Operator: rgg
Sample : 0k13005-blk1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:21 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.00	130	306095	31000.00	PPTV	-0.04
36) 1,4-DIFLUOROBENZENE	12.50	114	1002382	31000.00	PPTV	-0.03
51) D5-CHLOROBENZENE	15.91	117	735439	31000.00	PPTV	-0.02
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.34	174	310254	29398.27	PPTV	-0.02
Spiked Amount 31250.000	Range 50 - 150		Recovery = 94.07%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.56	85	2134	N.D.		
3) Propene	4.45	41	3986	N.D.		
4) Chloromethane	5.08	50	1365	N.D.		
5) Freon 114	4.96	135	972	N.D.		
6) Vinyl Chloride	5.31	62	800	N.D.		
7) 1,3-Butadiene	5.40	39	2048	N.D.		
8) Bromomethane	6.16	94	931	N.D.		
9) Chloroethane	6.52	64	42	N.D.		
10) Trichlorofluoromethane	6.79	101	1916	N.D.		
11) Bromoethene	6.72	106	566	N.D.		
12) 1,1-Dichloroethene	7.85	61	1373	N.D.		
13) Acetone	8.98	43	21771	377.20	PPTV	98
14) Isopropyl Alcohol	8.79	45	16927	337.46	PPTV #	86
15) Carbon Disulfide	7.88	76	3090	N.D.		
16) Methylene Chloride	8.85	84	2652	N.D.		
17) Freon 113	7.95	151	925	N.D.		
18) 3-chloro-1-propene	8.78	41	2082	N.D.		
19) t-1,2-Dichloroethene	9.11	61	1270	N.D.		
20) Methyl tert-butyl ether	9.34	73	3156	N.D.		
21) Hexane	9.24	57	1785	N.D.		
22) 1,1-Dichloroethane	10.02	63	1474	N.D.		
23) Vinyl Acetate	10.35	43	3184	N.D.		
24) c-1,2-Dichloroethene	10.73	96	853	N.D.		
25) Ethyl Acetate	11.22	43	3444	N.D.		
26) 2-Butanone	11.48	43	7116	N.D.		
27) Chloroform	11.06	83	1641	N.D.		
28) Tetrahydrofuran	11.33	42	1967	N.D.		
29) 2,2,4-Trimethylpentane	11.63	57	5255	N.D.		
30) 1,2-Dichloroethane	12.05	62	1294	N.D.		
31) 1,1,1-Trichloroethane	11.36	97	1800	N.D.		
32) Cyclohexane	11.02	56	1504	N.D.		
33) Carbon Tetrachloride	11.27	117	1340	N.D.		
34) Benzene	11.82	78	3175	N.D.		
35) Heptane	11.72	43	2412	N.D.		
37) TLPH	0.00	TIC	0	N.D. d		
38) 1,2-Dichloropropane	13.11	63	919	N.D.		
39) Trichloroethene	12.49	130	1000	N.D.		
40) 1,4-Dioxane	13.39	88	597	N.D.		
41) Bromodichloromethane	13.14	83	1776	N.D.		
42) c-1,3-Dichloropropene	13.87	75	1910	N.D.		
43) t-1,3-Dichloropropene	14.59	75	1728	N.D.		
44) 1,1,2-Trichloroethane	14.79	97	1120	N.D.		
45) Methyl Isobutyl Ketone	14.55	43	3734	N.D.		
46) Toluene	14.15	92	1995	N.D.		
47) 2-Hexanone	15.50	43	4740	N.D.		
48) 1,2-Dibromoethane	15.33	107	1604	N.D.		
49) Tetrachloroethene	14.61	166	1352	N.D.		
50) Dibromochloromethane	15.02	127	1294	N.D.		
52) Chlorobenzene	15.92	112	2420	N.D.		
53) Ethylbenzene	15.92	106	1571	N.D.		
54) m-Xylene & p-Xylene	16.07	106	3724	N.D.		
55) Styrene	16.66	104	2172	N.D.		
56) o-Xylene	16.60	106	1929	N.D.		
57) Bromoform	16.73	173	1337	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ009.D Vial: 9
Acq On : 15 Nov 2020 11:10 pm Operator: rgg
Sample : 0k13005-blk1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:21 2020 Quant Results File: 111020.RES

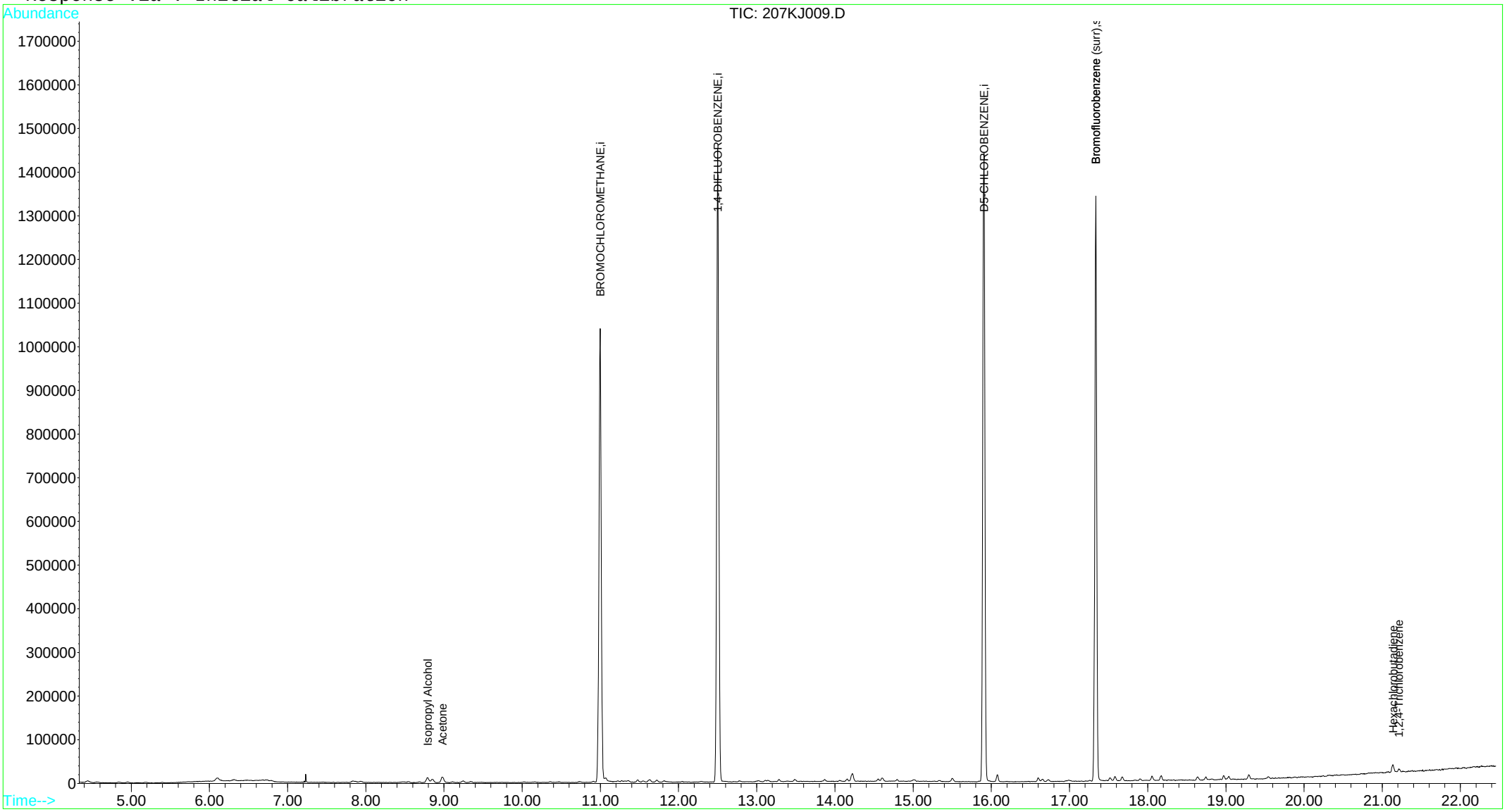
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.52	83	3107	N.D.		
59) Bromofluorobenzene	17.34	174	310254	29398.27	PPTV	98
61) 4-ethyltoluene	17.58	105	6061	N.D.		
62) 1,3,5-Trimethylbenzene	17.67	105	4405	N.D.		
63) 1,2,4-Trimethylbenzene	18.17	105	4977	N.D.		
64) 1,3-Dichlorobenzene	18.64	146	2554	N.D.		
65) 1,4-Dichlorobenzene	18.74	146	2163	N.D.		
66) Benzyl Chloride	19.04	91	3331	N.D.		
67) 1,2-Dichlorobenzene	19.29	146	3336	N.D.		
68) 1,2,4-Trichlorobenzene	21.21	180	1848	378.92	PPTV	96
69) Hexachlorobutadiene	21.14	225	2797	276.28	PPTV	96

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111520\207KJ009.D Vial: 9
Acq On : 15 Nov 2020 11:10 pm Operator: rgg
Sample : 0k13005-blk1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 8:21 2020 Quant Results File: 111020.RES

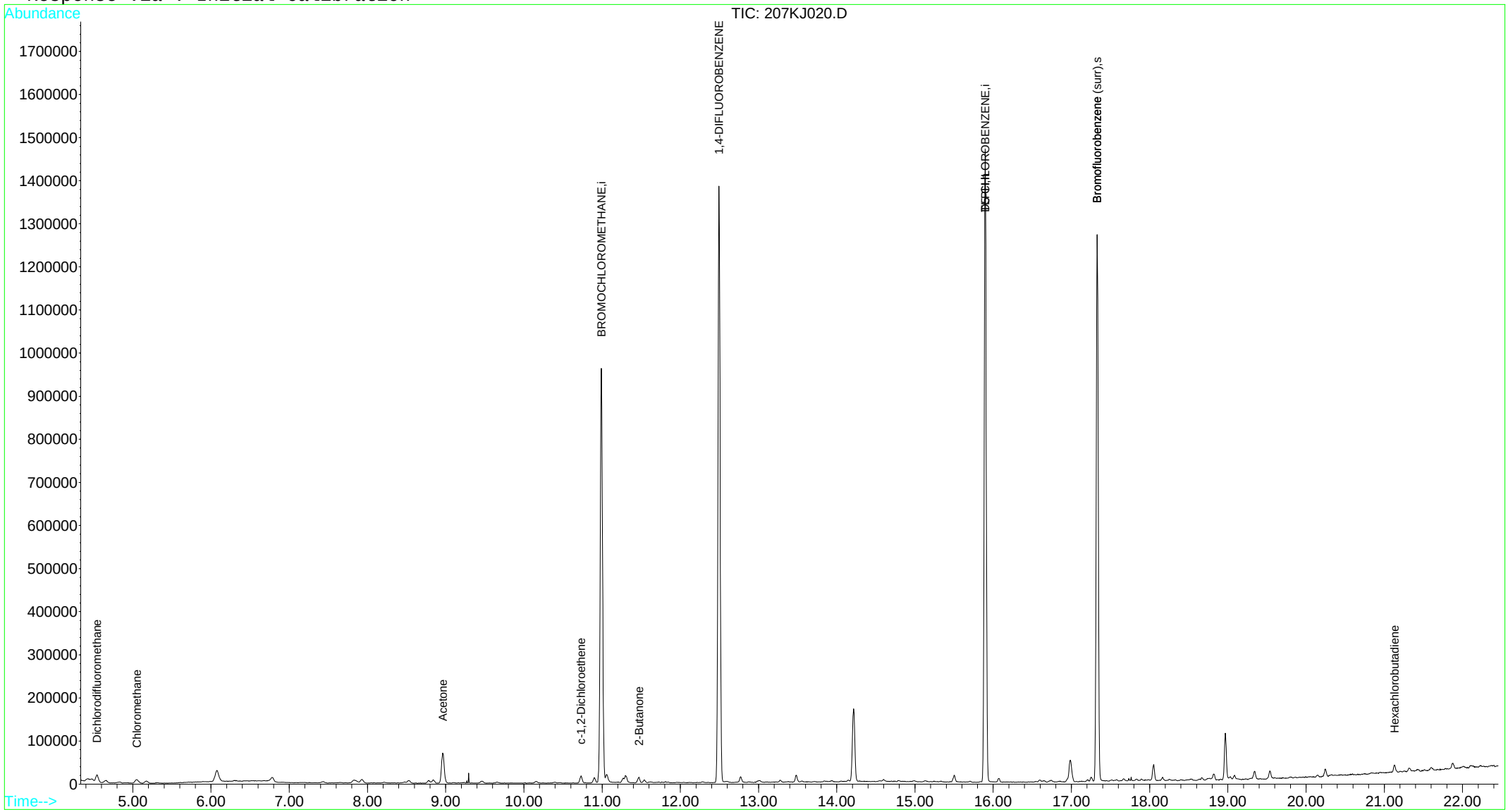
Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\111520\207KJ020.D Vial: 20
Acq On : 16 Nov 2020 2:47 pm Operator: rgg
Sample : ad07766-01 Inst : OVGCMS7
Misc : 1.31 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 16:01 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ020.D Vial: 20
Acq On : 16 Nov 2020 2:47 pm Operator: rgg
Sample : ad07766-01 Inst : OVGCMS7
Misc : 1.31 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 16:01 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	10.99	130	291767	31000.00	PPTV	-0.05
36) 1,4-DIFLUOROBENZENE	12.49	114	963270	31000.00	PPTV	-0.04
51) D5-CHLOROBENZENE	15.90	117	733722	31000.00	PPTV	-0.02
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.33	174	304281	28899.77	PPTV	-0.02
Spiked Amount 31250.000	Range 50 - 150		Recovery = 92.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.54	85	22562	343.75	PPTV	100
3) Propene	4.43	41	3908	N.D.		
4) Chloromethane	5.05	50	14787	519.48	PPTV	100
5) Freon 114	4.97	135	40	N.D.		
6) Vinyl Chloride	5.30	62	2109	N.D.		
7) 1,3-Butadiene	5.43	39	100	N.D.		
8) Bromomethane	6.07	94	53	N.D.		
9) Chloroethane	6.55	64	47	N.D.		
10) Trichlorofluoromethane	6.78	101	9386	N.D.		
11) Bromoethene	0.00	106	0	N.D.		
12) 1,1-Dichloroethene	0.00	61	0	N.D.		
13) Acetone	8.96	43	114299	2077.58	PPTV	99
14) Isopropyl Alcohol	8.78	45	9174	N.D.		
15) Carbon Disulfide	7.87	76	4037	N.D.		
16) Methylene Chloride	8.84	84	2622	N.D.		
17) Freon 113	7.93	151	2879	N.D.		
18) 3-chloro-1-propene	8.70	41	253	N.D.		
19) t-1,2-Dichloroethene	9.10	61	694	N.D.		
20) Methyl tert-butyl ether	9.34	73	799	N.D.		
21) Hexane	9.24	57	548	N.D.		
22) 1,1-Dichloroethane	10.00	63	225	N.D.		
23) Vinyl Acetate	10.43	43	39	N.D.		
24) c-1,2-Dichloroethene	10.73	96	6488	308.83	PPTV	96
25) Ethyl Acetate	11.21	43	1077	N.D.		
26) 2-Butanone	11.47	43	16160	222.14	PPTV	98
27) Chloroform	11.07	83	586	N.D.		
28) Tetrahydrofuran	11.36	42	144	N.D.		
29) 2,2,4-Trimethylpentane	11.70	57	47	N.D.		
30) 1,2-Dichloroethane	12.04	62	442	N.D.		
31) 1,1,1-Trichloroethane	11.36	97	204	N.D.		
32) Cyclohexane	11.03	56	41	N.D.		
33) Carbon Tetrachloride	11.27	117	3027	N.D.		
34) Benzene	11.81	78	1279	N.D.		
35) Heptane	11.77	43	669	N.D.		
37) TLPH	15.90	TIC	14383288m	85226.98	PPTV	
38) 1,2-Dichloropropane	13.10	63	160	N.D.		
39) Trichloroethene	12.48	130	3297	N.D.		
40) 1,4-Dioxane	13.39	88	202	N.D.		
41) Bromodichloromethane	13.14	83	119	N.D.		
42) c-1,3-Dichloropropene	13.91	75	83	N.D.		
43) t-1,3-Dichloropropene	14.59	75	865	N.D.		
44) 1,1,2-Trichloroethane	14.79	97	316	N.D.		
45) Methyl Isobutyl Ketone	14.54	43	2285	N.D.		
46) Toluene	14.15	92	1062	N.D.		
47) 2-Hexanone	15.49	43	6962	N.D.		
48) 1,2-Dibromoethane	15.33	107	509	N.D.		
49) Tetrachloroethene	14.61	166	820	N.D.		
50) Dibromochloromethane	15.01	127	265	N.D.		
52) Chlorobenzene	15.92	112	1047	N.D.		
53) Ethylbenzene	15.91	106	757	N.D.		
54) m-Xylene & p-Xylene	16.07	106	2178	N.D.		
55) Styrene	16.65	104	912	N.D.		
56) o-Xylene	16.60	106	1100	N.D.		
57) Bromoform	16.72	173	526	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ020.D Vial: 20
Acq On : 16 Nov 2020 2:47 pm Operator: rgg
Sample : ad07766-01 Inst : OVGCMS7
Misc : 1.31 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 16:01 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58)	1,1,2,2-Tetrachloroethane	17.52	83	1177	N.D.		
59)	Bromofluorobenzene	17.33	174	304281	28899.77	PPTV	97
61)	4-ethyltoluene	17.58	105	2859	N.D.		
62)	1,3,5-Trimethylbenzene	17.67	105	2811	N.D.		
63)	1,2,4-Trimethylbenzene	18.17	105	3445	N.D.		
64)	1,3-Dichlorobenzene	18.63	146	905	N.D.		
65)	1,4-Dichlorobenzene	18.74	146	812	N.D.		
66)	Benzyl Chloride	19.03	91	737	N.D.		
67)	1,2-Dichlorobenzene	19.29	146	995	N.D.		
68)	1,2,4-Trichlorobenzene	21.21	180	785	N.D.		
69)	Hexachlorobutadiene	21.13	225	2513	248.81	PPTV	93

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ021.D Vial: 21
Acq On : 16 Nov 2020 3:33 pm Operator: rgg
Sample : ad07766-02 Inst : OVGCMS7
Misc : 1.30 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 16:05 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	10.99	130	281345	31000.00 PPTV	-0.05
36) 1,4-DIFLUOROBENZENE	12.49	114	933553	31000.00 PPTV	-0.04
51) D5-CHLOROBENZENE	15.90	117	712888	31000.00 PPTV	-0.02
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.33	174	296834	29016.39 PPTV	-0.02
Spiked Amount 31250.000	Range 50 - 150		Recovery = 92.85%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.55	85	23687	374.26 PPTV	100
3) Propene	4.42	41	5297	N.D.	
4) Chloromethane	5.06	50	14918	543.50 PPTV	100
5) Freon 114	4.96	135	289	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	5.44	39	206	N.D.	
8) Bromomethane	6.20	94	52	N.D.	
9) Chloroethane	6.53	64	39	N.D.	
10) Trichlorofluoromethane	6.78	101	9699	N.D.	
11) Bromoethene	0.00	106	0	N.D.	
12) 1,1-Dichloroethene	0.00	61	0	N.D.	
13) Acetone	8.96	43	132634	2500.15 PPTV	99
14) Isopropyl Alcohol	8.78	45	14270	309.52 PPTV #	91
15) Carbon Disulfide	7.87	76	3466	N.D.	
16) Methylene Chloride	8.84	84	3143	N.D.	
17) Freon 113	7.93	151	1671	N.D.	
18) 3-chloro-1-propene	8.73	41	134	N.D.	
19) t-1,2-Dichloroethene	0.00	61	0	N.D.	
20) Methyl tert-butyl ether	9.33	73	673	N.D.	
21) Hexane	9.24	57	770	N.D.	
22) 1,1-Dichloroethane	10.02	63	78	N.D.	
23) Vinyl Acetate	10.37	43	1135	N.D.	
24) c-1,2-Dichloroethene	10.73	96	41	N.D.	
25) Ethyl Acetate	0.00	43	0	N.D. d	
26) 2-Butanone	11.46	43	29918	426.50 PPTV	99
27) Chloroform	11.06	83	671	N.D.	
28) Tetrahydrofuran	11.30	42	2273	N.D.	
29) 2,2,4-Trimethylpentane	11.63	57	1161	N.D.	
30) 1,2-Dichloroethane	12.04	62	409	N.D.	
31) 1,1,1-Trichloroethane	11.34	97	81	N.D.	
32) Cyclohexane	11.05	56	121	N.D.	
33) Carbon Tetrachloride	11.27	117	3160	N.D.	
34) Benzene	11.87	78	233	N.D.	
35) Heptane	11.79	43	96	N.D.	
37) TLPH	15.90	TIC	14118127m	86318.74 PPTV	
38) 1,2-Dichloropropane	13.10	63	278	N.D.	
39) Trichloroethene	12.49	130	95	N.D.	
40) 1,4-Dioxane	13.39	88	308	N.D.	
41) Bromodichloromethane	13.14	83	226	N.D.	
42) c-1,3-Dichloropropene	13.89	75	161	N.D.	
43) t-1,3-Dichloropropene	14.65	75	218	N.D.	
44) 1,1,2-Trichloroethane	14.78	97	319	N.D.	
45) Methyl Isobutyl Ketone	14.54	43	5051	N.D.	
46) Toluene	14.15	92	1942	N.D.	
47) 2-Hexanone	0.00	43	0	N.D. d	
48) 1,2-Dibromoethane	15.34	107	525	N.D.	
49) Tetrachloroethene	14.60	166	915	N.D.	
50) Dibromochloromethane	15.01	127	276	N.D.	
52) Chlorobenzene	15.92	112	1262	N.D.	
53) Ethylbenzene	15.92	106	879	N.D.	
54) m-Xylene & p-Xylene	16.07	106	2656	N.D.	
55) Styrene	16.65	104	1077	N.D.	
56) o-Xylene	16.59	106	1240	N.D.	
57) Bromoform	16.73	173	609	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111520\207KJ021.D Vial: 21
Acq On : 16 Nov 2020 3:33 pm Operator: rgg
Sample : ad07766-02 Inst : OVGCMS7
Misc : 1.30 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 16:05 2020 Quant Results File: 111020.RES

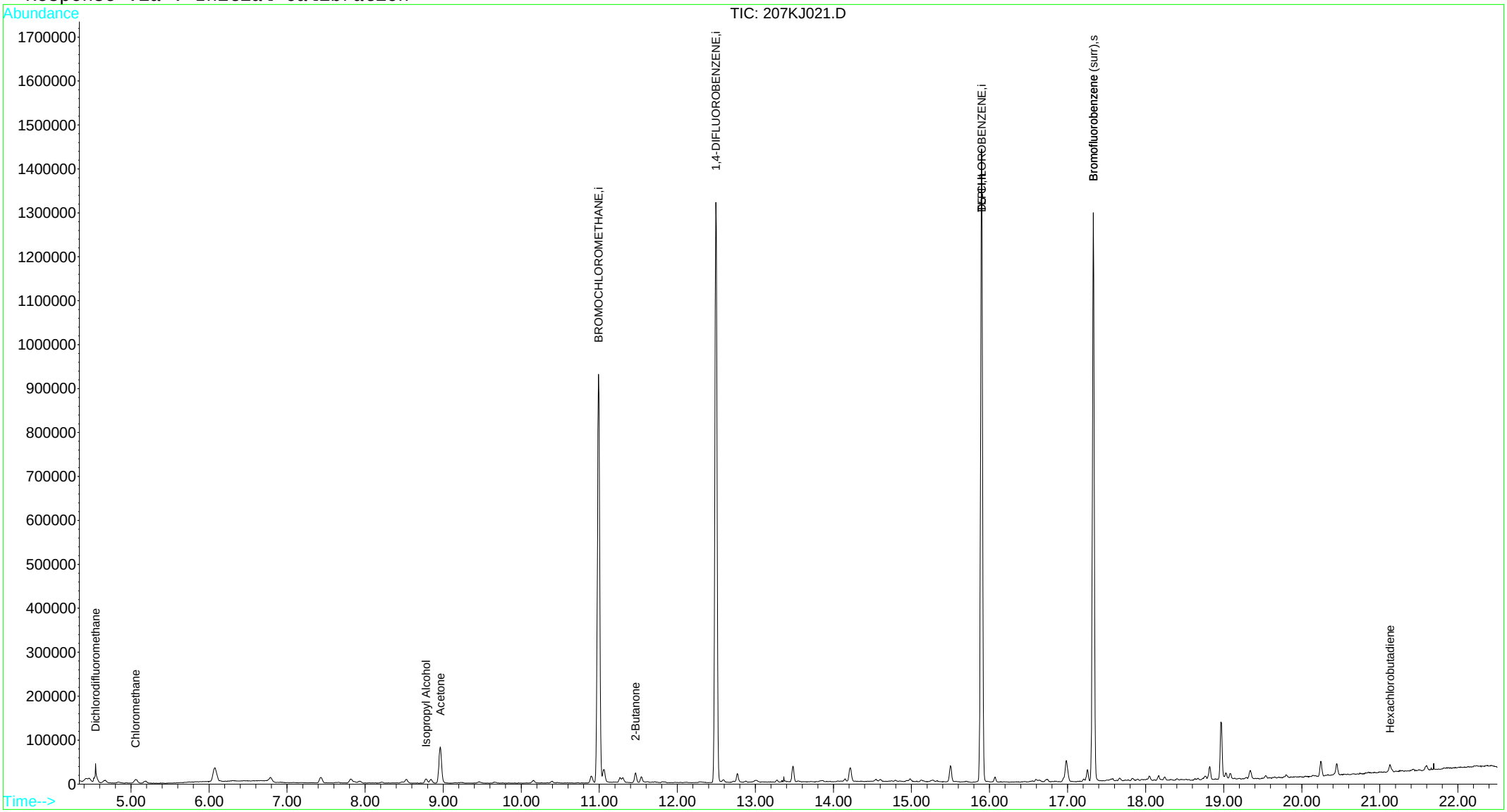
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.52	83	1166	N.D.		
59) Bromofluorobenzene	17.33	174	296834	29016.39	PPTV	99
61) 4-ethyltoluene	17.58	105	3473	N.D.		
62) 1,3,5-Trimethylbenzene	17.67	105	2991	N.D.		
63) 1,2,4-Trimethylbenzene	18.17	105	3950	N.D.		
64) 1,3-Dichlorobenzene	18.63	146	843	N.D.		
65) 1,4-Dichlorobenzene	18.74	146	852	N.D.		
66) Benzyl Chloride	19.07	91	191	N.D.		
67) 1,2-Dichlorobenzene	19.29	146	956	N.D.		
68) 1,2,4-Trichlorobenzene	21.21	180	668	N.D.		
69) Hexachlorobutadiene	21.13	225	2522	256.99	PPTV	95

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111520\207KJ021.D Vial: 21
Acq On : 16 Nov 2020 3:33 pm Operator: rgg
Sample : ad07766-02 Inst : OVGCMS7
Misc : 1.30 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 16:05 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



ENVIRONMENTAL CONSERVATION LABORATORIES, INC.

SUMMA Canister Pressure Logbook

☐ Cary ☐ Jacksonville ☑ ~~Orlando~~

Instrument ID: N/A

SUMMA Can ID#	Sample ID#	Initial Pressure (psia)	Final Pressure (psia)	Dilution Factor (F.P./I.P.)	Analyst	Date	Comments
5611	AD05300-02	10.23	16.99	1.66	NC	8/28/20	
5125	AD05467-01	15.27	18.10	1.19	RS	9/2/20	
5604	AD05467-02	14.17	17.87	1.26	RS	9/2/20	
JS 068	AD05339-01	10.66	17.85	1.67	RS	9/2/20	
JS-070	AD05339-02	13.20	17.94	1.36	RS	9/2/20	
JS-001	AD05491-01	13.20	18.05	1.37	RS	9/4/20	
JS-047	AD05491-02	13.48	18.40	1.36	RS	9/4/20	
JS-080	AD05968-01	13.45	17.87	1.33	RS	9/14/20	
JS-078	AD05968-02	13.44	18.25	1.36	RS	9/14/20	
JS-061	AD07081-03	13.60	17.32	1.27	RS	10/22/20	
JS-034	AD06767-04	13.38	17.94	1.34	RS	10/22/20	
JS-017	AD06767-05	12.46	17.82	1.43	RS	10/22/20	
JS-014	AD07081-01	11.99	17.26	1.44	RS	10/22/20	
JS-060	AD06767-06	12.16	17.86	1.47	RS	10/22/20	
5610	AD07114-01	14.31	18.02	1.26	RS	10/23/20	
JMS001	AD06940-01	13.05	18.10	1.39	RS	11/03/20	
JMS004	AD06940-03	12.94	18.16	1.40	RS	11/03/20	
JMS002	AD06940-02	13.26	18.24	1.38	RS	11/03/20	
JMS007	AD06940-04	13.11	18.25	1.39	RS	11/03/20	
JS068	AD07766-01	13.93	18.20	1.31	RS	11/16/20	

ENVIRONMENTAL CONSERVATION LABORATORIES, INC.

SUMMA Canister Pressure Logbook

☐ Cary ☐ Jacksonville ☑ Orlando

Instrument ID: N/A

SUMMA Can ID#	Sample ID#	Initial Pressure (psia)	Final Pressure (psia)	Dilution Factor (F.P./I.P.)	Analyst	Date	Comments
JS-047	AD07766-02	13.72	17.86	1.30	[illegible]	11/16/20	

SUMMA CANISTER CLEANING LOGBOOK

	SUMMA Canister ID / Regulator ID	Initial Leak Check				Final Leak Check				Analysis Date- SUMMA Humid Air Certification (Include Chem Station File ID)	Target Analytes below MRL (DOD-1/2 LOQ) (Yes/No)	Comments
		Pressure (psia)	Date	Time	Analyst	Pressure (psia)	Date	Time	Analyst			
1	JS-070	49.73	10/14	10:30	KS	49.45	10/15	12:20	KS	207JI020 KS 10/15/20	Yes	
2	JS-080	49.73	10/14	10:30	KS	49.45	10/15	12:20	KS	207JI021 KS 10/15/20	Yes	
3	JS-047	48.36	10/20	08:30	KS	47.55	10/21	09:15	KS	207JP003 KS 10/21/20	Yes	
4	JS 068	48.36	10/20	08:30	KS	47.62	10/21	09:15	KS	207JP004 KS 10/21/20	Yes	
5	JS-078	48.36	10/20	08:30	KS	47.67	10/21	09:15	KS	207JP005 KS 10/21/20	Yes	
6	JMS 008										No	Cleanliness Check only - can returned unused.
7	JMS 003	49.88	11/02	11:50	KS	37.30	11/03	12:50	KS			Leak Check only - Leaks
8	JMS 006	49.88	11/02	11:50	KS	48.17	11/03	12:50	KS			Leak Check only
9	4909	48.90	11/05	09:20	KS	47.96	11/06	11:35	KS	207KE019 KS 11/11/20	Yes	
10	5125	48.90	11/05	09:20	KS	47.77	11/06	11:35	KS	207KE020 KS 11/12/20	Yes	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\102120\207JP003.D Vial: 3
Acq On : 21 Oct 2020 9:54 am Operator: rgg
Sample : js047 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 21 10:35 2020 Quant Results File: 100720.RES

Quant Method : C:\HPCHEM\1\METHODS\100720.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2009119)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.01	130	303679	31000.00	PPTV	-0.01
36) 1,4-DIFLUOROBENZENE	12.51	114	1036385	31000.00	PPTV	0.00
51) D5-CHLOROBENZENE	15.91	117	795370	31000.00	PPTV	0.00
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.34	174	339873	30268.90	PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 96.86%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.60	85	122	N.D.		
3) Propene	4.47	41	2371	N.D.		
4) Chloromethane	5.11	50	383	N.D.		
5) Freon 114	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	5.40	39	222	N.D.		
8) Bromomethane	6.18	94	45	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Trichlorofluoromethane	6.83	101	86	N.D.		
11) Bromoethene	0.00	106	0	N.D.		
12) 1,1-Dichloroethene	0.00	61	0	N.D.		
13) Acetone	9.00	43	16331	266.95	PPTV	99
14) Isopropyl Alcohol	8.81	45	21430	356.78	PPTV	95
15) Carbon Disulfide	7.89	76	6396	N.D.		
16) Methylene Chloride	8.87	84	4198	211.76	PPTV	98
17) Freon 113	0.00	151	0	N.D.		
18) 3-chloro-1-propene	8.70	41	559	N.D.		
19) t-1,2-Dichloroethene	0.00	61	0	N.D.		
20) Methyl tert-butyl ether	9.33	73	267	N.D.		
21) Hexane	9.25	57	1409	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	10.38	43	317	N.D.		
24) c-1,2-Dichloroethene	0.00	96	0	N.D.		
25) Ethyl Acetate	11.32	43	3056	N.D.		
26) 2-Butanone	11.49	43	3307	N.D.		
27) Chloroform	11.09	83	258	N.D.		
28) Tetrahydrofuran	11.32	42	813	N.D.		
29) 2,2,4-Trimethylpentane	11.64	57	4523	N.D.		
30) 1,2-Dichloroethane	0.00	62	0	N.D.		
31) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
32) Cyclohexane	11.03	56	695	N.D.		
33) Carbon Tetrachloride	0.00	117	0	N.D.		
34) Benzene	11.83	78	1494	N.D.		
35) Heptane	11.73	43	1144	N.D.		
37) TLPH	0.00	TIC	0	N.D.	d	
38) 1,2-Dichloropropane	13.12	63	37	N.D.		
39) Trichloroethene	12.49	130	37	N.D.		
40) 1,4-Dioxane	13.40	88	88	N.D.		
41) Bromodichloromethane	0.00	83	0	N.D.		
42) c-1,3-Dichloropropene	13.86	75	296	N.D.		
43) t-1,3-Dichloropropene	14.60	75	456	N.D.		
44) 1,1,2-Trichloroethane	14.81	97	48	N.D.		
45) Methyl Isobutyl Ketone	14.57	43	941	N.D.		
46) Toluene	14.16	92	1057	N.D.		
47) 2-Hexanone	15.51	43	1813	N.D.		
48) 1,2-Dibromoethane	15.35	107	185	N.D.		
49) Tetrachloroethene	14.62	166	62	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\102120\207JP003.D Vial: 3
Acq On : 21 Oct 2020 9:54 am Operator: rgg
Sample : 18067 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 21 10:35 2020 Quant Results File: 100720.RES

Quant Method : C:\HPCHEM\1\METHODS\100720.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2009119)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

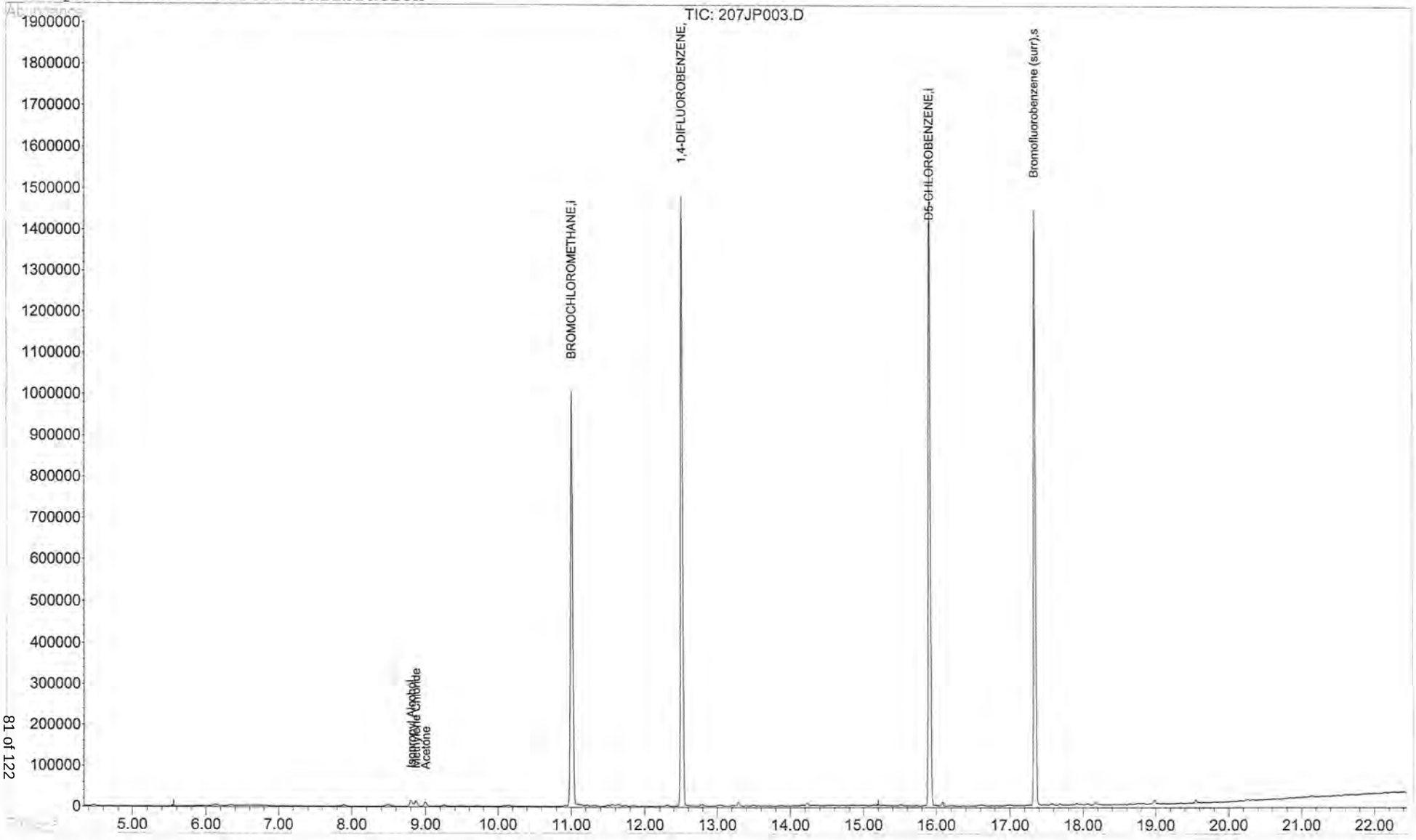
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50) Dibromochloromethane	15.03	127	43	N.D.		
52) Chlorobenzene	15.93	112	334	N.D.		
53) Ethylbenzene	15.92	106	720	N.D.		
54) m-Xylene & p-Xylene	16.08	106	1900	N.D.		
55) Styrene	16.66	104	461	N.D.		
56) o-Xylene	16.61	106	617	N.D.		
57) Bromoform	16.74	173	39	N.D.		
58) 1,1,2,2-Tetrachloroethane	17.53	83	511	N.D.		
59) Bromofluorobenzene	17.34	174	339873	30268.90	PPTV	99
61) 4-ethyltoluene	17.58	105	3472	N.D.		
62) 1,3,5-Trimethylbenzene	17.68	105	1808	N.D.		
63) 1,2,4-Trimethylbenzene	18.18	105	3363	N.D.		
64) 1,3-Dichlorobenzene	18.65	146	381	N.D.		
65) 1,4-Dichlorobenzene	18.75	146	483	N.D.		
66) Benzyl chloride	19.04	91	358	N.D.		
67) 1,2-Dichlorobenzene	19.31	146	455	N.D.		
68) 1,2,4-Trichlorobenzene	21.22	180	85	N.D.		
69) Hexachlorobutadiene	21.15	225	236	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\102120\207JP003.D Vial: 3
Acq On : 21 Oct 2020 9:54 am Operator: rgg
Sample : js047 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 21 10:35 2020 Quant Results File: 100720.RES

Method : C:\HPCHEM\1\METHODS\100720.M (RTE Integrator)
Title : Analysis of VOCs in air by VOCMS-07 (LIMS2009119)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\102120\207JP004.D Vial: 4
Acq On : 21 Oct 2020 10:38 am Operator: rgg
Sample : js068 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 21 11:15 2020 Quant Results File: 100720.RES

Quant Method : C:\HPCHEM\1\METHODS\100720.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2009119)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.01	130	296080	31000.00 PPTV	-0.01
36) 1,4-DIFLUOROBENZENE	12.51	114	1013995	31000.00 PPTV	0.00
51) D5-CHLOROBENZENE	15.91	117	780022	31000.00 PPTV	0.00
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.34	174	334032	30334.05 PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery =	97.07%	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.59	85	190	N.D.	
3) Propene	4.44	41	317	N.D.	
4) Chloromethane	5.13	50	369	N.D.	
5) Freon 114	0.00	135	0	N.D.	
6) Vinyl Chloride	0.00	62	0	N.D.	
7) 1,3-Butadiene	5.40	39	337	N.D.	
8) Bromomethane	6.19	94	187	N.D.	
9) Chloroethane	6.52	64	36	N.D.	
10) Trichlorofluoromethane	6.81	101	36	N.D.	
11) Bromoethene	0.00	106	0	N.D.	
12) 1,1-Dichloroethene	0.00	61	0	N.D.	
13) Acetone	8.99	43	16240	272.27 PPTV	98
14) Isopropyl Alcohol	8.80	45	5646	N.D.	
15) Carbon Disulfide	7.91	76	6051	N.D.	
16) Methylene Chloride	8.87	84	4214	218.02 PPTV	96
17) Freon 113	0.00	151	0	N.D.	
18) 3-Chloro-1-propene	8.73	41	202	N.D.	
19) t-1,2-Dichloroethene	0.00	61	0	N.D.	
20) Methyl tert-butyl ether	9.31	73	566	N.D.	
21) Hexane	9.26	57	1380	N.D.	
22) 1,1-Dichloroethane	0.00	63	0	N.D.	
23) Vinyl Acetate	10.38	43	261	N.D.	
24) c-1,2-Dichloroethene	10.76	96	42	N.D.	
25) Ethyl Acetate	11.13	43	1349	N.D.	
26) 2-Butanone	11.49	43	3712	N.D.	
27) Chloroform	11.08	83	105	N.D.	
28) Tetrahydrofuran	11.33	42	1188	N.D.	
29) 2,2,4-Trimethylpentane	11.63	57	4127	N.D.	
30) 1,2-Dichloroethane	0.00	62	0	N.D.	
31) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
32) Cyclohexane	11.03	56	486	N.D.	
33) Carbon Tetrachloride	0.00	117	0	N.D.	
34) Benzene	11.82	78	1814	N.D.	
35) Heptane	11.73	43	1189	N.D.	
37) TLPH	0.00	TIC	0	N.D. d	
38) 1,2-Dichloropropane	0.00	63	0	N.D.	
39) Trichloroethene	0.00	130	0	N.D.	
40) 1,4-Dioxane	13.40	88	51	N.D.	
41) Bromodichloromethane	13.16	83	40	N.D.	
42) c-1,3-Dichloropropene	13.87	75	357	N.D.	
43) t-1,3-Dichloropropene	14.60	75	290	N.D.	
44) 1,1,2-Trichloroethane	14.80	97	36	N.D.	
45) Methyl Isobutyl Ketone	14.56	43	1308	N.D.	
46) Toluene	14.15	92	864	N.D.	
47) 2-Hexanone	15.50	43	1508	N.D.	
48) 1,2-Dibromoethane	15.35	107	124	N.D.	
49) Tetrachloroethene	14.61	166	94	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\102120\207JP004.D Vial: 4
Acq On : [illegible] 2020 10:38 am Operator: rgg
Sample : [illegible] Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: [illegible] 21 11:15 2020 Quant Results File: 100720.RES

Quant Method : C:\HPCHEM\1\METHODS\100720.M (RTE Integrator)
Title : [illegible]alysis of VOCs in air by VGCMS-07 (LIMS2009119)
Last Update : [illegible]u Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : \IR19JW

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	Dibro[illegible]romethane	15.02	127	37	N.D.		
52)	Chl[illegible]ne	15.94	112	359	N.D.		
53)	Ethyl[illegible]ue	15.92	106	442	N.D.		
54)	m-Xylene & p-Xylene	16.08	106	1432	N.D.		
55)	Styrene	16.66	104	409	N.D.		
56)	o-Xylene	16.61	106	576	N.D.		
57)	Bromoform	16.74	173	44	N.D.		
58)	1,1,2,2-Tetrachloroethane	17.53	83	598	N.D.		
59)	Bromo[illegible]benzene	17.34	174	334032	30334.05	PPTV	99
61)	4-Ethyltoluene	17.59	105	1905	N.D.		
62)	1,3,5-Trimethylbenzene	17.68	105	1435	N.D.		
63)	1,2,4-Trimethylbenzene	18.18	105	2033	N.D.		
64)	1,3-Dichlorobenzene	18.64	146	443	N.D.		
65)	1,4-Dichlorobenzene	18.74	146	409	N.D.		
66)	Benzyl chloride	19.04	91	370	N.D.		
67)	1,2-Dichlorobenzene	19.30	146	477	N.D.		
68)	1,2,4-Trichlorobenzene	21.23	180	41	N.D.		
69)	Hexachlorobutadiene	21.14	225	501	N.D.		

(#) = qualifier out of range (m) = manual integration
207JP004.D 100720.M Wed Oct 21 11:15:38 2020

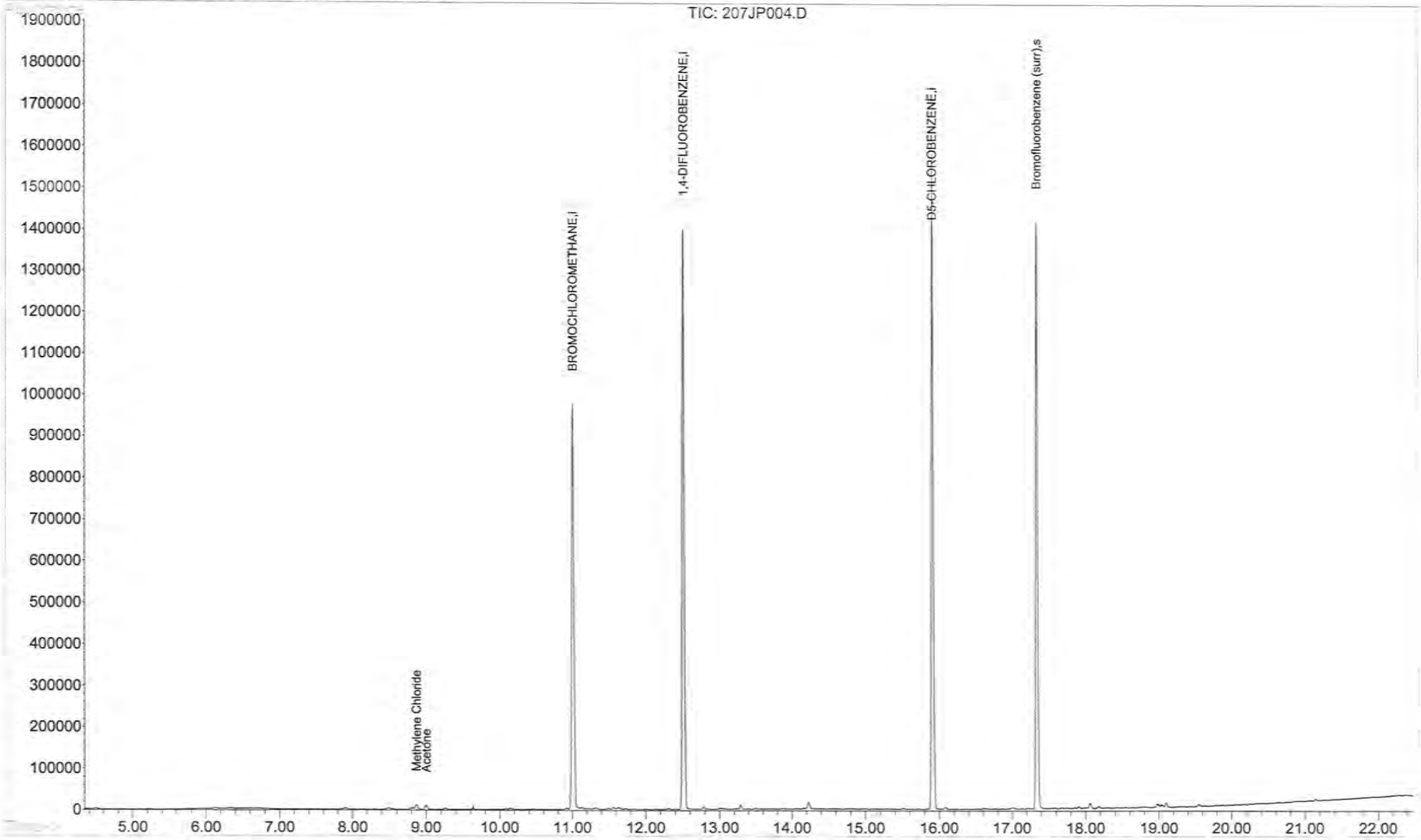
Quantitation Report

Data File : C:\HPCHEM\1\DATA\102120\207JP004.D
Acq On : 21 Oct 2020 10:38 am
Sample : js068
Misc :
MS Integration Params: RTEINT.P
Quant Time: Oct 21 11:15 2020

Vial: 4
Operator: rgg
Inst : OVGCMS7
Multiplr: 1.00

Quant Results File: 100720.RES

Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA63477

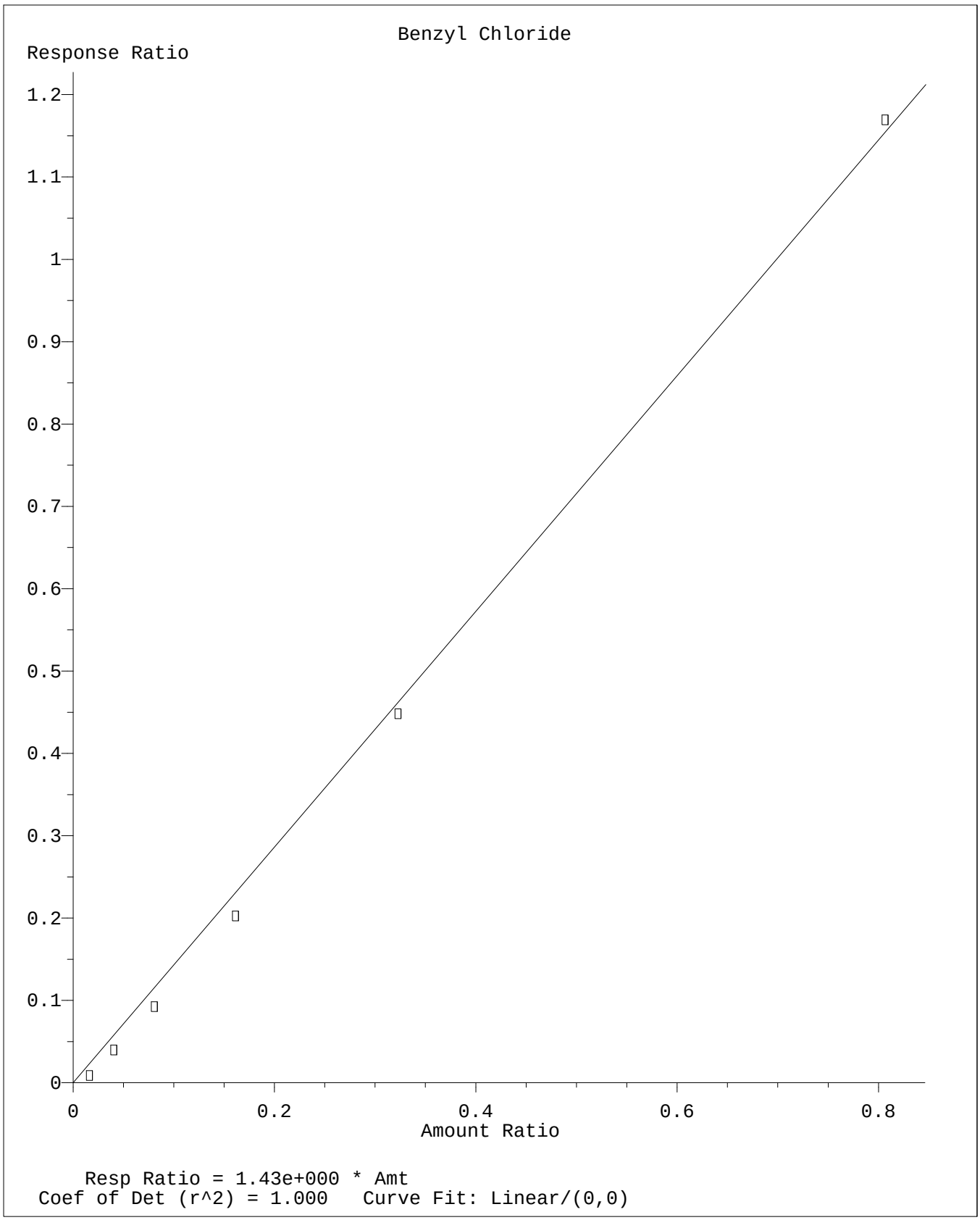
Instrument: OVGCMS7

Calibration ID: 2011052 **Printed: 11/12/2020 11:12:00AM**

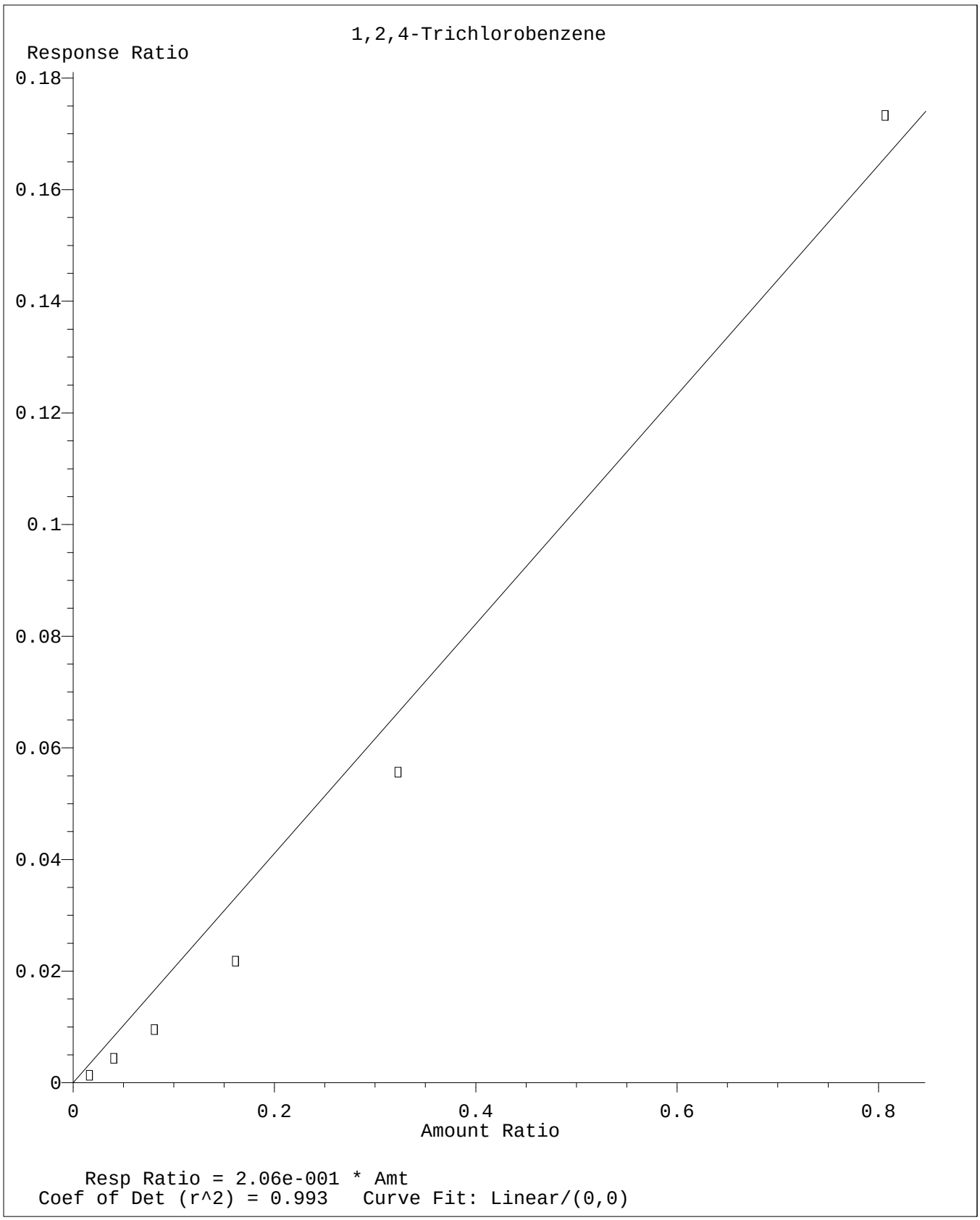
Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA63477-TUN1	QC		1		A0K0796			
AA63477-CAL1	QC		2		A0K0799	A0K0797		
AA63477-CAL2	QC		3		A0K0800	A0K0797		
AA63477-CAL3	QC		4		A0K0801	A0K0797		
AA63477-CAL4	QC		5		A0K0802	A0K0797		
AA63477-CAL5	QC		6		A0K0803	A0K0797		
AA63477-CAL6	QC		7		A0K0804	A0K0797		
AA63477-CAL7	QC		8		A0K0805	A0K0797		
AA63477-CAL8	QC		9		A0K0806	A0K0797		
AA63477-CAL9	QC		10		A0K0807	A0K0797		
AA63477-SCV1	QC		11		A0K0808	A0K0797		

Samples Loaded By Date

Data Processed By Date

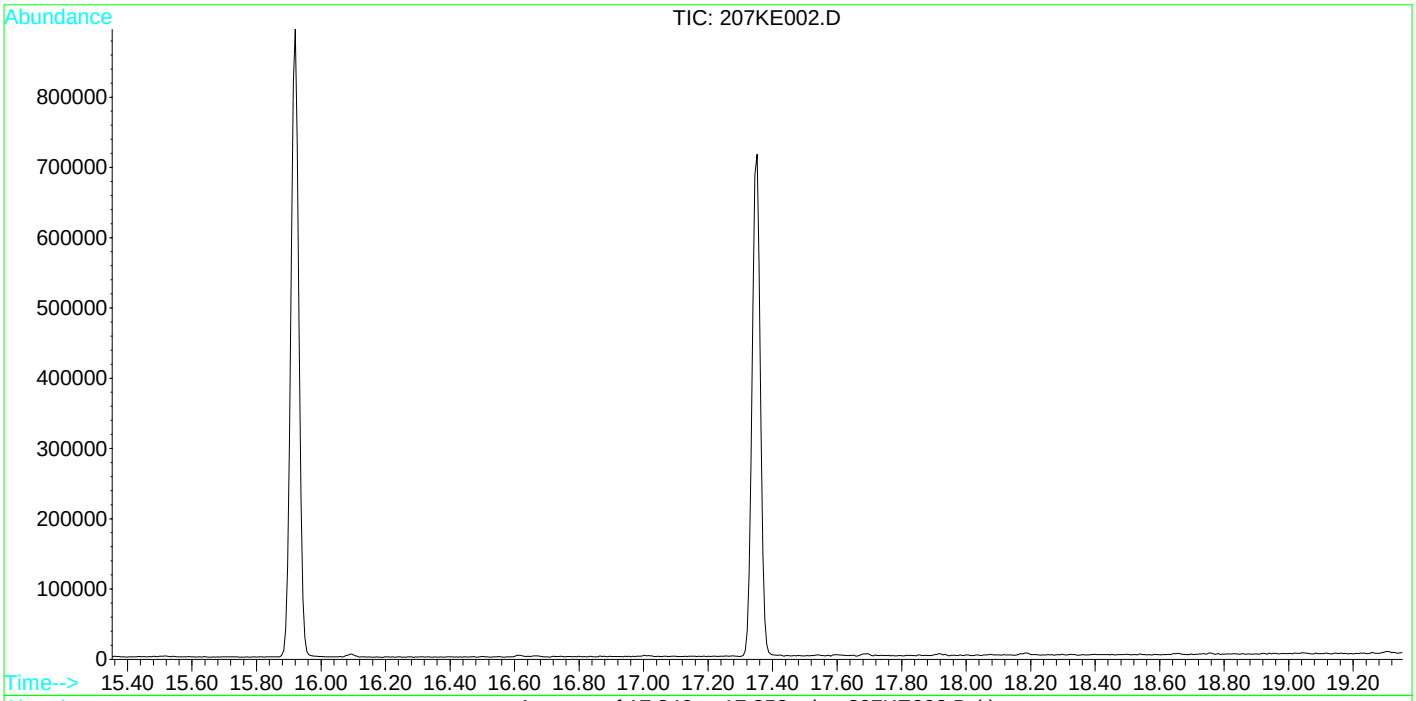


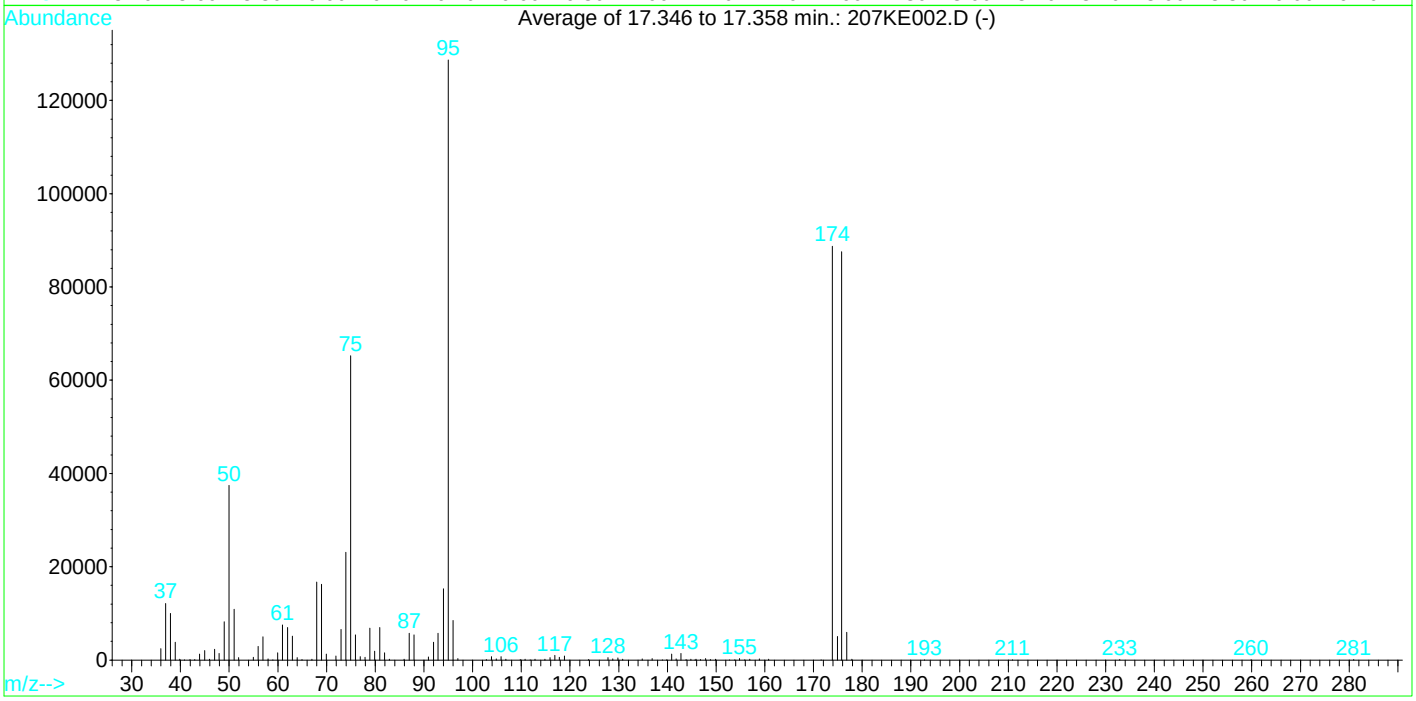
Method Name: C:\HPCHEM\1\METHODS\111020.M
Calibration Table Last Updated: Wed Nov 11 10:01:34 2020



Method Name: C:\HPCHEM\1\METHODS\111020.M
Calibration Table Last Updated: Wed Nov 11 10:01:34 2020

Data File : C:\HPCHEM\1\DATA\111020\207KE002.D Vial: 2
Acq On : 10 Nov 2020 12:33 pm Operator: rgg
Sample : tun1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)





AutoFind: Scans 2164, 2165, 2166; Background Corrected with Scan 2155

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.1	37416	PASS
75	95	30	60	50.7	65273	PASS
95	95	100	100	100.0	128664	PASS
96	95	5	9	6.6	8455	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	68.9	88712	PASS
175	174	5	9	5.7	5085	PASS
176	174	95	101	98.7	87555	PASS
177	176	5	9	6.8	5930	PASS

Compound List Report OVGCMS7

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
Total Cpnds : 69

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	BROMOCHLOROMETHANE	130	11.04	1.000	A	2	A	B
2		Dichlorodifluoromethane	85	4.58	0.415	A	2	A	B
3		Propene	41	4.45	0.403	A	2	A	B
4		Chloromethane	50	5.08	0.461	A	1	A	B
5		Freon 114	135	4.99	0.452	A	1	A	B
6		Vinyl Chloride	62	5.35	0.484	A	1	A	B
7		1,3-Butadiene	39	5.42	0.491	A	2	A	B
8		Bromomethane	94	6.18	0.560	A	1	A	B
9		Chloroethane	64	6.51	0.590	A	1	A	B
10		Trichlorofluoromethane	101	6.84	0.620	A	1	A	B
11		Bromoethene	106	6.76	0.613	A	1	A	B
12	M	1,1-Dichloroethene	61	7.88	0.714	A	2	A	B
13		Acetone	43	8.99	0.815	A	1	A	B
14		Isopropyl Alcohol	45	8.80	0.797	A	2	A	B
15		Carbon Disulfide	76	7.92	0.718	A	1	A	B
16		Methylene Chloride	84	8.89	0.805	A	2	A	B
17		Freon 113	151	7.98	0.723	A	2	A	B
18		3-chloro-1-propene	41	8.73	0.791	A	2	A	B
19		t-1,2-Dichloroethene	61	9.16	0.829	A	2	A	B
20		Methyl tert-butyl ether	73	9.35	0.847	A	1	A	B
21		Hexane	57	9.29	0.841	A	3	A	R
22		1,1-Dichloroethane	63	10.06	0.912	A	1	A	B
23		Vinyl Acetate	43	10.39	0.942	A	1	A	B
24		c-1,2-Dichloroethene	96	10.77	0.976	A	2	A	B
25		Ethyl Acetate	43	11.24	1.019	A	1	A	B
26		2-Butanone	43	11.49	1.041	A	1	A	B
27		Chloroform	83	11.10	1.006	A	1	A	B
28		Tetrahydrofuran	42	11.34	1.027	A	2	A	B
29		2,2,4-Trimethylpentane	57	11.66	1.057	A	2	A	B
30		1,2-Dichloroethane	62	12.08	1.094	A	1	A	B
31		1,1,1-Trichloroethane	97	11.40	1.033	A	2	A	B
32		Cyclohexane	56	11.06	1.002	A	3	A	B
33		Carbon Tetrachloride	117	11.31	1.025	A	1	A	B
34	M	Benzene	78	11.85	1.074	A	1	A	B
35		Heptane	43	11.75	1.065	A	3	A	B
36	I	1,4-DIFLUOROBENZENE	114	12.53	1.000	A	2	A	B
37	h	TLPH	TIC	14.18	1.132	A	0	A	B
38		1,2-Dichloropropane	63	13.14	1.048	A	1	A	B
39	M	Trichloroethene	130	12.52	0.999	A	2	A	B
40		1,4-Dioxane	88	13.40	1.070	A	2	A	B
41		Bromodichloromethane	83	13.17	1.051	A	2	A	B
42		c-1,3-Dichloropropene	75	13.89	1.109	A	2	A	B
43		t-1,3-Dichloropropene	75	14.62	1.167	A	2	A	B
44		1,1,2-Trichloroethane	97	14.81	1.182	A	2	A	B
45		Methyl Isobutyl Ketone	43	14.57	1.163	A	3	A	B
46	M	Toluene	92	14.18	1.132	A	1	A	B
47		2-Hexanone	43	15.51	1.238	A	3	A	B
48		1,2-Dibromoethane	107	15.36	1.226	A	1	A	B
49		Tetrachloroethene	166	14.63	1.168	A	3	A	B
50		Dibromochloromethane	127	15.04	1.201	A	3	A	B
51	I	D5-CHLOROBENZENE	117	15.92	1.000	A	2	A	B
52	M	Chlorobenzene	112	15.95	1.002	A	1	A	B
53		Ethylbenzene	106	15.93	1.001	A	1	A	R
54		m-Xylene & p-Xylene	106	16.10	1.011	A	1	A	B
55		Styrene	104	16.67	1.047	A	1	A	B
56		o-Xylene	106	16.62	1.044	A	1	A	B
57		Bromoform	173	16.75	1.052	A	2	A	B
58		1,1,2,2-Tetrachloroethane	83	17.54	1.102	A	2	A	B
59		Bromofluorobenzene	174	17.35	1.090	A	3	A	B
60	S	Bromofluorobenzene (surr)	174	17.35	1.090	A	3	A	B
61		4-ethyltoluene	105	17.60	1.105	A	1	A	B
62		1,3,5-Trimethylbenzene	105	17.69	1.111	A	1	A	B
63		1,2,4-Trimethylbenzene	105	18.19	1.142	A	1	A	B
64		1,3-Dichlorobenzene	146	18.66	1.172	A	2	A	B
65		1,4-Dichlorobenzene	146	18.76	1.178	A	2	A	B
66		Benzyl Chloride	91	19.06	1.197	LO	2	A	B
67		1,2-Dichlorobenzene	146	19.31	1.213	A	2	A	B
68		1,2,4-Trichlorobenzene	180	21.23	1.333	LO	2	A	B
69		Hexachlorobutadiene	225	21.15	1.329	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin

```
#Qual = number of qualifiers
  A/H = Area or Height
ID  R = R.T.  B = R.T. & Q  Q = Qvalue L = Largest  A = All
--------------------------------------------------------------------------------
          111020.M     Thu Nov 12 11:12:48 2020
```

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE004.D Vial: 4
Acq On : 10 Nov 2020 1:55 pm Operator: rgg
Sample : aa63477-cal1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 14:31 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.02	130	321834	31000.00 PPTV	0.00
36) 1,4-DIFLUOROBENZENE	12.52	114	1066269	31000.00 PPTV	0.00
51) D5-CHLOROBENZENE	15.92	117	822344	31000.00 PPTV	0.00
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.35	174	342510	29503.18 PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 94.41%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.60	85	10535	N.D.	
3) Propene	4.48	41	8028	257.47 PPTV	88
4) Chloromethane	5.12	50	4501	N.D.	
5) Freon 114	4.99	135	5199	N.D.	
6) Vinyl Chloride	5.36	62	3925	N.D.	
7) 1,3-Butadiene	5.43	39	4783	N.D.	
8) Bromomethane	6.18	94	4624	N.D.	
9) Chloroethane	6.52	64	2193	N.D.	
10) Trichlorofluoromethane	6.84	101	8616	N.D.	
11) Bromoethene	6.77	106	3099	N.D.	
12) 1,1-Dichloroethene	7.87	61	6538	N.D.	
13) Acetone	9.01	43	12920	N.D.	
14) Isopropyl Alcohol	8.82	45	11010	N.D.	
15) Carbon Disulfide	7.92	76	9642	N.D.	
16) Methylene Chloride	8.88	84	3997	N.D.	
17) Freon 113	7.97	151	4426	N.D.	
18) 3-chloro-1-propene	8.72	41	7224	N.D.	
19) t-1,2-Dichloroethene	9.14	61	5344	N.D.	
20) Methyl tert-butyl ether	9.37	73	9276	N.D.	
21) Hexane	9.28	57	5511	N.D.	
22) 1,1-Dichloroethane	10.05	63	6654	N.D.	
23) Vinyl Acetate	10.39	43	13322	N.D.	
24) c-1,2-Dichloroethene	10.76	96	3303	N.D.	
25) Ethyl Acetate	11.24	43	12511	N.D.	
26) 2-Butanone	11.50	43	11017	N.D.	
27) Chloroform	11.09	83	6906	N.D.	
28) Tetrahydrofuran	11.36	42	5333	N.D.	
29) 2,2,4-Trimethylpentane	11.65	57	17171	N.D.	
30) 1,2-Dichloroethane	12.07	62	5309	N.D.	
31) 1,1,1-Trichloroethane	11.39	97	6935	N.D.	
32) Cyclohexane	11.04	56	5812	N.D.	
33) Carbon Tetrachloride	11.30	117	6592	N.D.	
34) Benzene	11.84	78	9355	N.D.	
35) Heptane	11.74	43	8628	N.D.	
37) TLPH	14.17	TIC	26963	N.D.	
38) 1,2-Dichloropropane	13.13	63	3842	N.D.	
39) Trichloroethene	12.51	130	3710	N.D.	
40) 1,4-Dioxane	13.41	88	1882	N.D.	
41) Bromodichloromethane	13.17	83	6968	N.D.	
42) c-1,3-Dichloropropene	13.88	75	5699	N.D.	
43) t-1,3-Dichloropropene	14.61	75	4151	N.D.	
44) 1,1,2-Trichloroethane	14.81	97	3196	N.D.	
45) Methyl Isobutyl Ketone	14.57	43	10848	N.D.	
46) Toluene	14.17	92	5541	N.D.	
47) 2-Hexanone	15.51	43	8882	N.D.	
48) 1,2-Dibromoethane	15.35	107	4957	N.D.	
49) Tetrachloroethene	14.63	166	4278	N.D.	
50) Dibromochloromethane	15.03	127	4452	N.D.	
52) Chlorobenzene	15.95	112	6775	N.D.	
53) Ethylbenzene	15.93	106	3531	N.D.	
54) m-Xylene & p-Xylene	16.09	106	7992	307.03 PPTV	95
55) Styrene	16.67	104	4434	N.D.	
56) o-Xylene	16.61	106	3843	N.D.	
57) Bromoform	16.75	173	3899	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE004.D Vial: 4
Acq On : 10 Nov 2020 1:55 pm Operator: rgg
Sample : aa63477-cal1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 14:31 2020 Quant Results File: 111020.RES

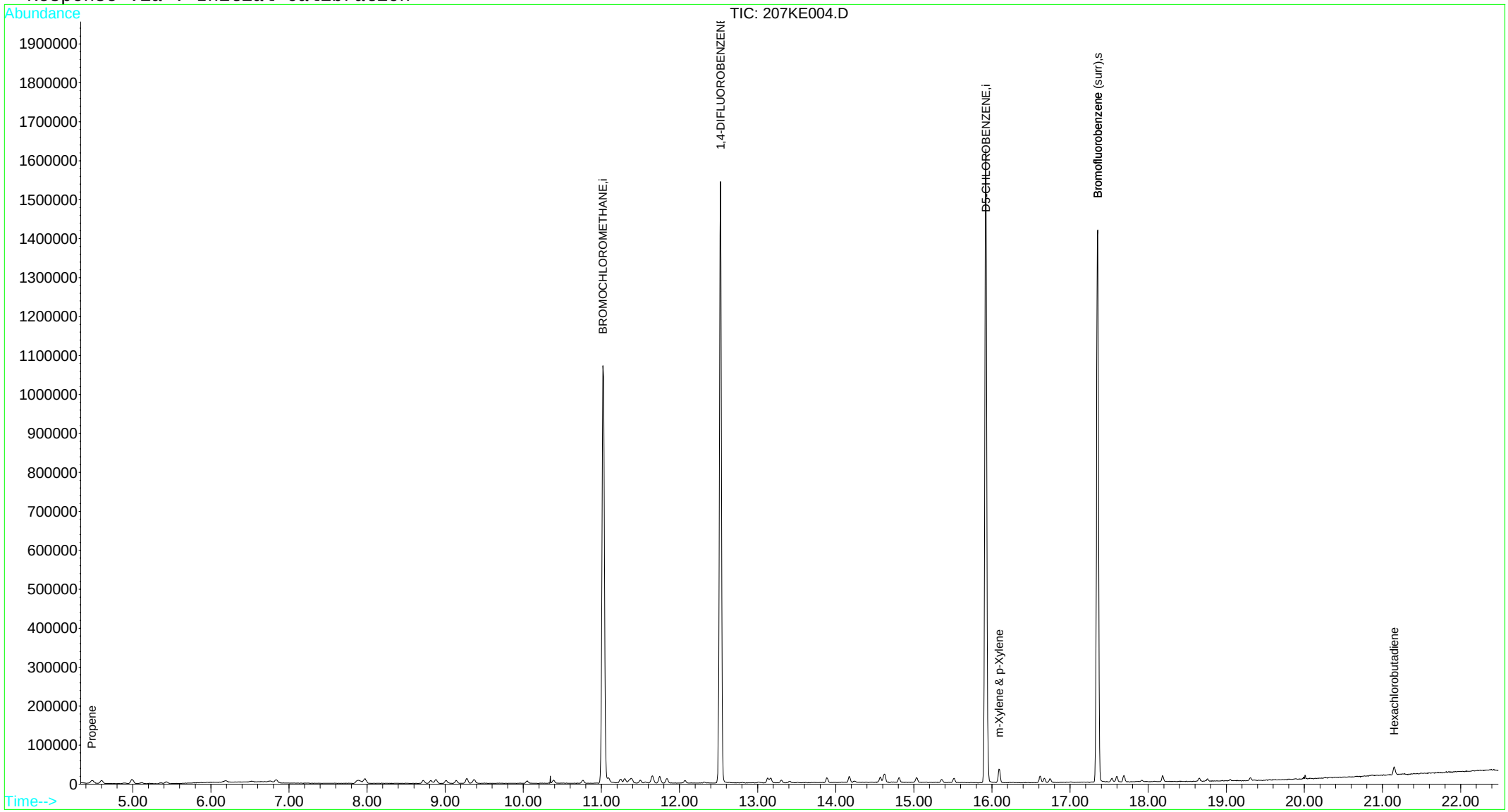
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.53	83	4725	N.D.		
59) Bromofluorobenzene	17.35	174	342510	29503.18	PPTV	99
61) 4-ethyltoluene	17.60	105	9121	N.D.		
62) 1,3,5-Trimethylbenzene	17.69	105	8483	N.D.		
63) 1,2,4-Trimethylbenzene	18.18	105	7473	N.D.		
64) 1,3-Dichlorobenzene	18.65	146	2782	N.D.		
65) 1,4-Dichlorobenzene	18.76	146	2185	N.D.		
66) Benzyl Chloride	19.05	91	2058	N.D.		
67) 1,2-Dichlorobenzene	19.31	146	2268	N.D.		
68) 1,2,4-Trichlorobenzene	21.23	180	667	N.D.		
69) Hexachlorobutadiene	21.16	225	3019	303.91	PPTV	95

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE004.D Vial: 4
Acq On : 10 Nov 2020 1:55 pm Operator: rgg
Sample : aa63477-cal1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 14:31 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE005.D Vial: 5
Acq On : 10 Nov 2020 2:34 pm Operator: rgg
Sample : aa63477-cal2 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:31 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) BROMOCHLOROMETHANE	11.02	130	312759	31000.00	PPTV		0.00
36) 1,4-DIFLUOROBENZENE	12.53	114	1042342	31000.00	PPTV		0.00
51) D5-CHLOROBENZENE	15.92	117	799117	31000.00	PPTV		0.00
System Monitoring Compounds							
60) Bromofluorobenzene (surr)	17.35	174	337817	29944.72	PPTV		0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 95.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.61	85	18726	252.45	PPTV		97
3) Propene	4.48	41	9685	319.63	PPTV		98
4) Chloromethane	5.12	50	7745	256.12	PPTV		97
5) Freon 114	5.00	135	9211	249.60	PPTV		96
6) Vinyl Chloride	5.36	62	6803	253.56	PPTV		99
7) 1,3-Butadiene	5.44	39	8359	260.83	PPTV		90
8) Bromomethane	6.19	94	7957	293.46	PPTV		85
9) Chloroethane	6.51	64	3894	284.44	PPTV		88
10) Trichlorofluoromethane	6.84	101	15881	248.53	PPTV		100
11) Bromoethene	6.76	106	5605	255.81	PPTV		100
12) 1,1-Dichloroethene	7.88	61	11463	244.57	PPTV		97
13) Acetone	9.01	43	19337	306.91	PPTV		98
14) Isopropyl Alcohol	8.82	45	16217	262.15	PPTV		89
15) Carbon Disulfide	7.91	76	16815	245.44	PPTV		92
16) Methylene Chloride	8.89	84	6317	309.40	PPTV		94
17) Freon 113	7.98	151	7701	243.07	PPTV		99
18) 3-chloro-1-propene	8.72	41	11146	227.59	PPTV		96
19) t-1,2-Dichloroethene	9.14	61	9671	245.32	PPTV		99
20) Methyl tert-butyl ether	9.37	73	17152	234.51	PPTV		95
21) Hexane	9.28	57	10087	241.78	PPTV		97
22) 1,1-Dichloroethane	10.05	63	11442	245.68	PPTV		99
23) Vinyl Acetate	10.39	43	23273	232.44	PPTV		99
24) c-1,2-Dichloroethene	10.76	96	5421	238.39	PPTV		99
25) Ethyl Acetate	11.25	43	21985	242.47	PPTV		99
26) 2-Butanone	11.50	43	19728	247.43	PPTV		99
27) Chloroform	11.10	83	12827	240.73	PPTV		96
28) Tetrahydrofuran	11.35	42	9053	244.27	PPTV		96
29) 2,2,4-Trimethylpentane	11.65	57	31369	244.63	PPTV		97
30) 1,2-Dichloroethane	12.07	62	9303	235.03	PPTV		99
31) 1,1,1-Trichloroethane	11.38	97	11707	231.29	PPTV		99
32) Cyclohexane	11.04	56	10419	246.81	PPTV		93
33) Carbon Tetrachloride	11.30	117	12265	266.37	PPTV		100
34) Benzene	11.84	78	17101	261.37	PPTV		97
35) Heptane	11.75	43	15222	251.32	PPTV		96
37) TLPH	14.17	TIC	45679m	249.44	PPTV		
38) 1,2-Dichloropropane	13.13	63	6537	252.98	PPTV		99
39) Trichloroethene	12.51	130	6644	254.08	PPTV		99
40) 1,4-Dioxane	13.40	88	3414	234.37	PPTV		91
41) Bromodichloromethane	13.16	83	12853	237.99	PPTV		98
42) c-1,3-Dichloropropene	13.89	75	9582	239.03	PPTV		98
43) t-1,3-Dichloropropene	14.61	75	7417	245.50	PPTV		96
44) 1,1,2-Trichloroethane	14.81	97	5554	245.87	PPTV		98
45) Methyl Isobutyl Ketone	14.57	43	19213	226.05	PPTV		99
46) Toluene	14.17	92	9673	252.79	PPTV		97
47) 2-Hexanone	15.52	43	15121	213.11	PPTV		98
48) 1,2-Dibromoethane	15.35	107	8391	229.89	PPTV		99
49) Tetrachloroethene	14.63	166	7199	250.58	PPTV		98
50) Dibromochloromethane	15.03	127	8015	221.36	PPTV	#	97
52) Chlorobenzene	15.94	112	11220	262.02	PPTV	#	8
53) Ethylbenzene	15.94	106	5732	270.61	PPTV		87
54) m-Xylene & p-Xylene	16.09	106	13583	536.99	PPTV		99
55) Styrene	16.67	104	7521	219.92	PPTV		99
56) o-Xylene	16.62	106	6355	264.54	PPTV		99
57) Bromoform	16.74	173	6486	205.38	PPTV		90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE005.D Vial: 5
Acq On : 10 Nov 2020 2:34 pm Operator: rgg
Sample : aa63477-cal2 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:31 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.54	83	7432	214.33 PPTV	99
59) Bromofluorobenzene	17.35	174	337817	29944.72 PPTV	99
61) 4-ethyltoluene	17.60	105	14244	229.86 PPTV	98
62) 1,3,5-Trimethylbenzene	17.69	105	12563	249.27 PPTV	99
63) 1,2,4-Trimethylbenzene	18.19	105	11564	245.24 PPTV	98
64) 1,3-Dichlorobenzene	18.66	146	4255	N.D.	
65) 1,4-Dichlorobenzene	18.76	146	3663	N.D.	
66) Benzyl Chloride	19.05	91	3740	N.D.	
67) 1,2-Dichlorobenzene	19.31	146	3745	N.D.	
68) 1,2,4-Trichlorobenzene	21.23	180	766	N.D.	
69) Hexachlorobutadiene	21.15	225	3581	370.96 PPTV	93

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE005.D Vial: 5
Acq On : 10 Nov 2020 2:34 pm Operator: rgg
Sample : aa63477-cal2 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:31 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE006.D Vial: 6
Acq On : 10 Nov 2020 3:12 pm Operator: rgg
Sample : aa63477-cal3 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:32 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) BROMOCHLOROMETHANE	11.03	130	314786	31000.00	PPTV		0.00
36) 1,4-DIFLUOROBENZENE	12.53	114	1047011	31000.00	PPTV		0.01
51) D5-CHLOROBENZENE	15.92	117	806178	31000.00	PPTV		0.00
System Monitoring Compounds							
60) Bromofluorobenzene (surr)	17.35	174	346553	30450.04	PPTV		0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 97.44%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.60	85	34426	461.12	PPTV		100
3) Propene	4.48	41	16190	530.87	PPTV		93
4) Chloromethane	5.10	50	15231	500.43	PPTV		99
5) Freon 114	4.99	135	17275	465.10	PPTV		94
6) Vinyl Chloride	5.36	62	13291	492.18	PPTV		99
7) 1,3-Butadiene	5.43	39	15088	467.77	PPTV		97
8) Bromomethane	6.19	94	13311	487.76	PPTV		91
9) Chloroethane	6.51	64	6937	503.46	PPTV		93
10) Trichlorofluoromethane	6.83	101	30346	471.84	PPTV		99
11) Bromoethene	6.75	106	10877	493.23	PPTV		99
12) 1,1-Dichloroethene	7.87	61	22609	479.27	PPTV		98
13) Acetone	9.00	43	33224	523.92	PPTV		100
14) Isopropyl Alcohol	8.81	45	28376	455.75	PPTV		96
15) Carbon Disulfide	7.92	76	32956	477.93	PPTV		99
16) Methylene Chloride	8.88	84	10405	506.34	PPTV		96
17) Freon 113	7.97	151	15111	473.88	PPTV		99
18) 3-chloro-1-propene	8.72	41	22735	461.23	PPTV		97
19) t-1,2-Dichloroethene	9.14	61	18240	459.71	PPTV		98
20) Methyl tert-butyl ether	9.36	73	33291	452.25	PPTV		99
21) Hexane	9.28	57	18899	450.08	PPTV		97
22) 1,1-Dichloroethane	10.05	63	22577	481.64	PPTV		98
23) Vinyl Acetate	10.39	43	45026	446.80	PPTV		99
24) c-1,2-Dichloroethene	10.77	96	10720	468.38	PPTV		98
25) Ethyl Acetate	11.24	43	41665	456.57	PPTV		96
26) 2-Butanone	11.49	43	37010	461.19	PPTV		99
27) Chloroform	11.09	83	25160	469.15	PPTV		100
28) Tetrahydrofuran	11.35	42	17535	470.09	PPTV		96
29) 2,2,4-Trimethylpentane	11.65	57	61135	473.70	PPTV		100
30) 1,2-Dichloroethane	12.07	62	18424	462.47	PPTV		99
31) 1,1,1-Trichloroethane	11.39	97	23085	453.14	PPTV		99
32) Cyclohexane	11.05	56	19984	470.35	PPTV		96
33) Carbon Tetrachloride	11.30	117	23465	506.33	PPTV		98
34) Benzene	11.84	78	30937	469.79	PPTV		100
35) Heptane	11.75	43	28821	472.77	PPTV		97
37) TLPH	14.18	TIC	86053m	467.81	PPTV		
38) 1,2-Dichloropropane	13.13	63	12504	481.75	PPTV		99
39) Trichloroethene	12.51	130	12107	460.93	PPTV		96
40) 1,4-Dioxane	13.41	88	6159	420.93	PPTV		89
41) Bromodichloromethane	13.17	83	24775	456.69	PPTV		98
42) c-1,3-Dichloropropene	13.89	75	18262	453.54	PPTV		98
43) t-1,3-Dichloropropene	14.62	75	13224	435.76	PPTV		95
44) 1,1,2-Trichloroethane	14.81	97	10842	477.82	PPTV		97
45) Methyl Isobutyl Ketone	14.57	43	37442	438.56	PPTV		99
46) Toluene	14.18	92	17790	462.85	PPTV		100
47) 2-Hexanone	15.51	43	28911	405.64	PPTV		99
48) 1,2-Dibromoethane	15.36	107	16098	439.08	PPTV		100
49) Tetrachloroethene	14.63	166	14034	486.30	PPTV		96
50) Dibromochloromethane	15.04	127	15518	426.67	PPTV	#	99
52) Chlorobenzene	15.95	112	20522	475.05	PPTV	#	51
53) Ethylbenzene	15.93	106	10311	482.52	PPTV		93
54) m-Xylene & p-Xylene	16.10	106	24558	962.37	PPTV		99
55) Styrene	16.67	104	14269	413.58	PPTV		98
56) o-Xylene	16.62	106	11373	469.27	PPTV		100
57) Bromoform	16.75	173	13194	414.12	PPTV		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE006.D Vial: 6
Acq On : 10 Nov 2020 3:12 pm Operator: rgg
Sample : aa63477-cal3 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:32 2020 Quant Results File: 111020.RES

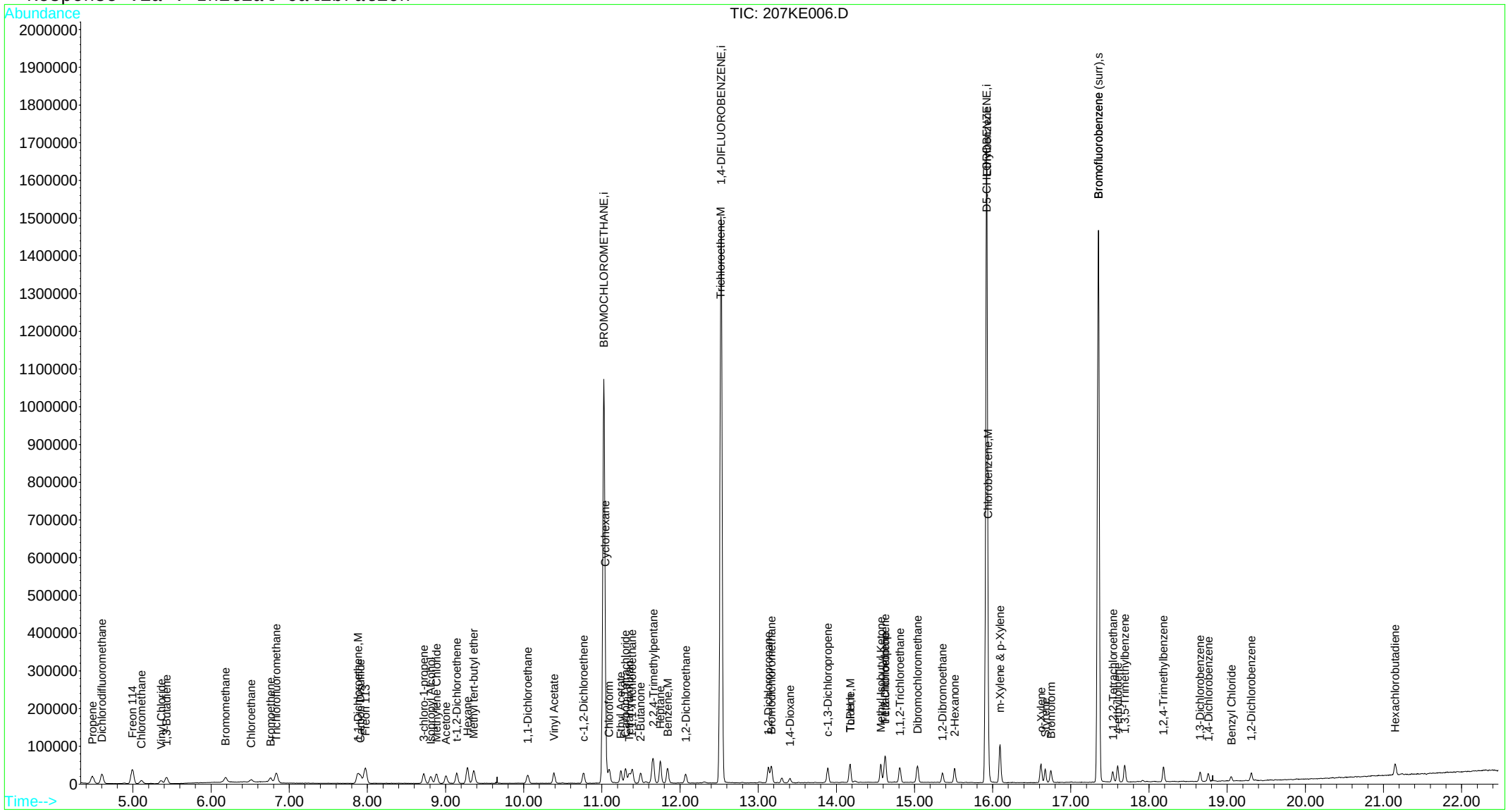
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.54	83	13810	394.78	PPTV	100
59) Bromofluorobenzene	17.35	174	346553	30450.04	PPTV	98
61) 4-ethyltoluene	17.60	105	26605	425.57	PPTV	100
62) 1,3,5-Trimethylbenzene	17.69	105	22793	448.29	PPTV	99
63) 1,2,4-Trimethylbenzene	18.19	105	19554	411.06	PPTV	98
64) 1,3-Dichlorobenzene	18.65	146	8425	363.31	PPTV	98
65) 1,4-Dichlorobenzene	18.75	146	7276	346.76	PPTV	97
66) Benzyl Chloride	19.05	91	7107	259.57	PPTV	98
67) 1,2-Dichlorobenzene	19.31	146	6985	337.54	PPTV	98
68) 1,2,4-Trichlorobenzene	21.23	180	1055	N.D.		
69) Hexachlorobutadiene	21.15	225	4827	495.66	PPTV	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE006.D Vial: 6
Acq On : 10 Nov 2020 3:12 pm Operator: rgg
Sample : aa63477-cal3 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:32 2020 Quant Results File: 111020.RES

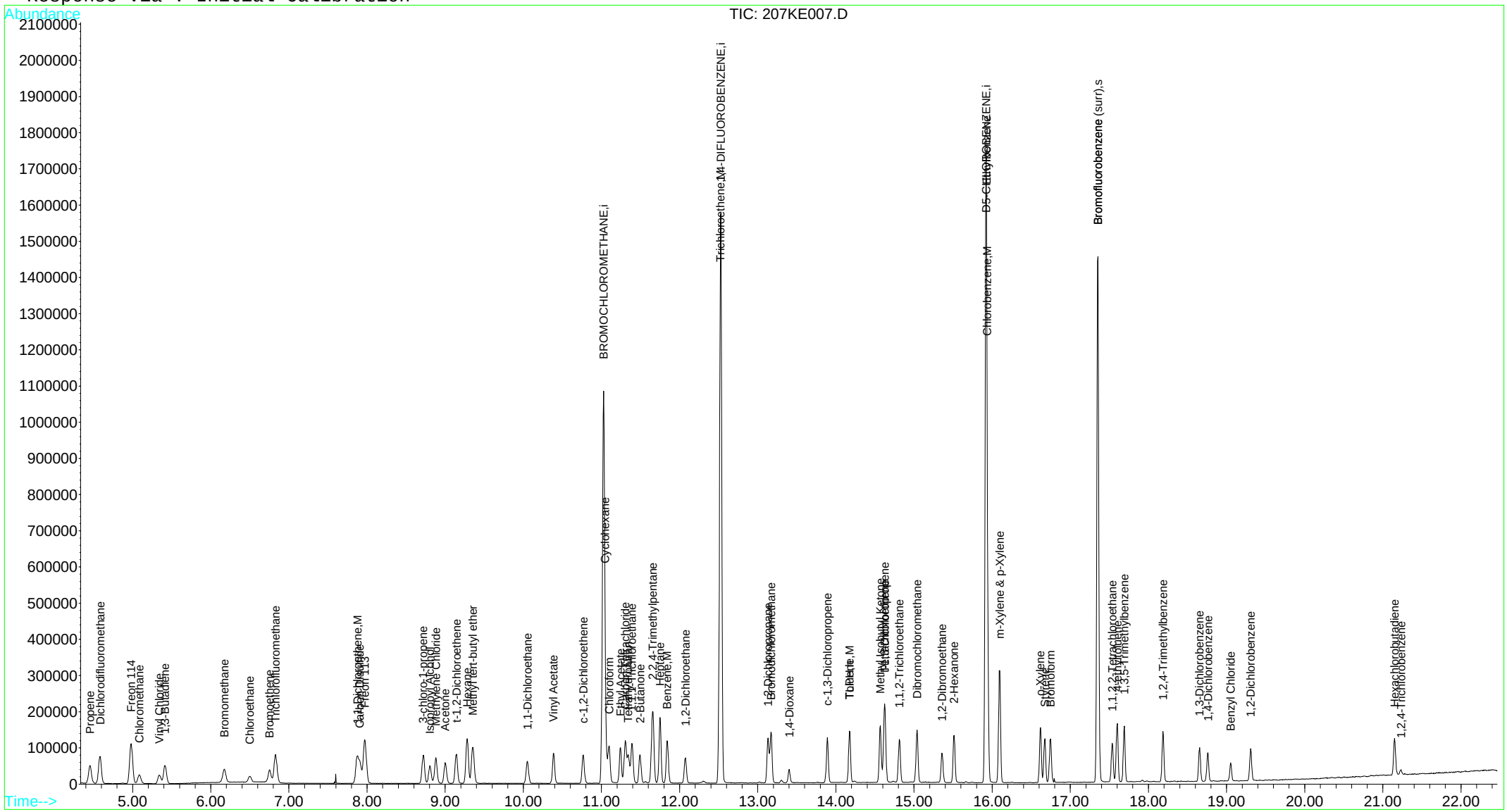
Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE007.D Vial: 7
Acq On : 10 Nov 2020 3:51 pm Operator: rgg
Sample : aa63477-cal4 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:34 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE007.D Vial: 7
Acq On : 10 Nov 2020 3:51 pm Operator: rgg
Sample : aa63477-cal4 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:34 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.03	130	318236	31000.00	PPTV	0.00
36) 1,4-DIFLUOROBENZENE	12.52	114	1050404	31000.00	PPTV	0.00
51) D5-CHLOROBENZENE	15.92	117	818913	31000.00	PPTV	0.00
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.35	174	353596	30585.72	PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 97.87%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.58	85	106346	1409.00	PPTV	99
3) Propene	4.45	41	43803	1420.73	PPTV	99
4) Chloromethane	5.08	50	43492	1413.47	PPTV	100
5) Freon 114	4.98	135	52600	1400.82	PPTV	96
6) Vinyl Chloride	5.34	62	39420	1443.95	PPTV	100
7) 1,3-Butadiene	5.41	39	43661	1338.92	PPTV	100
8) Bromomethane	6.17	94	37255	1350.34	PPTV	98
9) Chloroethane	6.50	64	20242	1453.15	PPTV	100
10) Trichlorofluoromethane	6.83	101	90053	1385.04	PPTV	100
11) Bromoethene	6.76	106	32129	1441.13	PPTV	99
12) 1,1-Dichloroethene	7.87	61	67453	1414.38	PPTV	98
13) Acetone	9.00	43	89937	1402.87	PPTV	99
14) Isopropyl Alcohol	8.80	45	75427	1198.30	PPTV	96
15) Carbon Disulfide	7.91	76	95536	1370.46	PPTV	99
16) Methylene Chloride	8.88	84	29836	1436.18	PPTV	99
17) Freon 113	7.98	151	44935	1393.87	PPTV	99
18) 3-chloro-1-propene	8.72	41	67888	1362.33	PPTV	99
19) t-1,2-Dichloroethene	9.14	61	56666	1412.69	PPTV	100
20) Methyl tert-butyl ether	9.35	73	100367	1348.67	PPTV	98
21) Hexane	9.28	57	57020	1343.20	PPTV	99
22) 1,1-Dichloroethane	10.05	63	65775	1387.98	PPTV	99
23) Vinyl Acetate	10.38	43	137921	1353.78	PPTV	99
24) c-1,2-Dichloroethene	10.77	96	31214	1349.03	PPTV	99
25) Ethyl Acetate	11.24	43	129077	1399.10	PPTV	100
26) 2-Butanone	11.49	43	110554	1362.72	PPTV	99
27) Chloroform	11.10	83	76008	1401.94	PPTV	100
28) Tetrahydrofuran	11.35	42	52507	1392.37	PPTV	98
29) 2,2,4-Trimethylpentane	11.66	57	186674	1430.74	PPTV	99
30) 1,2-Dichloroethane	12.07	62	55819	1385.95	PPTV	100
31) 1,1,1-Trichloroethane	11.39	97	70858	1375.80	PPTV	100
32) Cyclohexane	11.05	56	62272	1449.75	PPTV	98
33) Carbon Tetrachloride	11.30	117	71033	1516.15	PPTV	100
34) Benzene	11.84	78	91942	1381.03	PPTV	99
35) Heptane	11.75	43	90905	1475.02	PPTV	97
37) TLPH	14.17	TIC	259661m	1407.03	PPTV	
38) 1,2-Dichloropropane	13.13	63	38096	1463.00	PPTV	99
39) Trichloroethene	12.51	130	38578	1463.99	PPTV	99
40) 1,4-Dioxane	13.40	88	20555	1400.28	PPTV	98
41) Bromodichloromethane	13.17	83	80229	1474.11	PPTV	99
42) c-1,3-Dichloropropene	13.89	75	55855	1382.68	PPTV	98
43) t-1,3-Dichloropropene	14.62	75	41755	1371.47	PPTV	97
44) 1,1,2-Trichloroethane	14.81	97	32920	1446.13	PPTV	98
45) Methyl Isobutyl Ketone	14.57	43	123147	1437.76	PPTV	100
46) Toluene	14.18	92	54633	1416.81	PPTV	100
47) 2-Hexanone	15.51	43	101794	1423.61	PPTV	99
48) 1,2-Dibromoethane	15.36	107	51489	1399.85	PPTV	97
49) Tetrachloroethene	14.63	166	41771	1442.76	PPTV	99
50) Dibromochloromethane	15.04	127	53268	1459.89	PPTV	99
52) Chlorobenzene	15.94	112	63678	1451.11	PPTV	83
53) Ethylbenzene	15.93	106	31999	1474.17	PPTV	98
54) m-Xylene & p-Xylene	16.10	106	76877	2965.79	PPTV	98
55) Styrene	16.67	104	51214	1461.34	PPTV	99
56) o-Xylene	16.62	106	36136	1467.85	PPTV	97
57) Bromoform	16.75	173	49898	1541.80	PPTV	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE007.D Vial: 7
Acq On : 10 Nov 2020 3:51 pm Operator: rgg
Sample : aa63477-cal4 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 10 16:34 2020 Quant Results File: 111020.RES

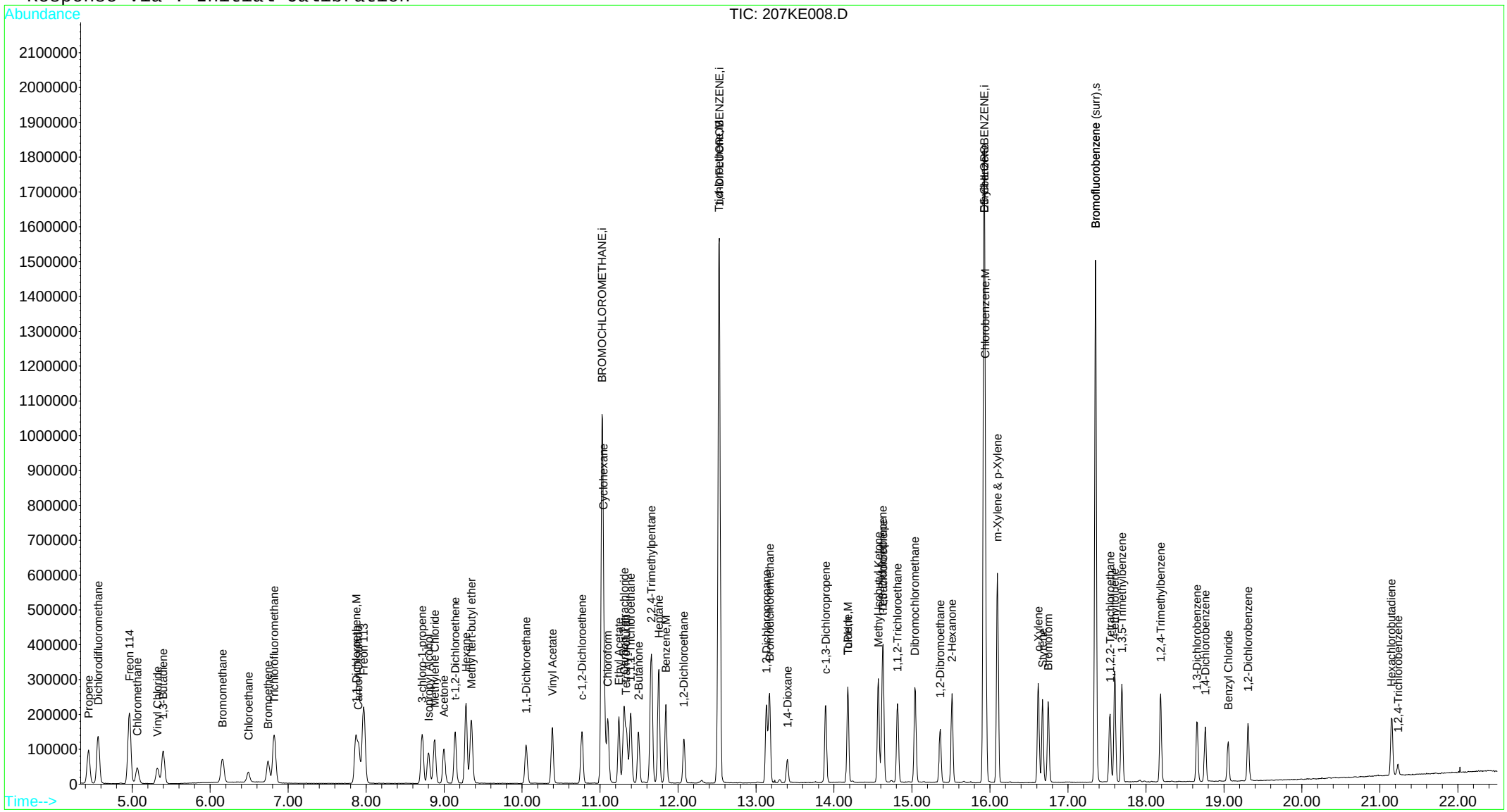
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Thu Oct 08 09:55:52 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.53	83	54376	1530.26	PPTV	99
59) Bromofluorobenzene	17.35	174	353596	30585.72	PPTV	99
61) 4-ethyltoluene	17.60	105	98197	1546.33	PPTV	100
62) 1,3,5-Trimethylbenzene	17.69	105	76299	1477.31	PPTV	100
63) 1,2,4-Trimethylbenzene	18.18	105	69894	1446.44	PPTV	99
64) 1,3-Dichlorobenzene	18.65	146	32662	1386.57	PPTV	99
65) 1,4-Dichlorobenzene	18.76	146	27723	1300.67	PPTV	100
66) Benzyl Chloride	19.05	91	32548	1170.29	PPTV	99
67) 1,2-Dichlorobenzene	19.31	146	30514	1451.63	PPTV	99
68) 1,2,4-Trichlorobenzene	21.23	180	3584	594.12	PPTV	97
69) Hexachlorobutadiene	21.15	225	16370	1654.81	PPTV	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE008.D Vial: 8
Acq On : 10 Nov 2020 4:30 pm Operator: rgg
Sample : aa63477-cal5 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:06 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE008.D Vial: 8
Acq On : 10 Nov 2020 4:30 pm Operator: rgg
Sample : aa63477-cal5 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:06 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.03	130	310265	31000.00	PPTV	0.00
36) 1,4-DIFLUOROBENZENE	12.53	114	1022161	31000.00	PPTV	0.01
51) D5-CHLOROBENZENE	15.92	117	806691	31000.00	PPTV	0.00
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.35	174	349662	31599.77	PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 101.12%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.57	85	190377	2485.61	PPTV	99
3) Propene	4.44	41	78555	1888.05	PPTV	98
4) Chloromethane	5.07	50	80492	2488.29	PPTV	100
5) Freon 114	4.96	135	98015	2583.99	PPTV	99
6) Vinyl Chloride	5.32	62	72789	2549.25	PPTV	99
7) 1,3-Butadiene	5.40	39	82365	2461.33	PPTV	100
8) Bromomethane	6.15	94	67684	2209.48	PPTV	99
9) Chloroethane	6.48	64	37037	2396.14	PPTV	99
10) Trichlorofluoromethane	6.82	101	163955	2526.99	PPTV	99
11) Bromoethene	6.74	106	59861	2584.59	PPTV	98
12) 1,1-Dichloroethene	7.87	61	122703	2541.89	PPTV	99
13) Acetone	9.00	43	158599	2033.21	PPTV	100
14) Isopropyl Alcohol	8.80	45	136735	2071.49	PPTV	96
15) Carbon Disulfide	7.90	76	177028	2523.86	PPTV	99
16) Methylene Chloride	8.88	84	54063	2169.57	PPTV	99
17) Freon 113	7.97	151	83373	2574.65	PPTV	99
18) 3-chloro-1-propene	8.72	41	125295	2534.92	PPTV	98
19) t-1,2-Dichloroethene	9.14	61	103970	2603.41	PPTV	100
20) Methyl tert-butyl ether	9.35	73	185019	2610.41	PPTV	97
21) Hexane	9.28	57	108090	2632.20	PPTV	99
22) 1,1-Dichloroethane	10.05	63	121923	2533.08	PPTV	99
23) Vinyl Acetate	10.39	43	260374	2660.77	PPTV	100
24) c-1,2-Dichloroethene	10.77	96	59323	2566.34	PPTV	99
25) Ethyl Acetate	11.24	43	238073	2598.08	PPTV	99
26) 2-Butanone	11.49	43	204529	2537.30	PPTV	99
27) Chloroform	11.10	83	138957	2609.01	PPTV	99
28) Tetrahydrofuran	11.34	42	97009	2543.27	PPTV	98
29) 2,2,4-Trimethylpentane	11.66	57	346935	2653.33	PPTV	99
30) 1,2-Dichloroethane	12.07	62	103648	2628.72	PPTV	98
31) 1,1,1-Trichloroethane	11.39	97	131329	2617.24	PPTV	99
32) Cyclohexane	11.05	56	113964	2617.88	PPTV	99
33) Carbon Tetrachloride	11.31	117	132572	2636.04	PPTV	99
34) Benzene	11.84	78	170670	2503.37	PPTV	100
35) Heptane	11.75	43	163019	2560.56	PPTV	99
37) TLPH	14.18	TIC	480753m	2543.25	PPTV	
38) 1,2-Dichloropropane	13.13	63	70067	2567.07	PPTV	98
39) Trichloroethene	12.52	130	70147	2593.58	PPTV	98
40) 1,4-Dioxane	13.40	88	37382	2677.20	PPTV	98
41) Bromodichloromethane	13.17	83	147301	2744.49	PPTV	99
42) c-1,3-Dichloropropene	13.89	75	104632	2608.76	PPTV	98
43) t-1,3-Dichloropropene	14.62	75	75637	2537.00	PPTV	98
44) 1,1,2-Trichloroethane	14.82	97	61730	2652.39	PPTV	98
45) Methyl Isobutyl Ketone	14.57	43	232500	2839.40	PPTV	99
46) Toluene	14.18	92	102779	2606.88	PPTV	99
47) 2-Hexanone	15.51	43	195493	2971.87	PPTV	99
48) 1,2-Dibromoethane	15.36	107	97552	2739.35	PPTV	99
49) Tetrachloroethene	14.63	166	78553	2597.50	PPTV	99
50) Dibromochloromethane	15.04	127	101105	2944.45	PPTV	99
52) Chlorobenzene	15.95	112	121125	2553.68	PPTV	93
53) Ethylbenzene	15.93	106	60217	2490.68	PPTV	99
54) m-Xylene & p-Xylene	16.10	106	145097	5106.87	PPTV	98
55) Styrene	16.67	104	94073	2806.44	PPTV	99
56) o-Xylene	16.62	106	66315	2477.73	PPTV	99
57) Bromoform	16.75	173	94545	3086.79	PPTV	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE008.D Vial: 8
Acq On : 10 Nov 2020 4:30 pm Operator: rgg
Sample : aa63477-cal5 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:06 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.54	83	99630	2896.65	PPTV	99
59) Bromofluorobenzene	17.35	174	349662	31599.77	PPTV	98
61) 4-ethyltoluene	17.60	105	189741	2922.19	PPTV	100
62) 1,3,5-Trimethylbenzene	17.69	105	139995	2510.63	PPTV	100
63) 1,2,4-Trimethylbenzene	18.19	105	129676	2599.32	PPTV	100
64) 1,3-Dichlorobenzene	18.66	146	62815	3078.64	PPTV	99
65) 1,4-Dichlorobenzene	18.76	146	54997	3218.70	PPTV	99
66) Benzyl Chloride	19.06	91	74589	4194.80	PPTV	99
67) 1,2-Dichlorobenzene	19.31	146	58259	3284.68	PPTV	99
68) 1,2,4-Trichlorobenzene	21.23	180	7680	2316.18	PPTV	98
69) Hexachlorobutadiene	21.15	225	27267	1796.46	PPTV	98

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE009.D Vial: 9
Acq On : 10 Nov 2020 5:08 pm Operator: rgg
Sample : aa63477-cal6 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:07 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.03	130	309173	31000.00	PPTV	0.01
36) 1,4-DIFLUOROBENZENE	12.53	114	1034731	31000.00	PPTV	0.01
51) D5-CHLOROBENZENE	15.92	117	818627	31000.00	PPTV	0.00
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.35	174	365738	32570.67	PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 104.23%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.58	85	341458	4473.92	PPTV	100
3) Propene	4.45	41	141973	3424.33	PPTV	99
4) Chloromethane	5.08	50	147148	4564.93	PPTV	99
5) Freon 114	4.98	135	177116	4685.83	PPTV	99
6) Vinyl Chloride	5.34	62	131850	4634.01	PPTV	99
7) 1,3-Butadiene	5.41	39	148955	4466.98	PPTV	100
8) Bromomethane	6.18	94	125490	4110.98	PPTV	97
9) Chloroethane	6.50	64	66481	4316.23	PPTV	99
10) Trichlorofluoromethane	6.83	101	295042	4563.46	PPTV	99
11) Bromoethene	6.76	106	108558	4703.71	PPTV	100
12) 1,1-Dichloroethene	7.87	61	222023	4615.62	PPTV	99
13) Acetone	9.00	43	285029	3666.93	PPTV	100
14) Isopropyl Alcohol	8.79	45	246583	3748.85	PPTV	99
15) Carbon Disulfide	7.92	76	319529	4571.57	PPTV	99
16) Methylene Chloride	8.88	84	97063	3908.93	PPTV	99
17) Freon 113	7.98	151	149219	4624.32	PPTV	98
18) 3-chloro-1-propene	8.73	41	228671	4642.73	PPTV	98
19) t-1,2-Dichloroethene	9.15	61	189873	4771.22	PPTV	100
20) Methyl tert-butyl ether	9.35	73	334454	4735.44	PPTV	100
21) Hexane	9.29	57	194517	4753.60	PPTV	99
22) 1,1-Dichloroethane	10.06	63	217522	4535.22	PPTV	100
23) Vinyl Acetate	10.39	43	476326	4884.78	PPTV	100
24) c-1,2-Dichloroethene	10.77	96	107063	4647.96	PPTV	100
25) Ethyl Acetate	11.24	43	429688	4705.72	PPTV	100
26) 2-Butanone	11.49	43	371449	4624.32	PPTV	100
27) Chloroform	11.10	83	247136	4656.54	PPTV	99
28) Tetrahydrofuran	11.34	42	175458	4616.21	PPTV	99
29) 2,2,4-Trimethylpentane	11.66	57	634866	4872.55	PPTV	100
30) 1,2-Dichloroethane	12.08	62	180946	4605.37	PPTV	99
31) 1,1,1-Trichloroethane	11.39	97	233530	4670.43	PPTV	99
32) Cyclohexane	11.06	56	205029	4726.37	PPTV	99
33) Carbon Tetrachloride	11.31	117	238029	4749.65	PPTV	100
34) Benzene	11.84	78	304946	4488.71	PPTV	100
35) Heptane	11.75	43	296065	4666.75	PPTV	99
37) TLPH	14.18	TIC	863297m	4511.48	PPTV	
38) 1,2-Dichloropropane	13.14	63	126568	4580.79	PPTV	97
39) Trichloroethene	12.52	130	128737	4702.04	PPTV	99
40) 1,4-Dioxane	13.40	88	67415	4769.44	PPTV	99
41) Bromodichloromethane	13.17	83	264748	4872.82	PPTV	99
42) c-1,3-Dichloropropene	13.89	75	189588	4669.53	PPTV	99
43) t-1,3-Dichloropropene	14.62	75	139038	4606.94	PPTV	99
44) 1,1,2-Trichloroethane	14.81	97	111873	4748.52	PPTV	99
45) Methyl Isobutyl Ketone	14.57	43	418337	5046.87	PPTV	100
46) Toluene	14.18	92	184979	4634.81	PPTV	99
47) 2-Hexanone	15.51	43	357751	5372.43	PPTV	99
48) 1,2-Dibromoethane	15.36	107	177743	4930.56	PPTV	99
49) Tetrachloroethene	14.63	166	145485	4752.30	PPTV	100
50) Dibromochloromethane	15.04	127	184744	5314.88	PPTV	99
52) Chlorobenzene	15.95	112	221918	4610.49	PPTV	97
53) Ethylbenzene	15.93	106	111822	4557.71	PPTV	97
54) m-Xylene & p-Xylene	16.10	106	266678	9249.21	PPTV	100
55) Styrene	16.67	104	181548	5337.07	PPTV	100
56) o-Xylene	16.62	106	122695	4517.42	PPTV	99
57) Bromoform	16.75	173	181644	5844.01	PPTV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE009.D Vial: 9
Acq On : 10 Nov 2020 5:08 pm Operator: rgg
Sample : aa63477-cal6 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:07 2020 Quant Results File: 111020.RES

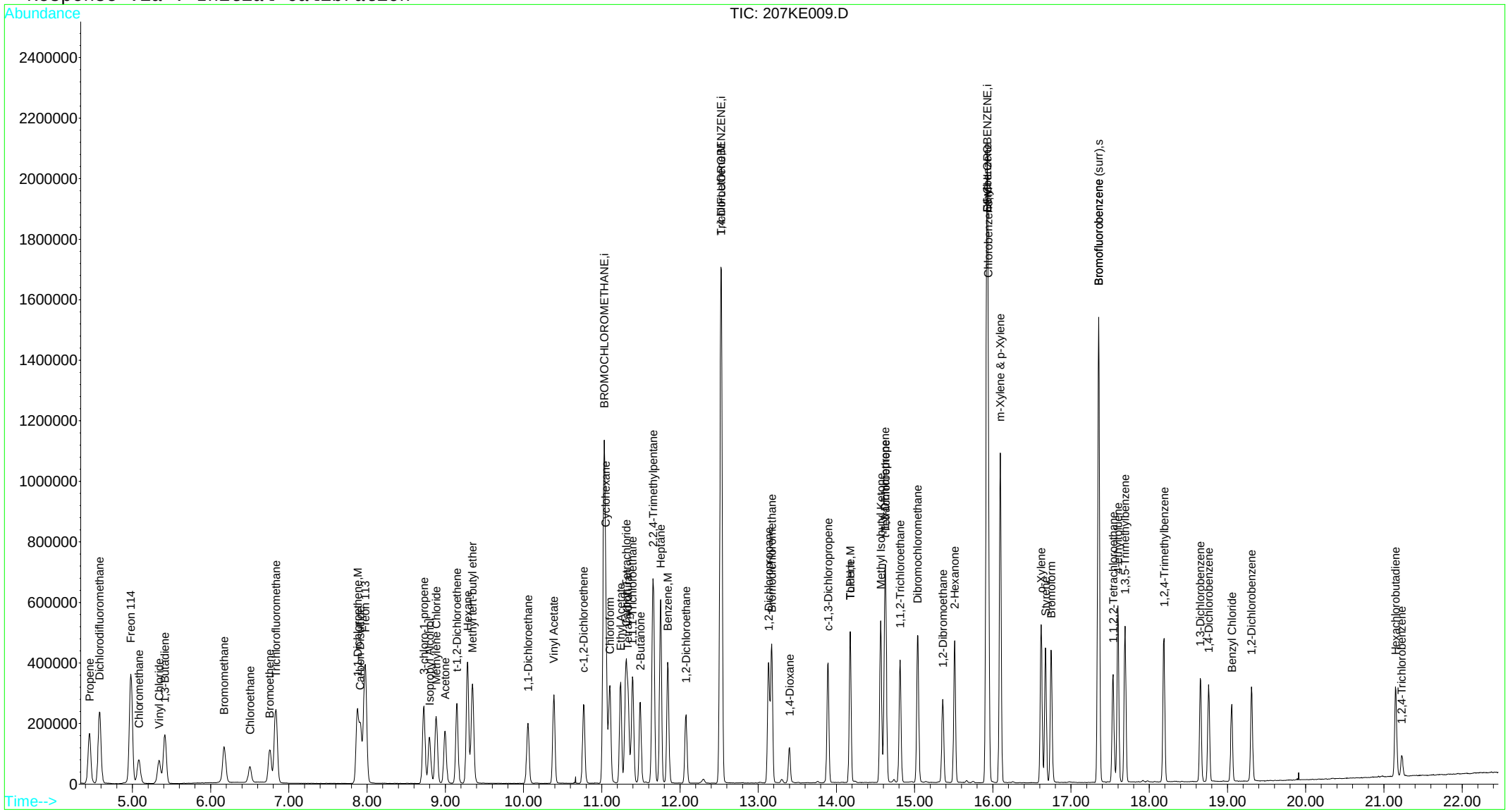
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.54	83	183993	5271.44	PPTV	99
59) Bromofluorobenzene	17.35	174	365738	32570.67	PPTV	98
61) 4-ethyltoluene	17.60	105	356409	5409.01	PPTV	100
62) 1,3,5-Trimethylbenzene	17.69	105	259157	4579.88	PPTV	100
63) 1,2,4-Trimethylbenzene	18.19	105	243150	4802.80	PPTV	99
64) 1,3-Dichlorobenzene	18.66	146	124317	6004.09	PPTV	99
65) 1,4-Dichlorobenzene	18.76	146	111983	6458.25	PPTV	99
66) Benzyl Chloride	19.05	91	165740	9185.12	PPTV	99
67) 1,2-Dichlorobenzene	19.31	146	110828	6157.44	PPTV	100
68) 1,2,4-Trichlorobenzene	21.23	180	17833	5299.76	PPTV	99
69) Hexachlorobutadiene	21.15	225	49415	3208.19	PPTV	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE009.D Vial: 9
Acq On : 10 Nov 2020 5:08 pm Operator: rgg
Sample : aa63477-cal6 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:07 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE010.D Vial: 10
Acq On : 10 Nov 2020 5:47 pm Operator: rgg
Sample : aa63477-cal7 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:08 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.04	130	317777	31000.00 PPTV	0.02
36) 1,4-DIFLUOROBENZENE	12.53	114	1062761	31000.00 PPTV	0.01
51) D5-CHLOROBENZENE	15.92	117	855342	31000.00 PPTV	0.00
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.35	174	386285	32923.86 PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 105.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.58	85	702760	8958.53 PPTV	99
3) Propene	4.45	41	292740	6869.59 PPTV	99
4) Chloromethane	5.08	50	294760	8896.67 PPTV	99
5) Freon 114	4.99	135	368009	9472.54 PPTV	99
6) Vinyl Chloride	5.35	62	271388	9279.98 PPTV	100
7) 1,3-Butadiene	5.42	39	303143	8844.74 PPTV	99
8) Bromomethane	6.18	94	245843	7835.61 PPTV	100
9) Chloroethane	6.51	64	134823	8516.28 PPTV	100
10) Trichlorofluoromethane	6.84	101	596839	8981.46 PPTV	100
11) Bromoethene	6.76	106	220767	9306.62 PPTV	99
12) 1,1-Dichloroethene	7.88	61	451137	9124.73 PPTV	99
13) Acetone	8.99	43	578227	7237.53 PPTV	99
14) Isopropyl Alcohol	8.80	45	503834	7452.50 PPTV	99
15) Carbon Disulfide	7.92	76	656648	9140.44 PPTV	99
16) Methylene Chloride	8.89	84	196696	7706.89 PPTV	99
17) Freon 113	7.98	151	309609	9335.05 PPTV	99
18) 3-chloro-1-propene	8.73	41	505993	9995.08 PPTV	92
19) t-1,2-Dichloroethene	9.16	61	384513	9400.62 PPTV	99
20) Methyl tert-butyl ether	9.35	73	682773	9405.44 PPTV	99
21) Hexane	9.29	57	397121	9442.06 PPTV	99
22) 1,1-Dichloroethane	10.06	63	447970	9087.05 PPTV	99
23) Vinyl Acetate	10.39	43	986239	9840.17 PPTV	100
24) c-1,2-Dichloroethene	10.77	96	222965	9417.57 PPTV	99
25) Ethyl Acetate	11.24	43	884389	9423.14 PPTV	100
26) 2-Butanone	11.49	43	766208	9280.56 PPTV	99
27) Chloroform	11.10	83	501275	9189.29 PPTV	99
28) Tetrahydrofuran	11.34	42	360829	9236.19 PPTV	99
29) 2,2,4-Trimethylpentane	11.66	57	1308487	9770.64 PPTV	99
30) 1,2-Dichloroethane	12.08	62	371556	9200.66 PPTV	100
31) 1,1,1-Trichloroethane	11.40	97	468796	9121.73 PPTV	100
32) Cyclohexane	11.06	56	424937	9530.51 PPTV	98
33) Carbon Tetrachloride	11.31	117	482038	9358.20 PPTV	100
34) Benzene	11.85	78	624569	8944.54 PPTV	100
35) Heptane	11.75	43	604536	9271.04 PPTV	100
37) TLPH	14.18	TIC	1778588m	9049.53 PPTV	
38) 1,2-Dichloropropane	13.14	63	260927	9194.48 PPTV	95
39) Trichloroethene	12.52	130	266632	9481.71 PPTV	100
40) 1,4-Dioxane	13.40	88	140528	9679.78 PPTV	99
41) Bromodichloromethane	13.17	83	542115	9714.74 PPTV	100
42) c-1,3-Dichloropropene	13.89	75	394599	9462.58 PPTV	99
43) t-1,3-Dichloropropene	14.62	75	281237	9072.84 PPTV	99
44) 1,1,2-Trichloroethane	14.81	97	232842	9622.46 PPTV	100
45) Methyl Isobutyl Ketone	14.57	43	875742	10286.42 PPTV	99
46) Toluene	14.18	92	389216	9494.93 PPTV	100
47) 2-Hexanone	15.51	43	750402	10971.75 PPTV	100
48) 1,2-Dibromoethane	15.36	107	374345	10110.39 PPTV	99
49) Tetrachloroethene	14.63	166	309233	9834.74 PPTV	99
50) Dibromochloromethane	15.04	127	392418	10991.68 PPTV	99
52) Chlorobenzene	15.95	112	461656	9179.50 PPTV	99
53) Ethylbenzene	15.93	106	229769	8963.07 PPTV	97
54) m-Xylene & p-Xylene	16.10	106	559740	18580.19 PPTV	99
55) Styrene	16.67	104	389400	10956.04 PPTV	99
56) o-Xylene	16.62	106	256051	9022.70 PPTV	99
57) Bromoform	16.75	173	387734	11939.05 PPTV	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE010.D Vial: 10
Acq On : 10 Nov 2020 5:47 pm Operator: rgg
Sample : aa63477-cal7 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:08 2020 Quant Results File: 111020.RES

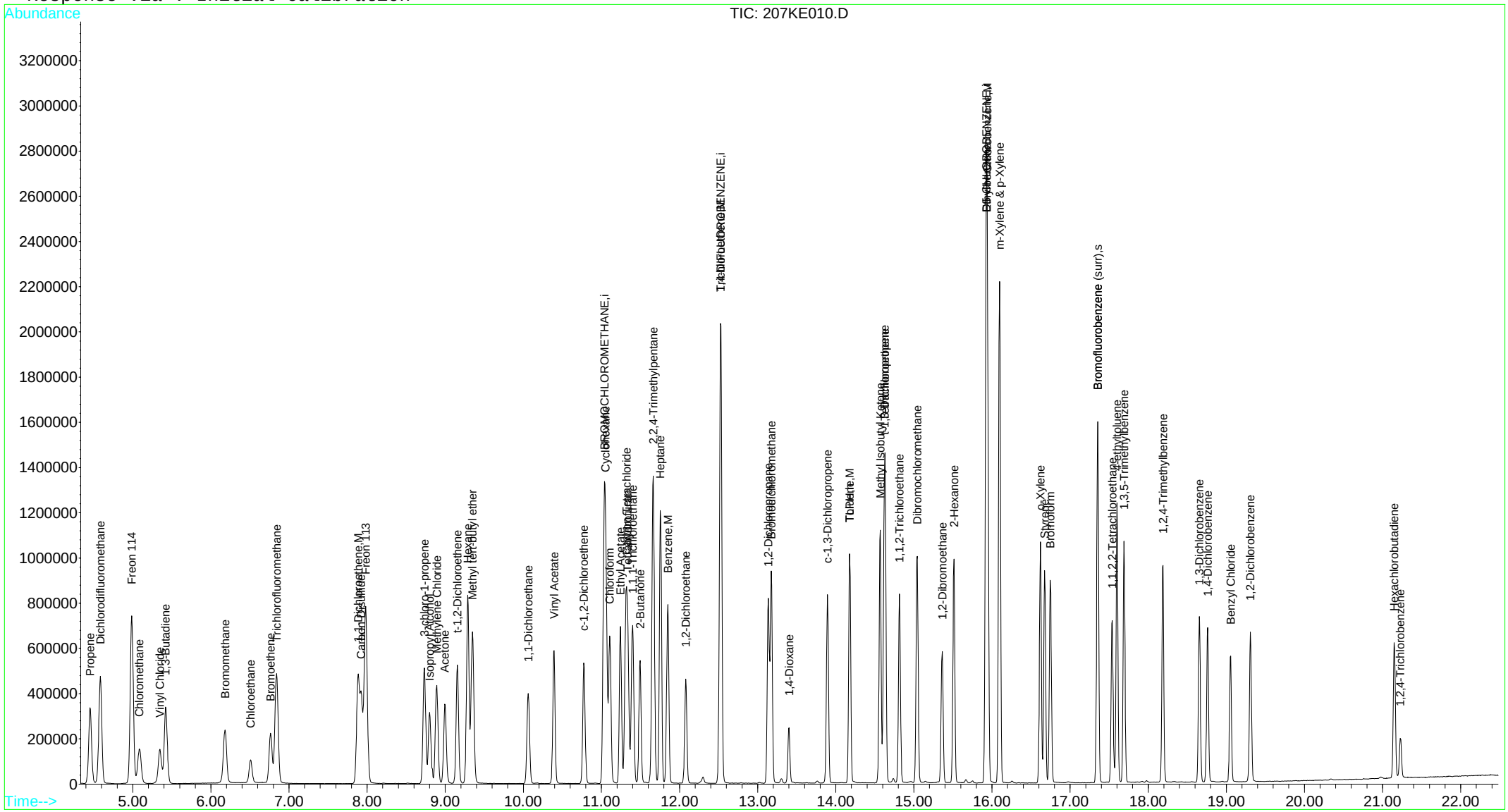
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.54	83	382285	10482.41	PPTV	100
59) Bromofluorobenzene	17.35	174	386285	32923.86	PPTV	98
61) 4-ethyltoluene	17.60	105	757687	11005.38	PPTV	99
62) 1,3,5-Trimethylbenzene	17.69	105	546480	9242.97	PPTV	99
63) 1,2,4-Trimethylbenzene	18.19	105	515724	9749.54	PPTV	99
64) 1,3-Dichlorobenzene	18.66	146	271288	12539.87	PPTV	99
65) 1,4-Dichlorobenzene	18.76	146	250979	13853.09	PPTV	99
66) Benzyl Chloride	19.06	91	383299	20330.19	PPTV	99
67) 1,2-Dichlorobenzene	19.31	146	241741	12854.27	PPTV	99
68) 1,2,4-Trichlorobenzene	21.23	180	47573	13531.28	PPTV	98
69) Hexachlorobutadiene	21.15	225	103421	6426.23	PPTV	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE010.D Vial: 10
Acq On : 10 Nov 2020 5:47 pm Operator: rgg
Sample : aa63477-cal7 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:08 2020 Quant Results File: 111020.RES

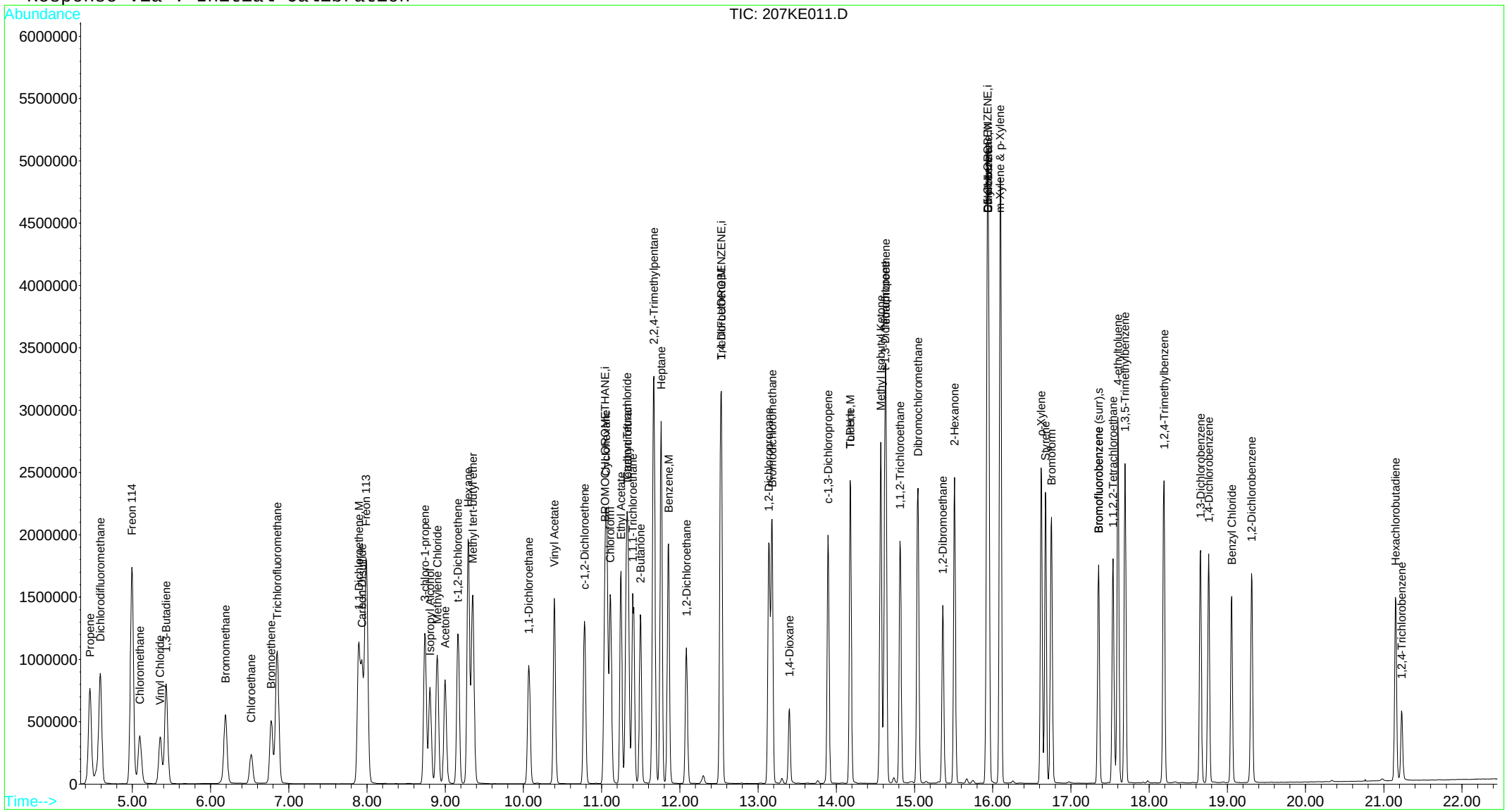
Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE011.D Vial: 11
Acq On : 10 Nov 2020 6:31 pm Operator: rgg
Sample : aa63477-cal8 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:08 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE011.D Vial: 11
Acq On : 10 Nov 2020 6:31 pm Operator: rgg
Sample : aa63477-cal8 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:08 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.04	130	337156	31000.00	PPTV	0.02
36) 1,4-DIFLUOROBENZENE	12.54	114	1121573	31000.00	PPTV	0.02
51) D5-CHLOROBENZENE	15.93	117	897767	31000.00	PPTV	0.01
System Monitoring Compounds						
60) Bromofluorobenzene (surr)	17.35	174	421992	34267.56	PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 109.66%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.59	85	1504773	18079.74	PPTV	99
3) Propene	4.46	41	727469	16089.96	PPTV	97
4) Chloromethane	5.10	50	720527	20497.49	PPTV	99
5) Freon 114	4.99	135	897760	21780.09	PPTV	96
6) Vinyl Chloride	5.36	62	664192	21406.30	PPTV	100
7) 1,3-Butadiene	5.43	39	723949	19908.44	PPTV	97
8) Bromomethane	6.19	94	592272	17792.13	PPTV	99
9) Chloroethane	6.52	64	322906	19224.44	PPTV	100
10) Trichlorofluoromethane	6.85	101	1383679	19625.31	PPTV	100
11) Bromoethene	6.77	106	529477	21037.61	PPTV	100
12) 1,1-Dichloroethene	7.89	61	1081924	20625.28	PPTV	97
13) Acetone	9.00	43	1384565	16334.18	PPTV	99
14) Isopropyl Alcohol	8.81	45	1238119	17261.09	PPTV	98
15) Carbon Disulfide	7.93	76	1620954	21266.52	PPTV	98
16) Methylene Chloride	8.90	84	481670	17787.90	PPTV	98
17) Freon 113	7.99	151	762655	21673.18	PPTV	96
18) 3-chloro-1-propene	8.74	41	1234013	22974.86	PPTV	96
19) t-1,2-Dichloroethene	9.16	61	930816	21448.69	PPTV	98
20) Methyl tert-butyl ether	9.35	73	1661840	21576.62	PPTV #	1
21) Hexane	9.29	57	948376	21252.79	PPTV	97
22) 1,1-Dichloroethane	10.07	63	1087485	20791.65	PPTV	99
23) Vinyl Acetate	10.39	43	2490337	23419.08	PPTV	100
24) c-1,2-Dichloroethene	10.78	96	551747	21965.13	PPTV	98
25) Ethyl Acetate	11.25	43	2199265	22086.22	PPTV	99
26) 2-Butanone	11.49	43	1895147	21635.26	PPTV	100
27) Chloroform	11.11	83	1203133	20787.93	PPTV	99
28) Tetrahydrofuran	11.34	42	872963	21061.00	PPTV	100
29) 2,2,4-Trimethylpentane	11.67	57	3266304	22988.03	PPTV	97
30) 1,2-Dichloroethane	12.08	62	881420	20571.64	PPTV	100
31) 1,1,1-Trichloroethane	11.40	97	1062754	19490.26	PPTV	99
32) Cyclohexane	11.06	56	1044596	22081.65	PPTV	97
33) Carbon Tetrachloride	11.32	117	1122040	20531.05	PPTV	100
34) Benzene	11.86	78	1560505	21063.67	PPTV	99
35) Heptane	11.76	43	1468924	21232.31	PPTV	99
37) TLPH	14.18	TIC	4332021m	20885.71	PPTV	
38) 1,2-Dichloropropane	13.14	63	649808	21697.08	PPTV	92
39) Trichloroethene	12.52	130	661573	22292.57	PPTV	99
40) 1,4-Dioxane	13.40	88	346738	22631.44	PPTV	98
41) Bromodichloromethane	13.18	83	1292608	21949.00	PPTV	99
42) c-1,3-Dichloropropene	13.89	75	974592	22145.46	PPTV	99
43) t-1,3-Dichloropropene	14.62	75	661501	20221.31	PPTV	98
44) 1,1,2-Trichloroethane	14.81	97	569855	22315.01	PPTV	99
45) Methyl Isobutyl Ketone	14.57	43	2149275	23921.48	PPTV	99
46) Toluene	14.18	92	968256	22382.03	PPTV	99
47) 2-Hexanone	15.51	43	1876049	25991.66	PPTV	98
48) 1,2-Dibromoethane	15.36	107	939528	24044.38	PPTV	99
49) Tetrachloroethene	14.63	166	781744	23558.62	PPTV	98
50) Dibromochloromethane	15.04	127	952033	25268.26	PPTV	99
52) Chlorobenzene	15.95	112	1141785	21630.24	PPTV	94
53) Ethylbenzene	15.94	106	559852	20807.26	PPTV	95
54) m-Xylene & p-Xylene	16.10	106	1375182	43491.08	PPTV	95
55) Styrene	16.67	104	1013049	27155.90	PPTV	95
56) o-Xylene	16.62	106	648123	21759.24	PPTV	97
57) Bromoform	16.75	173	995352	29200.41	PPTV	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE011.D Vial: 11
Acq On : 10 Nov 2020 6:31 pm Operator: rgg
Sample : aa63477-cal8 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:08 2020 Quant Results File: 111020.RES

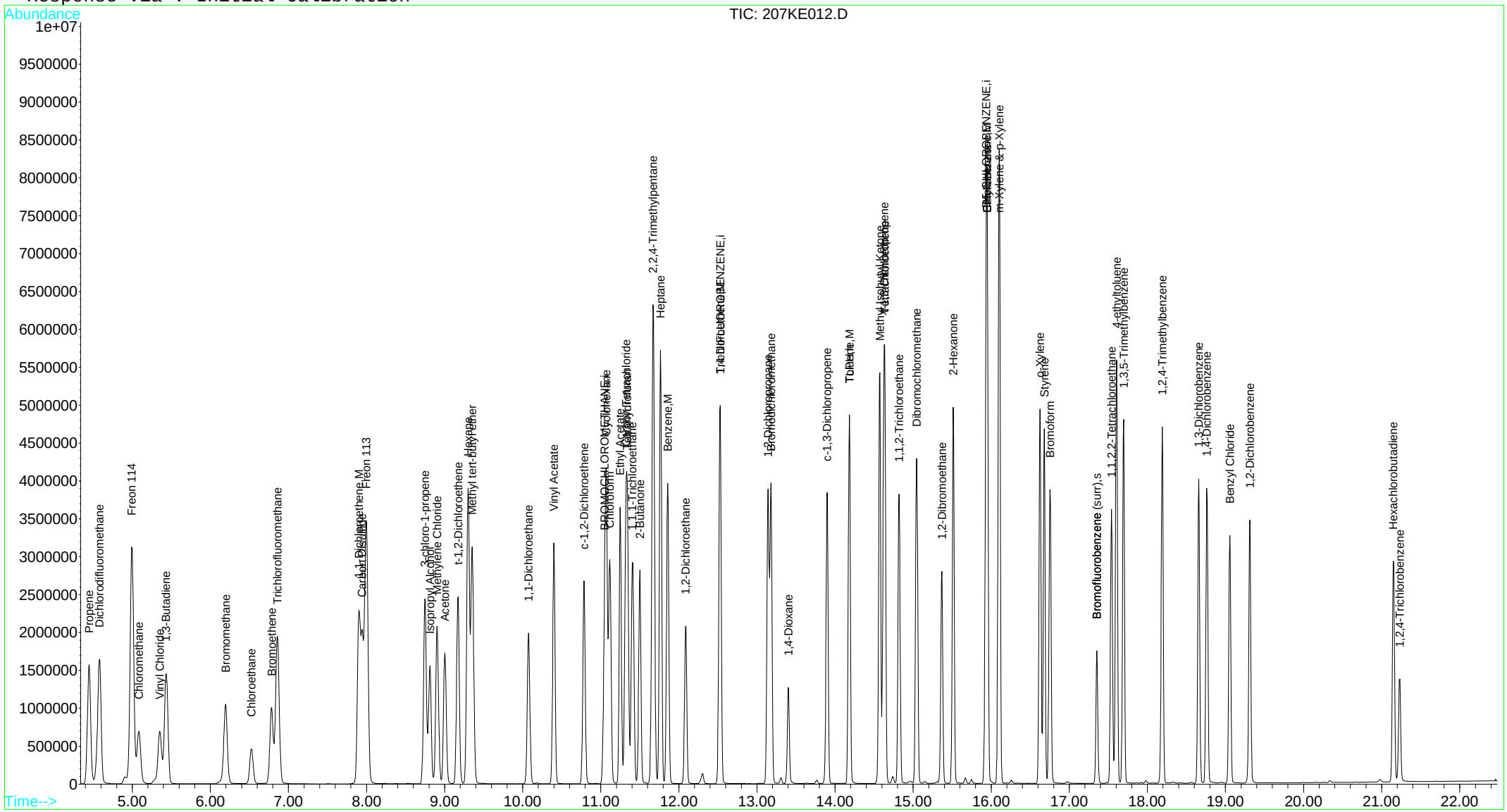
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.54	83	950681	24836.19	PPTV	100
59) Bromofluorobenzene	17.35	174	421992	34267.56	PPTV	97
61) 4-ethyltoluene	17.60	105	1931196	26725.00	PPTV	99
62) 1,3,5-Trimethylbenzene	17.69	105	1367895	22042.78	PPTV	97
63) 1,2,4-Trimethylbenzene	18.19	105	1300297	23419.93	PPTV	97
64) 1,3-Dichlorobenzene	18.66	146	740893	32628.29	PPTV	98
65) 1,4-Dichlorobenzene	18.76	146	695168	36557.39	PPTV	97
66) Benzyl Chloride	19.06	91	1049666	53043.35	PPTV	97
67) 1,2-Dichlorobenzene	19.31	146	648861	32871.92	PPTV	98
68) 1,2,4-Trichlorobenzene	21.23	180	155567	42157.22	PPTV	99
69) Hexachlorobutadiene	21.15	225	276926	16394.10	PPTV	98

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE012.D Vial: 12
Acq On : 10 Nov 2020 7:16 pm Operator: rgg
Sample : aa63477-cal9 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:09 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE012.D Vial: 12
Acq On : 10 Nov 2020 7:16 pm Operator: rgg
Sample : aa63477-cal9 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:09 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) BROMOCHLOROMETHANE	11.04	130	340219	31000.00	PPTV		0.02
36) 1,4-DIFLUOROBENZENE	12.53	114	1100800	31000.00	PPTV		0.02
51) D5-CHLOROBENZENE	15.93	117	857673	31000.00	PPTV		0.01
System Monitoring Compounds							
60) Bromofluorobenzene (surr)	17.35	174	429556	36512.43	PPTV		0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 116.84%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	4.58	85	2911608	34667.81	PPTV		99
3) Propene	4.44	41	1533814	33619.06	PPTV		97
4) Chloromethane	5.08	50	1425524	40188.09	PPTV		97
5) Freon 114	5.00	135	1820158	43760.35	PPTV		96
6) Vinyl Chloride	5.35	62	1392161	44464.12	PPTV		100
7) 1,3-Butadiene	5.43	39	1473384	40152.95	PPTV		95
8) Bromomethane	6.20	94	1230000	36617.12	PPTV		99
9) Chloroethane	6.53	64	678325	40020.98	PPTV		99
10) Trichlorofluoromethane	6.86	101	2724597	38296.20	PPTV		100
11) Bromoethene	6.78	106	1106299	43560.63	PPTV		100
12) 1,1-Dichloroethene	7.90	61	2218115	41904.39	PPTV		95
13) Acetone	9.00	43	2895178	33847.88	PPTV		98
14) Isopropyl Alcohol	8.81	45	2591942	35809.94	PPTV		97
15) Carbon Disulfide	7.95	76	3443871	44775.97	PPTV		97
16) Methylene Chloride	8.90	84	1017271	37229.23	PPTV		96
17) Freon 113	8.00	151	1591890	44831.16	PPTV		94
18) 3-chloro-1-propene	8.75	41	2585149	47697.00	PPTV		93
19) t-1,2-Dichloroethene	9.17	61	1928301	44033.60	PPTV		97
20) Methyl tert-butyl ether	9.35	73	3445575	44333.12	PPTV	#	1
21) Hexane	9.30	57	1864444	41405.40	PPTV		93
22) 1,1-Dichloroethane	10.07	63	2317581	43910.97	PPTV		99
23) Vinyl Acetate	10.40	43	5346120	49822.19	PPTV		100
24) c-1,2-Dichloroethene	10.78	96	1168093	46083.29	PPTV		97
25) Ethyl Acetate	11.25	43	4625227	46030.87	PPTV		99
26) 2-Butanone	11.50	43	3994109	45186.79	PPTV		100
27) Chloroform	11.12	83	2412236	41303.78	PPTV		99
28) Tetrahydrofuran	11.34	42	1745852	41741.00	PPTV		97
29) 2,2,4-Trimethylpentane	11.67	57	6810439	47499.90	PPTV		94
30) 1,2-Dichloroethane	12.08	62	1719916	39780.08	PPTV		99
31) 1,1,1-Trichloroethane	11.40	97	2113195	38405.80	PPTV		99
32) Cyclohexane	11.07	56	2207918	46252.85	PPTV		96
33) Carbon Tetrachloride	11.32	117	2077107	37664.65	PPTV		99
34) Benzene	11.86	78	3318547	44390.42	PPTV		99
35) Heptane	11.76	43	2957488	42363.65	PPTV		97
37) TLPH	14.18	TIC	8818272m	43317.29	PPTV		
38) 1,2-Dichloropropane	13.14	63	1376359	46823.85	PPTV		86
39) Trichloroethene	12.52	130	1377477	47291.80	PPTV		98
40) 1,4-Dioxane	13.40	88	742337	49366.35	PPTV		96
41) Bromodichloromethane	13.18	83	2508051	43391.37	PPTV		99
42) c-1,3-Dichloropropene	13.90	75	2030774	47015.66	PPTV		99
43) t-1,3-Dichloropropene	14.62	75	1256727	39141.62	PPTV		96
44) 1,1,2-Trichloroethane	14.82	97	1196398	47733.96	PPTV		99
45) Methyl Isobutyl Ketone	14.57	43	4460194	50578.85	PPTV		98
46) Toluene	14.18	92	2030321	47818.18	PPTV		98
47) 2-Hexanone	15.51	43	3910637	55202.22	PPTV		97
48) 1,2-Dibromoethane	15.37	107	1966310	51271.37	PPTV		100
49) Tetrachloroethene	14.64	166	1511567	46412.17	PPTV		98
50) Dibromochloromethane	15.04	127	1865099	50436.42	PPTV	#	98
52) Chlorobenzene	15.95	112	2269030	44994.46	PPTV		90
53) Ethylbenzene	15.94	106	1089504	42385.02	PPTV		95
54) m-Xylene & p-Xylene	16.10	106	2634348	87207.74	PPTV		94
55) Styrene	16.68	104	2182113	61228.39	PPTV		90
56) o-Xylene	16.62	106	1386782	48734.48	PPTV		94
57) Bromoform	16.75	173	1991914	61168.06	PPTV	#	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE012.D Vial: 12
Acq On : 10 Nov 2020 7:16 pm Operator: rgg
Sample : aa63477-cal9 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 8:09 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Tue Nov 10 16:36:10 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58)	1,1,2,2-Tetrachloroethane	17.54	83	2060694	56351.51	PPTV	99
59)	Bromofluorobenzene	17.35	174	429556	36512.43	PPTV	96
61)	4-ethyltoluene	17.61	105	3956349	57309.65	PPTV	98
62)	1,3,5-Trimethylbenzene	17.70	105	2778332	46864.02	PPTV	96
63)	1,2,4-Trimethylbenzene	18.19	105	2728873	51447.98	PPTV	96
64)	1,3-Dichlorobenzene	18.66	146	1707337	78704.56	PPTV	97
65)	1,4-Dichlorobenzene	18.76	146	1632908	89885.37	PPTV	96
66)	Benzyl Chloride	19.05	91	2389119	126374.52	PPTV	96
67)	1,2-Dichlorobenzene	19.31	146	1468299	77862.75	PPTV	97
68)	1,2,4-Trichlorobenzene	21.23	180	405675	115073.32	PPTV	99
69)	Hexachlorobutadiene	21.15	225	609452	37766.37	PPTV	97

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE015.D Vial: 15
Acq On : 10 Nov 2020 9:16 pm Operator: rgg
Sample : aa63477-scv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 10:02 2020 Quant Results File: 111020.RES

Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) BROMOCHLOROMETHANE	11.03	130	317977	31000.00 PPTV	0.00
36) 1,4-DIFLUOROBENZENE	12.53	114	1060731	31000.00 PPTV	0.00
51) D5-CHLOROBENZENE	15.92	117	846937	31000.00 PPTV	0.00
System Monitoring Compounds					
60) Bromofluorobenzene (surr)	17.35	174	381134	31360.11 PPTV	0.00
Spiked Amount 31250.000	Range 50 - 150		Recovery = 100.35%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.57	85	698460	9764.52 PPTV	99
3) Propene	4.43	41	270836	8837.03 PPTV	99
4) Chloromethane	5.07	50	289187	9322.03 PPTV	100
5) Freon 114	4.97	135	358754	9585.93 PPTV	100
6) Vinyl Chloride	5.32	62	264083	9422.30 PPTV	99
7) 1,3-Butadiene	5.40	39	274792	8624.05 PPTV	99
8) Bromomethane	6.17	94	245408	8867.56 PPTV	99
9) Chloroethane	6.49	64	130602	9001.90 PPTV	99
10) Trichlorofluoromethane	6.83	101	583733	9436.57 PPTV	99
11) Bromoethene	6.75	106	201274	8855.45 PPTV	99
12) 1,1-Dichloroethene	7.87	61	445058	9508.01 PPTV	99
13) Acetone	8.99	43	534342	8911.99 PPTV	99
14) Isopropyl Alcohol	8.79	45	533305	10234.89 PPTV	99
15) Carbon Disulfide	7.92	76	606188	8841.32 PPTV	99
16) Methylene Chloride	8.88	84	196149	9580.27 PPTV	99
17) Freon 113	7.98	151	307417	9635.95 PPTV	99
18) 3-chloro-1-propene	8.72	41	436815	8804.16 PPTV	96
19) t-1,2-Dichloroethene	9.15	61	359394	9110.70 PPTV	100
20) Methyl tert-butyl ether	9.34	73	632184	9022.35 PPTV	99
21) Hexane	9.28	57	378652	9387.34 PPTV	99
22) 1,1-Dichloroethane	10.06	63	445598	9521.08 PPTV	100
23) Vinyl Acetate	10.39	43	925807	9274.17 PPTV	100
24) c-1,2-Dichloroethene	10.77	96	217246	9488.46 PPTV	99
25) Ethyl Acetate	11.24	43	829840	9113.04 PPTV	100
26) 2-Butanone	11.49	43	720657	9089.99 PPTV	100
27) Chloroform	11.10	83	494815	9540.68 PPTV	98
28) Tetrahydrofuran	11.33	42	338077	9112.67 PPTV	100
29) 2,2,4-Trimethylpentane	11.66	57	1198492	9062.05 PPTV	98
30) 1,2-Dichloroethane	12.07	62	364818	9546.73 PPTV	100
31) 1,1,1-Trichloroethane	11.39	97	463215	9604.12 PPTV	99
32) Cyclohexane	11.05	56	389130	8967.25 PPTV	99
33) Carbon Tetrachloride	11.31	117	442431	9073.12 PPTV	100
34) Benzene	11.84	78	624178	9432.29 PPTV	100
35) Heptane	11.75	43	566185	9100.89 PPTV	99
37) TLPH	14.17	TIC	1777329m	9563.78 PPTV	
38) 1,2-Dichloropropane	13.13	63	259964	9530.94 PPTV	95
39) Trichloroethene	12.52	130	262782	9615.30 PPTV	99
40) 1,4-Dioxane	13.40	88	137653	9622.49 PPTV	98
41) Bromodichloromethane	13.17	83	498716	9168.45 PPTV	100
42) c-1,3-Dichloropropene	13.89	75	419841	10375.60 PPTV	99
43) t-1,3-Dichloropropene	14.62	75	354944	12240.81 PPTV	99
44) 1,1,2-Trichloroethane	14.81	97	234931	9925.68 PPTV	99
45) Methyl Isobutyl Ketone	14.56	43	834386	9666.66 PPTV	100
46) Toluene	14.18	92	389791	9776.06 PPTV	100
47) 2-Hexanone	15.51	43	728394	10104.37 PPTV	100
48) 1,2-Dibromoethane	15.36	107	387662	10397.56 PPTV	99
49) Tetrachloroethene	14.63	166	309832	10047.34 PPTV	99
50) Dibromochloromethane	15.04	127	358678	9679.34 PPTV	99
52) Chlorobenzene	15.95	112	467102	9785.95 PPTV	98
53) Ethylbenzene	15.93	106	230535	9634.46 PPTV	98
54) m-Xylene & p-Xylene	16.10	106	573657	20085.42 PPTV	98
55) Styrene	16.67	104	414022	11033.26 PPTV	99
56) o-Xylene	16.62	106	265747	9849.18 PPTV	99
57) Bromoform	16.75	173	356454	9987.51 PPTV	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\111020\207KE015.D Vial: 15
Acq On : 10 Nov 2020 9:16 pm Operator: rgg
Sample : aa63477-scv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 10:02 2020 Quant Results File: 111020.RES

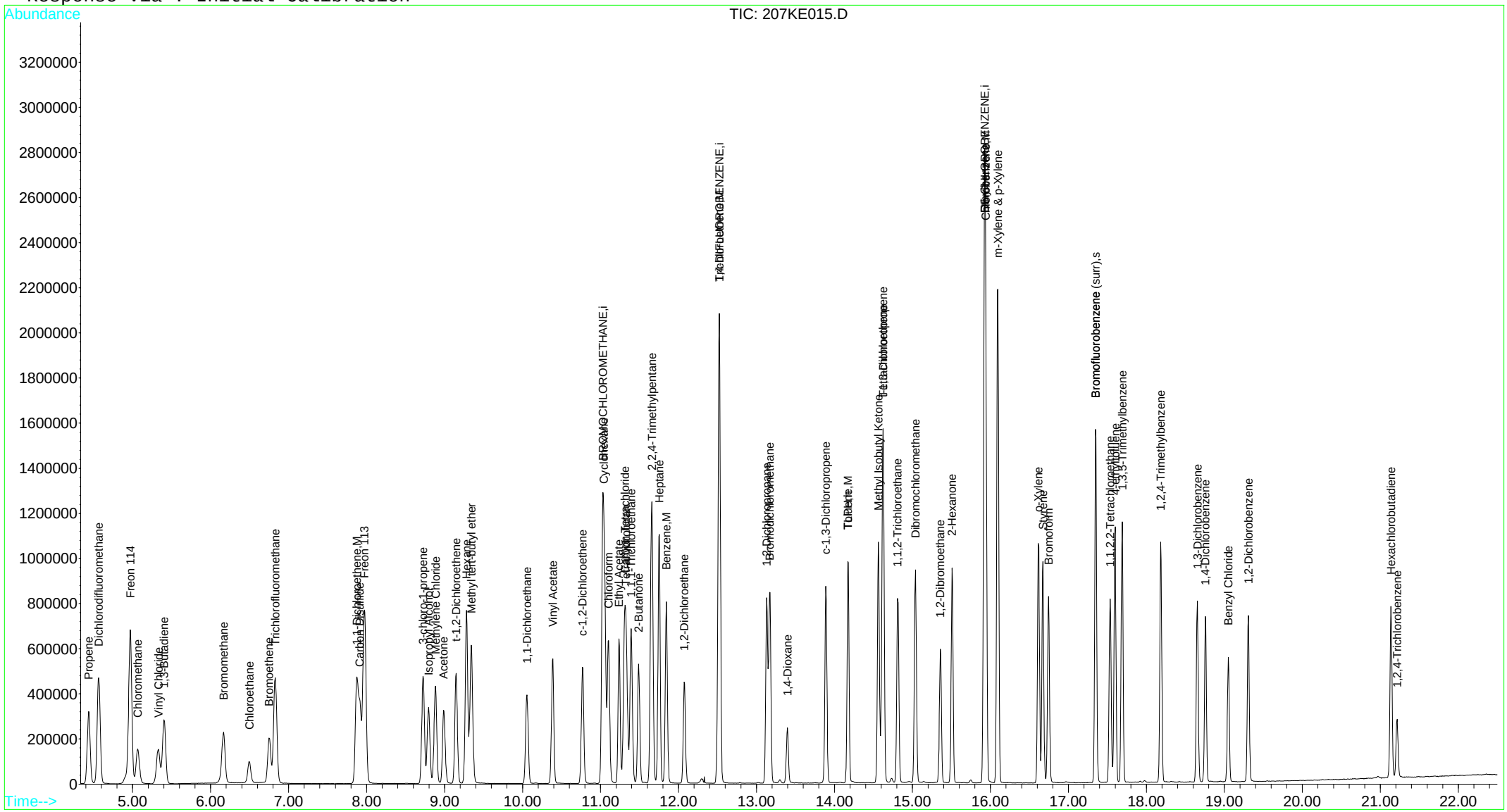
Quant Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration
DataAcq Meth : AIR19JW

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
58) 1,1,2,2-Tetrachloroethane	17.53	83	420689	11176.00	PPTV	100
59) Bromofluorobenzene	17.35	174	381134	31360.11	PPTV	98
61) 4-ethyltoluene	17.60	105	710450	9804.62	PPTV	100
62) 1,3,5-Trimethylbenzene	17.69	105	596472	10584.36	PPTV	99
63) 1,2,4-Trimethylbenzene	18.18	105	563572	10830.82	PPTV	99
64) 1,3-Dichlorobenzene	18.65	146	291908	12124.40	PPTV	99
65) 1,4-Dichlorobenzene	18.76	146	268348	12694.77	PPTV	99
66) Benzyl Chloride	19.05	91	367774	9402.84	PPTV	99
67) 1,2-Dichlorobenzene	19.31	146	269800	12673.68	PPTV	99
68) 1,2,4-Trichlorobenzene	21.22	180	69307	12339.98	PPTV	99
69) Hexachlorobutadiene	21.14	225	129590	11115.26	PPTV	99

Quantitation Report

Data File : C:\HPCHEM\1\DATA\111020\207KE015.D Vial: 15
Acq On : 10 Nov 2020 9:16 pm Operator: rgg
Sample : aa63477-scv1 Inst : OVGCMS7
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 11 10:02 2020 Quant Results File: 111020.RES

Method : C:\HPCHEM\1\METHODS\111020.M (RTE Integrator)
Title : Analysis of VOCs in air by VGCMS-07 (LIMS2011052)
Last Update : Wed Nov 11 10:01:34 2020
Response via : Initial Calibration



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TtNUS, Information Systems Group

Completion Ticket

On 12/8/2020 at 2:26 PM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AD07766A1.txt, TE015AD07766A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2020128_2879797418_ledd_ENCO

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: December 09, 2020

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Thursday, February 18, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN SWMU 090
ENCO Workorder(s): AE01113

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, February 11, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AE01113
SDG: AE01113-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
TO-15	OVGCMS7

Analysis: TO-15

The calibration curve and the continuing calibration standards are in ppbv. Raw data is reported in pptv. Per request, results may be reported in a unit other than ppbv which is obtained through a conversion factor set up in the laboratories' database.

Manual integrations were performed on samples associated with TO-15. All data & explanations are included in the raw data section of the report.

Methylene chloride is a common laboratory contaminant.

Affected Samples: AA64997-CCV1, HMPN-VMP02-PLOT-20210210[AE01113-01], HMPN-VMP01-FIELD-20210210[AE01113-02]
The continuing calibration verification standard exhibited low bias for 1,2,4-trichlorobenzene; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: 1B17031-BS1, 1B17031-BSD1, HMPN-VMP02-PLOT-20210210[AE01113-01], HMPN-VMP01-FIELD-20210210[AE01113-02]
The associated laboratory control sample exhibited low bias for 1,2-dichloroethane; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: 1B17031-BLK1, HMPN-VMP02-PLOT-20210210[AE01113-01], HMPN-VMP01-FIELD-20210210[AE01113-02]
Result for methylene chloride may be biased high due to positive results in the method blank.

Affected Samples: AA64317-SCV1
Recovery for trans-1,3-dichloropropene and 1,2,4-trichlorobenzene was outside acceptance limits. Analytes were not detected in the samples.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-VMP02-PLOT-20210210 **Lab ID: AE01113-01** **Sampled: 02/10/21 17:00** **Received: 02/11/21 14:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	03/12/21	02/17/21 12:39	02/17/21 18:36

Client ID: HMPN-VMP01-FIELD-20210210 **Lab ID: AE01113-02** **Sampled: 02/10/21 17:05** **Received: 02/11/21 14:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	03/12/21	02/17/21 12:39	02/17/21 19:21

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMPN-VMP02-PLOT-20210210 **Lab ID:** AE01113-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	1.3	I	1.2	9.7	ug/m³ Air	TO-15	
Acetone	6.9	I	1.1	7.8	ug/m³ Air	TO-15	
Methylene chloride	1.4	IV	0.92	11	ug/m³ Air	TO-15	J-01, O-01

Client ID: HMPN-VMP01-FIELD-20210210 **Lab ID:** AE01113-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	7.9	I	1.1	8.0	ug/m³ Air	TO-15	
Methylene chloride	1.6	IV	0.94	12	ug/m³ Air	TO-15	J-01, O-01

ANALYTICAL RESULTS

Description: HMPN-VMP02-PLOT-20210210 **Lab Sample ID:** AE01113-01 **Received:** 02/11/21 14:00

Matrix: Air **Sampled:** 02/10/21 17:00 **Work Order:** AE01113

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.4	U	ug/m³ Air	1.32	2.4	18	1B17031	TO-15	02/17/21 18:36	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.3	U	ug/m³ Air	1.32	3.3	23	1B17031	TO-15	02/17/21 18:36	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.5	U	ug/m³ Air	1.32	2.5	18	1B17031	TO-15	02/17/21 18:36	rgg	
1,1-Dichloroethane [75-34-3]^	1.9	U	ug/m³ Air	1.32	1.9	13	1B17031	TO-15	02/17/21 18:36	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.32	2.0	13	1B17031	TO-15	02/17/21 18:36	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.8	U	ug/m³ Air	1.32	3.8	24	1B17031	TO-15	02/17/21 18:36	rgg	J-05
1,2-Dibromoethane [106-93-4]^	3.7	U	ug/m³ Air	1.32	3.7	25	1B17031	TO-15	02/17/21 18:36	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.1	U	ug/m³ Air	1.32	2.1	20	1B17031	TO-15	02/17/21 18:36	rgg	
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.32	2.0	13	1B17031	TO-15	02/17/21 18:36	rgg	A-07, J-06
1,2-Dichloropropane [78-87-5]^	2.4	U	ug/m³ Air	1.32	2.4	15	1B17031	TO-15	02/17/21 18:36	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.2	U	ug/m³ Air	1.32	2.2	20	1B17031	TO-15	02/17/21 18:36	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.32	2.5	20	1B17031	TO-15	02/17/21 18:36	rgg	
2-Butanone [78-93-3]^	**1.3**	I	ug/m³ Air	1.32	1.2	9.7	1B17031	TO-15	02/17/21 18:36	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.32	1.8	14	1B17031	TO-15	02/17/21 18:36	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.8	U	ug/m³ Air	1.32	1.8	14	1B17031	TO-15	02/17/21 18:36	rgg	
Acetone [67-64-1]^	**6.9**	I	ug/m³ Air	1.32	1.1	7.8	1B17031	TO-15	02/17/21 18:36	rgg	
Benzene [71-43-2]^	1.5	U	ug/m³ Air	1.32	1.5	11	1B17031	TO-15	02/17/21 18:36	rgg	
Bromodichloromethane [75-27-4]^	3.0	U	ug/m³ Air	1.32	3.0	22	1B17031	TO-15	02/17/21 18:36	rgg	
Bromoform [75-25-2]^	5.2	U	ug/m³ Air	1.32	5.2	34	1B17031	TO-15	02/17/21 18:36	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.32	1.7	13	1B17031	TO-15	02/17/21 18:36	rgg	
Carbon disulfide [75-15-0]^	1.7	U	ug/m³ Air	1.32	1.7	10	1B17031	TO-15	02/17/21 18:36	rgg	
Carbon tetrachloride [56-23-5]^	2.2	U	ug/m³ Air	1.32	2.2	21	1B17031	TO-15	02/17/21 18:36	rgg	
Chlorobenzene [108-90-7]^	2.0	U	ug/m³ Air	1.32	2.0	15	1B17031	TO-15	02/17/21 18:36	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.32	1.1	8.7	1B17031	TO-15	02/17/21 18:36	rgg	
Chloroform [67-66-3]^	2.4	U	ug/m³ Air	1.32	2.4	16	1B17031	TO-15	02/17/21 18:36	rgg	
Chloromethane [74-87-3]^	1.3	U	ug/m³ Air	1.32	1.3	6.8	1B17031	TO-15	02/17/21 18:36	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.32	2.0	13	1B17031	TO-15	02/17/21 18:36	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.32	2.3	15	1B17031	TO-15	02/17/21 18:36	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.32	1.6	11	1B17031	TO-15	02/17/21 18:36	rgg	
Dibromochloromethane [124-48-1]^	3.7	U	ug/m³ Air	1.32	3.7	28	1B17031	TO-15	02/17/21 18:36	rgg	
Dichlorodifluoromethane [75-71-8]^	3.6	U	ug/m³ Air	1.32	3.6	16	1B17031	TO-15	02/17/21 18:36	rgg	
Ethylbenzene [100-41-4]^	1.7	U	ug/m³ Air	1.32	1.7	14	1B17031	TO-15	02/17/21 18:36	rgg	
Freon 113 [76-13-1]^	3.2	U	ug/m³ Air	1.32	3.2	25	1B17031	TO-15	02/17/21 18:36	rgg	
Methylene chloride [75-09-2]^	**1.4**	IV	ug/m³ Air	1.32	0.92	11	1B17031	TO-15	02/17/21 18:36	rgg	J-01, O-01
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.32	1.8	12	1B17031	TO-15	02/17/21 18:36	rgg	
Styrene [100-42-5]^	2.0	U	ug/m³ Air	1.32	2.0	14	1B17031	TO-15	02/17/21 18:36	rgg	
Tetrachloroethene [127-18-4]^	2.8	U	ug/m³ Air	1.32	2.8	22	1B17031	TO-15	02/17/21 18:36	rgg	
Toluene [108-88-3]^	1.8	U	ug/m³ Air	1.32	1.8	12	1B17031	TO-15	02/17/21 18:36	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.32	1.7	13	1B17031	TO-15	02/17/21 18:36	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.0	U	ug/m³ Air	1.32	2.0	15	1B17031	TO-15	02/17/21 18:36	rgg	
Trichloroethene [79-01-6]^	2.5	U	ug/m³ Air	1.32	2.5	18	1B17031	TO-15	02/17/21 18:36	rgg	
Trichlorofluoromethane [75-69-4]^	2.5	U	ug/m³ Air	1.32	2.5	19	1B17031	TO-15	02/17/21 18:36	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.32	1.9	8.4	1B17031	TO-15	02/17/21 18:36	rgg	
Xylenes (Total) [1330-20-7]^	3.8	U	ug/m³ Air	1.32	3.8	14	1B17031	TO-15	02/17/21 18:36	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description:	HMPN-VMP02-PLOT-20210210	**Lab Sample ID:**	AE01113-01	**Received:**	02/11/21 14:00
Matrix:	Air	**Sampled:**	02/10/21 17:00	**Work Order:**	AE01113
Project:	NASA KSC HMFN SWMU 090	**Sampled By:**	Melissa Bennett	**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*25*	*1*	*31.0*	*81 %*	*70-130*	*1B17031*	*TO-15*	*02/17/21 18:36*	*rgg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-VMP01-FIELD-20210210 **Lab Sample ID:** AE01113-02 **Received:** 02/11/21 14:00

Matrix: Air **Sampled:** 02/10/21 17:05 **Work Order:** AE01113

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.5	U	ug/m³ Air	1.35	2.5	18	1B17031	TO-15	02/17/21 19:21	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.3	U	ug/m³ Air	1.35	3.3	23	1B17031	TO-15	02/17/21 19:21	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.6	U	ug/m³ Air	1.35	2.6	18	1B17031	TO-15	02/17/21 19:21	rgg	
1,1-Dichloroethane [75-34-3]^	2.0	U	ug/m³ Air	1.35	2.0	14	1B17031	TO-15	02/17/21 19:21	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.35	2.0	13	1B17031	TO-15	02/17/21 19:21	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.9	U	ug/m³ Air	1.35	3.9	25	1B17031	TO-15	02/17/21 19:21	rgg	J-05
1,2-Dibromoethane [106-93-4]^	3.7	U	ug/m³ Air	1.35	3.7	26	1B17031	TO-15	02/17/21 19:21	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.2	U	ug/m³ Air	1.35	2.2	20	1B17031	TO-15	02/17/21 19:21	rgg	
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.35	2.0	14	1B17031	TO-15	02/17/21 19:21	rgg	A-07, J-06
1,2-Dichloropropane [78-87-5]^	2.5	U	ug/m³ Air	1.35	2.5	16	1B17031	TO-15	02/17/21 19:21	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.3	U	ug/m³ Air	1.35	2.3	20	1B17031	TO-15	02/17/21 19:21	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.35	2.5	20	1B17031	TO-15	02/17/21 19:21	rgg	
2-Butanone [78-93-3]^	1.3	U	ug/m³ Air	1.35	1.3	10	1B17031	TO-15	02/17/21 19:21	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.35	1.8	14	1B17031	TO-15	02/17/21 19:21	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.35	1.9	14	1B17031	TO-15	02/17/21 19:21	rgg	
Acetone [67-64-1]^	**7.9**	I	ug/m³ Air	1.35	1.1	8.0	1B17031	TO-15	02/17/21 19:21	rgg	
Benzene [71-43-2]^	1.6	U	ug/m³ Air	1.35	1.6	11	1B17031	TO-15	02/17/21 19:21	rgg	
Bromodichloromethane [75-27-4]^	3.1	U	ug/m³ Air	1.35	3.1	23	1B17031	TO-15	02/17/21 19:21	rgg	
Bromoform [75-25-2]^	5.3	U	ug/m³ Air	1.35	5.3	35	1B17031	TO-15	02/17/21 19:21	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.35	1.7	13	1B17031	TO-15	02/17/21 19:21	rgg	
Carbon disulfide [75-15-0]^	1.8	U	ug/m³ Air	1.35	1.8	11	1B17031	TO-15	02/17/21 19:21	rgg	
Carbon tetrachloride [56-23-5]^	2.3	U	ug/m³ Air	1.35	2.3	21	1B17031	TO-15	02/17/21 19:21	rgg	
Chlorobenzene [108-90-7]^	2.1	U	ug/m³ Air	1.35	2.1	16	1B17031	TO-15	02/17/21 19:21	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.35	1.1	8.9	1B17031	TO-15	02/17/21 19:21	rgg	
Chloroform [67-66-3]^	2.5	U	ug/m³ Air	1.35	2.5	16	1B17031	TO-15	02/17/21 19:21	rgg	
Chloromethane [74-87-3]^	1.3	U	ug/m³ Air	1.35	1.3	7.0	1B17031	TO-15	02/17/21 19:21	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.35	2.0	13	1B17031	TO-15	02/17/21 19:21	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.35	2.3	15	1B17031	TO-15	02/17/21 19:21	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.35	1.6	12	1B17031	TO-15	02/17/21 19:21	rgg	
Dibromochloromethane [124-48-1]^	3.8	U	ug/m³ Air	1.35	3.8	29	1B17031	TO-15	02/17/21 19:21	rgg	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/m³ Air	1.35	3.7	17	1B17031	TO-15	02/17/21 19:21	rgg	
Ethylbenzene [100-41-4]^	1.8	U	ug/m³ Air	1.35	1.8	15	1B17031	TO-15	02/17/21 19:21	rgg	
Freon 113 [76-13-1]^	3.3	U	ug/m³ Air	1.35	3.3	26	1B17031	TO-15	02/17/21 19:21	rgg	
Methylene chloride [75-09-2]^	**1.6**	IV	ug/m³ Air	1.35	0.94	12	1B17031	TO-15	02/17/21 19:21	rgg	J-01, O-01
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.35	1.8	12	1B17031	TO-15	02/17/21 19:21	rgg	
Styrene [100-42-5]^	2.1	U	ug/m³ Air	1.35	2.1	14	1B17031	TO-15	02/17/21 19:21	rgg	
Tetrachloroethene [127-18-4]^	2.8	U	ug/m³ Air	1.35	2.8	23	1B17031	TO-15	02/17/21 19:21	rgg	
Toluene [108-88-3]^	1.9	U	ug/m³ Air	1.35	1.9	13	1B17031	TO-15	02/17/21 19:21	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.35	1.7	13	1B17031	TO-15	02/17/21 19:21	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.1	U	ug/m³ Air	1.35	2.1	15	1B17031	TO-15	02/17/21 19:21	rgg	
Trichloroethene [79-01-6]^	2.5	U	ug/m³ Air	1.35	2.5	18	1B17031	TO-15	02/17/21 19:21	rgg	
Trichlorofluoromethane [75-69-4]^	2.6	U	ug/m³ Air	1.35	2.6	19	1B17031	TO-15	02/17/21 19:21	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.35	1.9	8.6	1B17031	TO-15	02/17/21 19:21	rgg	
Xylenes (Total) [1330-20-7]^	3.9	U	ug/m³ Air	1.35	3.9	15	1B17031	TO-15	02/17/21 19:21	rgg	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes

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ANALYTICAL RESULTS

Description:	HMPN-VMP01-FIELD-20210210	**Lab Sample ID:**	AE01113-02	**Received:**	02/11/21 14:00
Matrix:	Air	**Sampled:**	02/10/21 17:05	**Work Order:**	AE01113
Project:	NASA KSC HMFN SWMU 090	**Sampled By:**	Melissa Bennett	**% Solids:**	

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*26*	*1*	*31.0*	*83 %*	*70-130*	*1B17031*	*TO-15*	*02/17/21 19:21*	*rgg*	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B17031 - NO PREP 2

Blank (1B17031-BLK1) Prepared: 02/17/2021 12:39 Analyzed: 02/17/2021 17:51

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1,2,2-Tetrachloroethane	2.5	U	17	ug/m³ Air							
1,1,2-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1-Dichloroethane	1.5	U	10	ug/m³ Air							
1,1-Dichloroethene	1.5	U	9.9	ug/m³ Air							
1,2,4-Trichlorobenzene	2.9	U	19	ug/m³ Air							
1,2-Dibromoethane	2.8	U	19	ug/m³ Air							
1,2-Dichlorobenzene	1.6	U	15	ug/m³ Air							
1,2-Dichloroethane	1.5	U	10	ug/m³ Air							
1,2-Dichloropropane	1.8	U	12	ug/m³ Air							
1,3-Dichlorobenzene	1.7	U	15	ug/m³ Air							
1,4-Dichlorobenzene	1.9	U	15	ug/m³ Air							
2-Butanone	0.94	U	7.4	ug/m³ Air							
2-Hexanone	1.4	U	10	ug/m³ Air							
4-Methyl-2-pentanone	1.4	U	10	ug/m³ Air							
Acetone	0.83	U	5.9	ug/m³ Air							
Benzene	1.2	U	8.0	ug/m³ Air							
Bromodichloromethane	2.3	U	17	ug/m³ Air							
Bromoform	3.9	U	26	ug/m³ Air							
Bromomethane	1.3	U	9.7	ug/m³ Air							
Carbon disulfide	1.3	U	7.8	ug/m³ Air							
Carbon tetrachloride	1.7	U	16	ug/m³ Air							
Chlorobenzene	1.5	U	12	ug/m³ Air							
Chloroethane	0.84	U	6.6	ug/m³ Air							
Chloroform	1.9	U	12	ug/m³ Air							
Chloromethane	0.99	U	5.2	ug/m³ Air							
cis-1,2-Dichloroethene	1.5	U	9.9	ug/m³ Air							
cis-1,3-Dichloropropene	1.7	U	11	ug/m³ Air							
Cyclohexane	1.2	U	8.6	ug/m³ Air							
Dibromochloromethane	2.8	U	21	ug/m³ Air							
Dichlorodifluoromethane	2.7	U	12	ug/m³ Air							
Ethylbenzene	1.3	U	11	ug/m³ Air							
Freon 113	2.5	U	19	ug/m³ Air							
Methylene chloride	**0.78**	**I**	8.7	ug/m³ Air							J-01, O-01
Methyl-tert-butyl ether	1.3	U	9.0	ug/m³ Air							
Styrene	1.5	U	11	ug/m³ Air							
Tetrachloroethene	2.1	U	17	ug/m³ Air							
Toluene	1.4	U	9.4	ug/m³ Air							
trans-1,2-Dichloroethene	1.3	U	9.9	ug/m³ Air							
trans-1,3-Dichloropropene	1.5	U	11	ug/m³ Air							
Trichloroethene	1.9	U	13	ug/m³ Air							
Trichlorofluoromethane	1.9	U	14	ug/m³ Air							
Vinyl chloride	1.4	U	6.4	ug/m³ Air							
Xylenes (Total)	2.9	U	11	ug/m³ Air							
4-Bromofluorobenzene	*25*			*ppbv*	*31.0*		*80*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B17031 - NO PREP 2 - Continued

LCS (1B17031-BS1) Prepared: 02/17/2021 12:39 Analyzed: 02/17/2021 15:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	40		14	ug/m³ Air	54.6		73	70-130			
1,1,2,2-Tetrachloroethane	64		17	ug/m³ Air	68.7		93	52-163			
1,1,2-Trichloroethane	51		14	ug/m³ Air	54.6		93	70-134			
1,1-Dichloroethane	35		10	ug/m³ Air	40.5		86	70-130			
1,1-Dichloroethene	30		9.9	ug/m³ Air	39.7		76	67-142			
1,2,4-Trichlorobenzene	30		19	ug/m³ Air	74.2		40	22-180			
1,2-Dibromoethane	70		19	ug/m³ Air	76.8		92	70-141			
1,2-Dichlorobenzene	46		15	ug/m³ Air	60.1		77	37-180			
1,2-Dichloroethane	27		10	ug/m³ Air	40.5		66	70-130			A-07, J-06
1,2-Dichloropropane	41		12	ug/m³ Air	46.2		88	70-130			
1,3-Dichlorobenzene	44		15	ug/m³ Air	60.1		73	47-178			
1,4-Dichlorobenzene	40		15	ug/m³ Air	60.1		66	45-180			
2-Butanone	25		7.4	ug/m³ Air	29.5		85	70-130			
2-Hexanone	34		10	ug/m³ Air	41.0		83	68-140			
4-Methyl-2-pentanone	34		10	ug/m³ Air	41.0		84	70-135			
Acetone	17		5.9	ug/m³ Air	23.8		71	65-130			
Benzene	31		8.0	ug/m³ Air	32.0		98	70-133			
Bromodichloromethane	51		17	ug/m³ Air	67.0		76	70-130			
Bromoform	83		26	ug/m³ Air	103		81	62-149			
Bromomethane	28		9.7	ug/m³ Air	38.8		72	69-130			
Carbon disulfide	27		7.8	ug/m³ Air	31.1		86	66-137			
Carbon tetrachloride	27		16	ug/m³ Air	62.9		43	22-166			
Chlorobenzene	43		12	ug/m³ Air	46.0		93	70-134			
Chloroethane	18		6.6	ug/m³ Air	26.4		69	69-131			
Chloroform	42		12	ug/m³ Air	48.8		85	70-130			
Chloromethane	15		5.2	ug/m³ Air	20.7		74	55-142			
cis-1,2-Dichloroethene	39		9.9	ug/m³ Air	39.6		97	70-130			
cis-1,3-Dichloropropene	43		11	ug/m³ Air	45.4		94	70-137			
Cyclohexane	30		8.6	ug/m³ Air	34.4		89	70-130			
Dibromochloromethane	69		21	ug/m³ Air	85.2		81	70-130			
Dichlorodifluoromethane	33		12	ug/m³ Air	49.5		67	61-137			
Ethylbenzene	47		11	ug/m³ Air	43.4		108	70-137			
Freon 113	62		19	ug/m³ Air	76.6		81	67-140			
m,p-Xylenes	100		22	ug/m³ Air	86.8		116	69-142			
Methylene chloride	35		8.7	ug/m³ Air	34.7		102	59-136			
Methyl-tert-butyl ether	30		9.0	ug/m³ Air	36.1		83	67-130			
o-Xylene	45		11	ug/m³ Air	43.4		105	70-140			
Styrene	45		11	ug/m³ Air	42.6		105	56-150			
Tetrachloroethene	54		17	ug/m³ Air	67.8		79	70-141			
Toluene	40		9.4	ug/m³ Air	37.7		106	70-138			
trans-1,2-Dichloroethene	31		9.9	ug/m³ Air	39.6		79	70-130			
trans-1,3-Dichloropropene	55		11	ug/m³ Air	45.4		121	59-166			
Trichloroethene	48		13	ug/m³ Air	53.7		90	70-130			
Trichlorofluoromethane	50		14	ug/m³ Air	56.2		88	46-161			
Vinyl chloride	20		6.4	ug/m³ Air	25.6		78	53-148			
4-Bromofluorobenzene	*29*			*ppbv*	*31.0*		*93*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B17031 - NO PREP 2 - Continued

LCS Dup (1B17031-BSD1) Prepared: 02/17/2021 12:39 Analyzed: 02/17/2021 16:28

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	42		14	ug/m³ Air	54.6		77	70-130	6	25	
1,1,2,2-Tetrachloroethane	67		17	ug/m³ Air	68.7		97	52-163	5	25	
1,1,2-Trichloroethane	54		14	ug/m³ Air	54.6		99	70-134	6	25	
1,1-Dichloroethane	37		10	ug/m³ Air	40.5		90	70-130	5	25	
1,1-Dichloroethene	31		9.9	ug/m³ Air	39.7		79	67-142	4	25	
1,2,4-Trichlorobenzene	29		19	ug/m³ Air	74.2		39	22-180	2	25	
1,2-Dibromoethane	73		19	ug/m³ Air	76.8		95	70-141	4	25	
1,2-Dichlorobenzene	48		15	ug/m³ Air	60.1		80	37-180	4	25	
1,2-Dichloroethane	28		10	ug/m³ Air	40.5		69	70-130	4	25	A-07, J-06
1,2-Dichloropropane	43		12	ug/m³ Air	46.2		92	70-130	4	25	
1,3-Dichlorobenzene	46		15	ug/m³ Air	60.1		76	47-178	4	25	
1,4-Dichlorobenzene	41		15	ug/m³ Air	60.1		68	45-180	3	25	
2-Butanone	26		7.4	ug/m³ Air	29.5		88	70-130	4	25	
2-Hexanone	35		10	ug/m³ Air	41.0		86	68-140	4	25	
4-Methyl-2-pentanone	36		10	ug/m³ Air	41.0		88	70-135	5	25	
Acetone	18		5.9	ug/m³ Air	23.8		74	65-130	5	25	
Benzene	33		8.0	ug/m³ Air	32.0		102	70-133	4	25	
Bromodichloromethane	53		17	ug/m³ Air	67.0		79	70-130	4	25	
Bromoform	86		26	ug/m³ Air	103		84	62-149	4	25	
Bromomethane	30		9.7	ug/m³ Air	38.8		77	69-130	7	25	
Carbon disulfide	28		7.8	ug/m³ Air	31.1		91	66-137	5	25	
Carbon tetrachloride	28		16	ug/m³ Air	62.9		45	22-166	5	25	
Chlorobenzene	44		12	ug/m³ Air	46.0		96	70-134	3	25	
Chloroethane	19		6.6	ug/m³ Air	26.4		74	69-131	6	25	
Chloroform	43		12	ug/m³ Air	48.8		88	70-130	3	25	
Chloromethane	15		5.2	ug/m³ Air	20.7		74	55-142	1	25	
cis-1,2-Dichloroethene	40		9.9	ug/m³ Air	39.6		102	70-130	4	25	
cis-1,3-Dichloropropene	44		11	ug/m³ Air	45.4		97	70-137	4	25	
Cyclohexane	32		8.6	ug/m³ Air	34.4		93	70-130	5	25	
Dibromochloromethane	72		21	ug/m³ Air	85.2		85	70-130	5	25	
Dichlorodifluoromethane	35		12	ug/m³ Air	49.5		70	61-137	5	25	
Ethylbenzene	49		11	ug/m³ Air	43.4		113	70-137	5	25	
Freon 113	65		19	ug/m³ Air	76.6		85	67-140	5	25	
m,p-Xylenes	110		22	ug/m³ Air	86.8		121	69-142	5	25	
Methylene chloride	37		8.7	ug/m³ Air	34.7		106	59-136	4	25	
Methyl-tert-butyl ether	31		9.0	ug/m³ Air	36.1		86	67-130	4	25	
o-Xylene	47		11	ug/m³ Air	43.4		109	70-140	4	25	
Styrene	47		11	ug/m³ Air	42.6		111	56-150	6	25	
Tetrachloroethene	56		17	ug/m³ Air	67.8		83	70-141	4	25	
Toluene	42		9.4	ug/m³ Air	37.7		111	70-138	4	25	
trans-1,2-Dichloroethene	33		9.9	ug/m³ Air	39.6		83	70-130	5	25	
trans-1,3-Dichloropropene	58		11	ug/m³ Air	45.4		127	59-166	5	25	
Trichloroethene	50		13	ug/m³ Air	53.7		94	70-130	5	25	
Trichlorofluoromethane	53		14	ug/m³ Air	56.2		94	46-161	6	25	
Vinyl chloride	20		6.4	ug/m³ Air	25.6		80	53-148	3	25	
4-Bromofluorobenzene	*29*			*ppbv*	*31.0*		*92*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
A-07	Analyte biased low in LCS but detected in the reporting limit standard. Since the analyte in the associated sample was not detected, there is no impact on data quality.
J-01	Result may be biased high due to positive results in the associated method blank at a concentration above the MDL and/or greater than one-half the MRL.
J-05	Result may be biased low. Associated calibration verification standard did not meet the minimum control limit.
J-06	The associated laboratory control sample exhibited low bias; the reported result should be considered to be a minimum estimate.
O-01	This compound is a common laboratory contaminant.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

Tetra Tech, Inc.

CHAIN OF CUSTODY NUMBER ~~AE00180~~ AE01113 No. 2228 **PAGE** 1 **OF** 1

USP 2/11/21

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	HMFN	Chris Hook	412-921-8790	Enco
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
MB Melissa Bennett		Melissa Bennett	321-914-9394	
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: VOC TO-15 – Summa								COMMENTS
2/10	1700	HMPN-VMP02-PLOT-~~2020~~ 20210210	VMP2	—	—	Air	G	1			X								
2/10	1705	HMPN-VMP01-FIELD-20210210	VMP1	—	—	Air	G	1			X								
~~2/11~~	~~1000~~	~~CHP-ROLLOFF-20210211~~	ROLLOFF	—	—	So	C	4			MB								

MB

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY MB	2-11-21	1400	1. RECEIVED BY	2/11/21	1400
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

Box 27.79

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

2/11/2021

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN SWMU 090 / 112G08982
Purchase Order # : 1170718

Lab Reference # : AE01113 Lab Receipt Date: 11-Feb-21 14:00
Anticipated ***(Estimated)*** Completion Date: 18-Feb-21 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN SWMU 090
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-VMP02-PLOT-20210210(Lab ID: AE01113-01), Matrix: Air, Sampled: 10-Feb-21 17:00 (GMT-05:00) Eastern Time (US &			
Sample Comments: 8hr regulator			
TO15 (SUMMA)	5	12-Mar-21 23:59	Received
Sample ID: HMPN-VMP01-FIELD-20210210(Lab ID: AE01113-02), Matrix: Air, Sampled: 10-Feb-21 17:05 (GMT-05:00) Eastern Time (US &			
Sample Comments: 8hr regulator			
TO15 (SUMMA)	5	12-Mar-21 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AE01113-TE015

CLASS: 06_VOA_AIR

METHOD: TO-15

ANALYSES DATA PACKAGE COVER PAGE

TO-15

Laboratory: ENCO Orlando

SDG: AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Client Sample Id:	Lab Sample Id:
HMPN-VMP02-PLOT-20210210	AE01113-01
HMPN-VMP01-FIELD-20210210	AE01113-02

ORGANIC ANALYSIS DATA SHEET

TO-15

HMPN-VMP02-PLOT-20210210

Laboratory: ENCO Orlando SDG: AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Air Laboratory ID: AE01113-01 File ID: 217BL012.D

Sampled: 02/10/21 17:00 Prepared: 02/17/21 12:39 Analyzed: 02/17/21 18:36

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 1B17031 Sequence: AA64997 Calibration: 2101005 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.32	3.6	UD	3.6	16
74-87-3	Chloromethane	1.32	1.3	UD	1.3	6.8
75-01-4	Vinyl chloride	1.32	1.9	UD	1.9	8.4
74-83-9	Bromomethane	1.32	1.7	UD	1.7	13
75-00-3	Chloroethane	1.32	1.1	UD	1.1	8.7
75-69-4	Trichlorofluoromethane	1.32	2.5	UD	2.5	19
75-34-3	1,1-Dichloroethane	1.32	1.9	UD	1.9	13
67-64-1	Acetone	1.32	6.9	JD	1.1	7.8
75-15-0	Carbon disulfide	1.32	1.7	UD	1.7	10
75-09-2	Methylene chloride	1.32	1.4	JBD	0.92	11
76-13-1	Freon 113	1.32	3.2	UD	3.2	25
156-60-5	trans-1,2-Dichloroethene	1.32	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.32	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.32	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.32	2.0	UD	2.0	13
78-93-3	2-Butanone	1.32	1.3	JD	1.2	9.7
67-66-3	Chloroform	1.32	2.4	UD	2.4	16
107-06-2	1,2-Dichloroethane	1.32	2.0	UD	2.0	13
71-55-6	1,1,1-Trichloroethane	1.32	2.4	UD	2.4	18
110-82-7	Cyclohexane	1.32	1.6	UD	1.6	11
56-23-5	Carbon tetrachloride	1.32	2.2	UD	2.2	21
71-43-2	Benzene	1.32	1.5	UD	1.5	11
78-87-5	1,2-Dichloropropane	1.32	2.4	UD	2.4	15
79-01-6	Trichloroethene	1.32	2.5	UD	2.5	18
75-27-4	Bromodichloromethane	1.32	3.0	UD	3.0	22
10061-01-5	cis-1,3-Dichloropropene	1.32	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.32	2.0	UD	2.0	15
79-00-5	1,1,2-Trichloroethane	1.32	2.5	UD	2.5	18
108-10-1	4-Methyl-2-pentanone	1.32	1.8	UD	1.8	14
108-88-3	Toluene	1.32	1.8	UD	1.8	12
591-78-6	2-Hexanone	1.32	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.32	3.7	UD	3.7	25
127-18-4	Tetrachloroethene	1.32	2.8	UD	2.8	22
124-48-1	Dibromochloromethane	1.32	3.7	UD	3.7	28
108-90-7	Chlorobenzene	1.32	2.0	UD	2.0	15
100-41-4	Ethylbenzene	1.32	1.7	UD	1.7	14
1330-20-7	Xylenes (Total)	1.32	3.8	UD	3.8	14
100-42-5	Styrene	1.32	2.0	UD	2.0	14
75-25-2	Bromoform	1.32	5.2	UD	5.2	34
79-34-5	1,1,2,2-Tetrachloroethane	1.32	3.3	UD	3.3	23
541-73-1	1,3-Dichlorobenzene	1.32	2.2	UD	2.2	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMPN-VMP02-PLOT-20210210

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Air
Laboratory ID: AE01113-01
File ID: 217BL012.D
Sampled: 02/10/21 17:00
Prepared: 02/17/21 12:39
Analyzed: 02/17/21 18:36
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 1B17031
Sequence: AA64997
Calibration: 2101005
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.32	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.32	2.1	UD	2.1	20
120-82-1	1,2,4-Trichlorobenzene	1.32	3.8	UD	3.8	24

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	25	81	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	302345	10.97	368179	11	
1,4-Difluorobenzene	1070379	12.47	1236730	12.5	
Chlorobenzene-d5	752591	15.87	944742	15.9	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

TO-15

HMPN-VMP01-FIELD-20210210

Laboratory: ENCO Orlando SDG: AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Air Laboratory ID: AE01113-02 File ID: 217BL013.D

Sampled: 02/10/21 17:05 Prepared: 02/17/21 12:39 Analyzed: 02/17/21 19:21

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 1B17031 Sequence: AA64997 Calibration: 2101005 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.35	3.7	UD	3.7	17
74-87-3	Chloromethane	1.35	1.3	UD	1.3	7.0
75-01-4	Vinyl chloride	1.35	1.9	UD	1.9	8.6
74-83-9	Bromomethane	1.35	1.7	UD	1.7	13
75-00-3	Chloroethane	1.35	1.1	UD	1.1	8.9
75-69-4	Trichlorofluoromethane	1.35	2.6	UD	2.6	19
75-34-3	1,1-Dichloroethane	1.35	2.0	UD	2.0	14
67-64-1	Acetone	1.35	7.9	JD	1.1	8.0
75-15-0	Carbon disulfide	1.35	1.8	UD	1.8	11
75-09-2	Methylene chloride	1.35	1.6	JBD	0.94	12
76-13-1	Freon 113	1.35	3.3	UD	3.3	26
156-60-5	trans-1,2-Dichloroethene	1.35	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.35	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.35	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.35	2.0	UD	2.0	13
78-93-3	2-Butanone	1.35	1.3	UD	1.3	10
67-66-3	Chloroform	1.35	2.5	UD	2.5	16
107-06-2	1,2-Dichloroethane	1.35	2.0	UD	2.0	14
71-55-6	1,1,1-Trichloroethane	1.35	2.5	UD	2.5	18
110-82-7	Cyclohexane	1.35	1.6	UD	1.6	12
56-23-5	Carbon tetrachloride	1.35	2.3	UD	2.3	21
71-43-2	Benzene	1.35	1.6	UD	1.6	11
78-87-5	1,2-Dichloropropane	1.35	2.5	UD	2.5	16
79-01-6	Trichloroethene	1.35	2.5	UD	2.5	18
75-27-4	Bromodichloromethane	1.35	3.1	UD	3.1	23
10061-01-5	cis-1,3-Dichloropropene	1.35	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.35	2.1	UD	2.1	15
79-00-5	1,1,2-Trichloroethane	1.35	2.6	UD	2.6	18
108-10-1	4-Methyl-2-pentanone	1.35	1.9	UD	1.9	14
108-88-3	Toluene	1.35	1.9	UD	1.9	13
591-78-6	2-Hexanone	1.35	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.35	3.7	UD	3.7	26
127-18-4	Tetrachloroethene	1.35	2.8	UD	2.8	23
124-48-1	Dibromochloromethane	1.35	3.8	UD	3.8	29
108-90-7	Chlorobenzene	1.35	2.1	UD	2.1	16
100-41-4	Ethylbenzene	1.35	1.8	UD	1.8	15
1330-20-7	Xylenes (Total)	1.35	3.9	UD	3.9	15
100-42-5	Styrene	1.35	2.1	UD	2.1	14
75-25-2	Bromoform	1.35	5.3	UD	5.3	35
79-34-5	1,1,2,2-Tetrachloroethane	1.35	3.3	UD	3.3	23
541-73-1	1,3-Dichlorobenzene	1.35	2.3	UD	2.3	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMPN-VMP01-FIELD-20210210

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Air
Laboratory ID: AE01113-02
File ID: 217BL013.D
Sampled: 02/10/21 17:05
Prepared: 02/17/21 12:39
Analyzed: 02/17/21 19:21
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 1B17031
Sequence: AA64997
Calibration: 2101005
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.35	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.35	2.2	UD	2.2	20
120-82-1	1,2,4-Trichlorobenzene	1.35	3.9	UD	3.9	25

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	26	83	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	311949	10.97	368179	11	
1,4-Difluorobenzene	1111506	12.47	1236730	12.5	
Chlorobenzene-d5	779129	15.87	944742	15.9	

* Values outside of QC limits

HOLDING TIME SUMMARY

TO-15

Laboratory: ENCO Orlando

SDG: AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-VMP02-PLOT-20210210	02/10/21 17:00	02/11/21 14:00	02/17/21 12:39	6.82	NA	02/17/21 18:36	7.00	30.00	
HMPN-VMP01-FIELD-20210210	02/10/21 17:05	02/11/21 14:00	02/17/21 12:39	6.82	NA	02/17/21 19:21	7.00	30.00	

PREPARATION BATCH SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Batch: 1B17031 Batch Matrix: Air Preparation: NO PREP 2

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1B17031-BLK1	217BL011.D	02/17/21 12:39	
LCS	1B17031-BS1	217BL008.D	02/17/21 12:39	
LCS Dup	1B17031-BSD1	217BL009.D	02/17/21 12:39	
HMPN-VMP02-PLOT-20210210	AE01113-01	217BL012.D	02/17/21 12:39	
HMPN-VMP01-FIELD-20210210	AE01113-02	217BL013.D	02/17/21 12:39	

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Air	Laboratory ID:	1B17031-BLK1	File ID:	217BL011.D
Prepared:	02/17/21 12:39	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	02/17/21 17:51	Instrument:	OVGCMS7		
Batch:	1B17031	Sequence:	AA64997	Calibration:	2101005

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
75-71-8	Dichlorodifluoromethane	2.7	U
74-87-3	Chloromethane	0.99	U
75-01-4	Vinyl chloride	1.4	U
74-83-9	Bromomethane	1.3	U
75-00-3	Chloroethane	0.84	U
75-69-4	Trichlorofluoromethane	1.9	U
75-34-3	1,1-Dichloroethane	1.5	U
67-64-1	Acetone	0.83	U
75-15-0	Carbon disulfide	1.3	U
75-09-2	Methylene chloride	0.78	J
76-13-1	Freon 113	2.5	U
156-60-5	trans-1,2-Dichloroethene	1.3	U
1634-04-4	Methyl-tert-butyl ether	1.3	U
75-35-4	1,1-Dichloroethene	1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	U
78-93-3	2-Butanone	0.94	U
67-66-3	Chloroform	1.9	U
107-06-2	1,2-Dichloroethane	1.5	U
71-55-6	1,1,1-Trichloroethane	1.9	U
110-82-7	Cyclohexane	1.2	U
56-23-5	Carbon tetrachloride	1.7	U
71-43-2	Benzene	1.2	U
78-87-5	1,2-Dichloropropane	1.8	U
79-01-6	Trichloroethene	1.9	U
75-27-4	Bromodichloromethane	2.3	U
10061-01-5	cis-1,3-Dichloropropene	1.7	U
10061-02-6	trans-1,3-Dichloropropene	1.5	U
79-00-5	1,1,2-Trichloroethane	1.9	U
108-10-1	4-Methyl-2-pentanone	1.4	U
108-88-3	Toluene	1.4	U

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Air	Laboratory ID:	1B17031-BLK1	File ID:	217BL011.D
Prepared:	02/17/21 12:39	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	02/17/21 17:51	Instrument:	OVGCMS7		
Batch:	1B17031	Sequence:	AA64997	Calibration:	2101005

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
591-78-6	2-Hexanone	1.4	U
106-93-4	1,2-Dibromoethane	2.8	U
127-18-4	Tetrachloroethene	2.1	U
124-48-1	Dibromochloromethane	2.8	U
108-90-7	Chlorobenzene	1.5	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (Total)	2.9	U
100-42-5	Styrene	1.5	U
75-25-2	Bromoform	3.9	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	1.7	U
106-46-7	1,4-Dichlorobenzene	1.9	U
95-50-1	1,2-Dichlorobenzene	1.6	U
120-82-1	1,2,4-Trichlorobenzene	2.9	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	25	80	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	307781	10.97	368179	11	
1,4-Difluorobenzene	1095011	12.47	1236730	12.5	
Chlorobenzene-d5	769211	15.87	944742	15.9	

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1B17031	Laboratory ID:	1B17031-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	49.5	33	67	61 - 137
Chloromethane	20.7	15	74	55 - 142
Vinyl chloride	25.6	20	78	53 - 148
Bromomethane	38.8	28	72	69 - 130
Chloroethane	26.4	18	69	69 - 131
Trichlorofluoromethane	56.2	50	88	46 - 161
1,1-Dichloroethane	40.5	35	86	70 - 130
Acetone	23.8	17	71	65 - 130
Carbon disulfide	31.1	27	86	66 - 137
Methylene chloride	34.7	35	102	59 - 136
Freon 113	76.6	62	81	67 - 140
trans-1,2-Dichloroethene	39.6	31	79	70 - 130
Methyl-tert-butyl ether	36.1	30	83	67 - 130
1,1-Dichloroethene	39.7	30	76	67 - 142
cis-1,2-Dichloroethene	39.6	39	97	70 - 130
2-Butanone	29.5	25	85	70 - 130
Chloroform	48.8	42	85	70 - 130
1,2-Dichloroethane	40.5	27	66 *	70 - 130
1,1,1-Trichloroethane	54.6	40	73	70 - 130
Cyclohexane	34.4	30	89	70 - 130
Carbon tetrachloride	62.9	27	43	22 - 166
Benzene	32.0	31	98	70 - 133
1,2-Dichloropropane	46.2	41	88	70 - 130
Trichloroethene	53.7	48	90	70 - 130
Bromodichloromethane	67.0	51	76	70 - 130
cis-1,3-Dichloropropene	45.4	43	94	70 - 137
trans-1,3-Dichloropropene	45.4	55	121	59 - 166
1,1,2-Trichloroethane	54.6	51	93	70 - 134
4-Methyl-2-pentanone	41.0	34	84	70 - 135
Toluene	37.7	40	106	70 - 138

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1B17031	Laboratory ID:	1B17031-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
2-Hexanone	41.0	34	83	68 - 140
1,2-Dibromoethane	76.8	70	92	70 - 141
Tetrachloroethene	67.8	54	79	70 - 141
Dibromochloromethane	85.2	69	81	70 - 130
Chlorobenzene	46.0	43	93	70 - 134
Ethylbenzene	43.4	47	108	70 - 137
m,p-Xylenes	86.8	100	116	69 - 142
o-Xylene	43.4	45	105	70 - 140
Styrene	42.6	45	105	56 - 150
Bromoform	103	83	81	62 - 149
1,1,2,2-Tetrachloroethane	68.7	64	93	52 - 163
1,3-Dichlorobenzene	60.1	44	73	47 - 178
1,4-Dichlorobenzene	60.1	40	66	45 - 180
1,2-Dichlorobenzene	60.1	46	77	37 - 180
1,2,4-Trichlorobenzene	74.2	30	40	22 - 180

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	49.5	35	70	5	25	61 - 137
Chloromethane	20.7	15	74	1	25	55 - 142
Vinyl chloride	25.6	20	80	3	25	53 - 148
Bromomethane	38.8	30	77	7	25	69 - 130
Chloroethane	26.4	19	74	6	25	69 - 131
Trichlorofluoromethane	56.2	53	94	6	25	46 - 161
1,1-Dichloroethane	40.5	37	90	5	25	70 - 130
Acetone	23.8	18	74	5	25	65 - 130
Carbon disulfide	31.1	28	91	5	25	66 - 137
Methylene chloride	34.7	37	106	4	25	59 - 136
Freon 113	76.6	65	85	5	25	67 - 140
trans-1,2-Dichloroethene	39.6	33	83	5	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1B17031	Laboratory ID:	1B17031-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Methyl-tert-butyl ether	36.1	31	86	4	25	67 - 130
1,1-Dichloroethene	39.7	31	79	4	25	67 - 142
cis-1,2-Dichloroethene	39.6	40	102	4	25	70 - 130
2-Butanone	29.5	26	88	4	25	70 - 130
Chloroform	48.8	43	88	3	25	70 - 130
1,2-Dichloroethane	40.5	28	69 *	4	25	70 - 130
1,1,1-Trichloroethane	54.6	42	77	6	25	70 - 130
Cyclohexane	34.4	32	93	5	25	70 - 130
Carbon tetrachloride	62.9	28	45	5	25	22 - 166
Benzene	32.0	33	102	4	25	70 - 133
1,2-Dichloropropane	46.2	43	92	4	25	70 - 130
Trichloroethene	53.7	50	94	5	25	70 - 130
Bromodichloromethane	67.0	53	79	4	25	70 - 130
cis-1,3-Dichloropropene	45.4	44	97	4	25	70 - 137
trans-1,3-Dichloropropene	45.4	58	127	5	25	59 - 166
1,1,2-Trichloroethane	54.6	54	99	6	25	70 - 134
4-Methyl-2-pentanone	41.0	36	88	5	25	70 - 135
Toluene	37.7	42	111	4	25	70 - 138
2-Hexanone	41.0	35	86	4	25	68 - 140
1,2-Dibromoethane	76.8	73	95	4	25	70 - 141
Tetrachloroethene	67.8	56	83	4	25	70 - 141
Dibromochloromethane	85.2	72	85	5	25	70 - 130
Chlorobenzene	46.0	44	96	3	25	70 - 134
Ethylbenzene	43.4	49	113	5	25	70 - 137
m,p-Xylenes	86.8	110	121	5	25	69 - 142
o-Xylene	43.4	47	109	4	25	70 - 140
Styrene	42.6	47	111	6	25	56 - 150
Bromoform	103	86	84	4	25	62 - 149
1,1,2,2-Tetrachloroethane	68.7	67	97	5	25	52 - 163
1,3-Dichlorobenzene	60.1	46	76	4	25	47 - 178

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1B17031	Laboratory ID:	1B17031-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,4-Dichlorobenzene	60.1	41	68	3	25	45 - 180
1,2-Dichlorobenzene	60.1	48	80	4	25	37 - 180
1,2,4-Trichlorobenzene	74.2	29	39	2	25	22 - 180

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64317
Instrument: OVGCMS7
Matrix: Air
Calibration: 2101005

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA64317-SCV1)			Lab File ID: 207LZ017.D		Analyzed: 12/31/20 23:23			
4-Bromofluorobenzene	31.0	101	0 - 200	17.33	17.33	0.0000	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64997
Instrument: OVGCMS7
Matrix: Air
Calibration: 2101005

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA64997-CCV1)			Lab File ID: 217BL004.D		Analyzed: 02/17/21 12:04			
4-Bromofluorobenzene	31.0	98	0 - 200	17.3	17.33	-0.0300	+/-1.0	
Instrument RL Check (AA64997-CRL1)			Lab File ID: 217BL005.D		Analyzed: 02/17/21 12:58			
4-Bromofluorobenzene	31.0	86	0 - 200	17.3	17.33	-0.0300	+/-1.0	
LCS (1B17031-BS1)			Lab File ID: 217BL008.D		Analyzed: 02/17/21 15:37			
4-Bromofluorobenzene	31.0	93	70 - 130	17.3	17.33	-0.0300	+/-1.0	
LCS Dup (1B17031-BSD1)			Lab File ID: 217BL009.D		Analyzed: 02/17/21 16:28			
4-Bromofluorobenzene	31.0	92	70 - 130	17.3	17.33	-0.0300	+/-1.0	
Blank (1B17031-BLK1)			Lab File ID: 217BL011.D		Analyzed: 02/17/21 17:51			
4-Bromofluorobenzene	31.0	80	70 - 130	17.3	17.33	-0.0300	+/-1.0	
HMPN-VMP02-PLOT-20210210 (AE01113-01)			Lab File ID: 217BL012.D		Analyzed: 02/17/21 18:36			
4-Bromofluorobenzene	31.0	81	70 - 130	17.3	17.33	-0.0300	+/-1.0	
HMPN-VMP01-FIELD-20210210 (AE01113-02)			Lab File ID: 217BL013.D		Analyzed: 02/17/21 19:21			
4-Bromofluorobenzene	31.0	83	70 - 130	17.3	17.33	-0.0300	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64317
Instrument: OVGCMS7
Matrix: Air
Calibration: 2101005

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA64317-CAL1)			Lab File ID: 207LZ005.D			Analyzed: 12/31/20 15:30			
Bromochloromethane	373148	10.99	368179	11	101	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1252006	12.49	1236730	12.5	101	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	940921	15.9	944742	15.9	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL2)			Lab File ID: 207LZ006.D			Analyzed: 12/31/20 16:10			
Bromochloromethane	374682	10.99	368179	11	102	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1271464	12.49	1236730	12.5	103	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	980132	15.9	944742	15.9	104	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL3)			Lab File ID: 207LZ007.D			Analyzed: 12/31/20 16:48			
Bromochloromethane	375020	10.99	368179	11	102	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1254271	12.49	1236730	12.5	101	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	928803	15.9	944742	15.9	98	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL4)			Lab File ID: 207LZ008.D			Analyzed: 12/31/20 17:27			
Bromochloromethane	356879	10.98	368179	11	97	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1194813	12.49	1236730	12.5	97	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	889493	15.9	944742	15.9	94	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL5)			Lab File ID: 207LZ009.D			Analyzed: 12/31/20 18:08			
Bromochloromethane	359052	10.99	368179	11	98	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1218151	12.49	1236730	12.5	98	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	912184	15.9	944742	15.9	97	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL6)			Lab File ID: 207LZ010.D			Analyzed: 12/31/20 18:46			
Bromochloromethane	364591	10.99	368179	11	99	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1225340	12.49	1236730	12.5	99	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	929328	15.9	944742	15.9	98	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL7)			Lab File ID: 207LZ011.D			Analyzed: 12/31/20 19:25			
Bromochloromethane	368179	11	368179	11	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1236730	12.5	1236730	12.5	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	944742	15.9	944742	15.9	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL8)			Lab File ID: 207LZ012.D			Analyzed: 12/31/20 20:06			
Bromochloromethane	377607	11	368179	11	103	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1273648	12.5	1236730	12.5	103	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	978882	15.9	944742	15.9	104	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64317-CAL9)			Lab File ID: 207LZ013.D			Analyzed: 12/31/20 20:51			
Bromochloromethane	394710	11	368179	11	107	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1251209	12.5	1236730	12.5	101	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	933690	15.9	944742	15.9	99	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64317
Instrument: OVGCMS7
Matrix: Air
Calibration: 2101005

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA64317-SCV1)			Lab File ID: 207LZ017.D			Analyzed: 12/31/20 23:23			
Bromochloromethane	376726	10.99	368179	11	102	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1252079	12.5	1236730	12.5	101	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	969254	15.89	944742	15.9	103	50 - 200	-0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64997
Instrument: OVGCMS7
Matrix: Air
Calibration: 2101005

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA64997-CCV1)			Lab File ID: 217BL004.D			Analyzed: 02/17/21 12:04			
Bromochloromethane	305264	10.97	368179	11	83	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1047930	12.47	1236730	12.5	85	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	760196	15.87	944742	15.9	80	50 - 200	-0.0300	+/-0.50	
Instrument RL Check (AA64997-CRL1)			Lab File ID: 217BL005.D			Analyzed: 02/17/21 12:58			
Bromochloromethane	292941	10.97	368179	11	80	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1042342	12.47	1236730	12.5	84	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	753011	15.87	944742	15.9	80	50 - 200	-0.0300	+/-0.50	
LCS (1B17031-BS1)			Lab File ID: 217BL008.D			Analyzed: 02/17/21 15:37			
Bromochloromethane	287780	10.98	368179	11	78	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1010815	12.48	1236730	12.5	82	60 - 140	-0.0200	+/-0.50	
Chlorobenzene-d5	745435	15.88	944742	15.9	79	50 - 200	-0.0200	+/-0.50	
LCS Dup (1B17031-BSD1)			Lab File ID: 217BL009.D			Analyzed: 02/17/21 16:28			
Bromochloromethane	279256	10.98	368179	11	76	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	984674	12.47	1236730	12.5	80	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	713992	15.87	944742	15.9	76	50 - 200	-0.0300	+/-0.50	
Blank (1B17031-BLK1)			Lab File ID: 217BL011.D			Analyzed: 02/17/21 17:51			
Bromochloromethane	307781	10.97	368179	11	84	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1095011	12.47	1236730	12.5	89	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	769211	15.87	944742	15.9	81	50 - 200	-0.0300	+/-0.50	
HMPN-VMP02-PLOT-20210210 (AE01113-01)			Lab File ID: 217BL012.D			Analyzed: 02/17/21 18:36			
Bromochloromethane	302345	10.97	368179	11	82	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1070379	12.47	1236730	12.5	87	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	752591	15.87	944742	15.9	80	50 - 200	-0.0300	+/-0.50	
HMPN-VMP01-FIELD-20210210 (AE01113-02)			Lab File ID: 217BL013.D			Analyzed: 02/17/21 19:21			
Bromochloromethane	311949	10.97	368179	11	85	60 - 140	-0.0300	+/-0.50	
1,4-Difluorobenzene	1111506	12.47	1236730	12.5	90	60 - 140	-0.0300	+/-0.50	
Chlorobenzene-d5	779129	15.87	944742	15.9	82	50 - 200	-0.0300	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA64317		
Calibration:	2101005	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA64317-TUN1	207LZ003.D	12/31/20 11:50
Cal Standard	AA64317-CAL1	207LZ005.D	12/31/20 15:30
Cal Standard	AA64317-CAL2	207LZ006.D	12/31/20 16:10
Cal Standard	AA64317-CAL3	207LZ007.D	12/31/20 16:48
Cal Standard	AA64317-CAL4	207LZ008.D	12/31/20 17:27
Cal Standard	AA64317-CAL5	207LZ009.D	12/31/20 18:08
Cal Standard	AA64317-CAL6	207LZ010.D	12/31/20 18:46
Cal Standard	AA64317-CAL7	207LZ011.D	12/31/20 19:25
Cal Standard	AA64317-CAL8	207LZ012.D	12/31/20 20:06
Cal Standard	AA64317-CAL9	207LZ013.D	12/31/20 20:51
Secondary Cal Check	AA64317-SCV1	207LZ017.D	12/31/20 23:23

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA64997		
Calibration:	2101005	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA64997-TUN1	217BL003.D	02/17/21 11:24
Calibration Check	AA64997-CCV1	217BL004.D	02/17/21 12:04
Instrument RL Check	AA64997-CRL1	217BL005.D	02/17/21 12:58
LCS	1B17031-BS1	217BL008.D	02/17/21 15:37
LCS Dup	1B17031-BSD1	217BL009.D	02/17/21 16:28
Blank	1B17031-BLK1	217BL011.D	02/17/21 17:51
HMPN-VMP02-PLOT-20210210	AE01113-01	217BL012.D	02/17/21 18:36
HMPN-VMP01-FIELD-20210210	AE01113-02	217BL013.D	02/17/21 19:21

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	207LZ003.D	Injection Date:	12/31/20
Instrument ID:	OVGCMS7	Injection Time:	11:50
Sequence:	AA64317	Lab Sample ID:	AA64317-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	25.8	PASS
75	30 - 66% of 95	47.4	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.65	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	72	PASS
175	4 - 9% of 174	5.68	PASS
176	95 - 101% of 174	99.9	PASS
177	5 - 9% of 176	6.72	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	217BL003.D	Injection Date:	02/17/21
Instrument ID:	OVGCMS7	Injection Time:	11:24
Sequence:	AA64997	Lab Sample ID:	AA64997-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	18	PASS
75	30 - 66% of 95	38.3	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.5	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	71.7	PASS
175	4 - 9% of 174	8.95	PASS
176	95 - 101% of 174	97.4	PASS
177	5 - 9% of 176	6.78	PASS

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS7	Calibration:	2101005
Lab File ID:	217BL004.D	Calibration Date:	12/31/20 11:50
Sequence:	AA64997	Injection Date:	02/17/21
Lab Sample ID:	AA64997-CCV1	Injection Time:	12:04

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	10.0	7.7	5.909758	4.559609		-23	30
Chloromethane	A	10.0	8.0	3.270463	2.617133		-20	30
Vinyl chloride	A	10.0	8.3	2.909119	2.410313		-17	30
Bromomethane	A	10.0	7.2	2.155586	1.559434		-28	30
Chloroethane	A	10.0	7.4	1.196796	0.8813853		-26	30
Trichlorofluoromethane	A	10.0	9.5	3.437972	3.26558		-5	30
1,1-Dichloroethane	A	10.0	9.6	4.245974	4.058351		-4.4	30
Acetone	A	10.0	8.1	5.226221	4.234025		-19	30
Carbon disulfide	A	10.0	10	6.63175	6.895912		4.0	30
Methylene chloride	A	10.0	11	1.858963	2.047399		10	30
Freon 113	A	10.0	9.3	2.911353	2.715283		-6.7	30
trans-1,2-Dichloroethene	A	10.0	9.2	3.501546	3.231529		-7.7	30
Methyl-tert-butyl ether	A	10.0	9.4	6.175743	5.835055		-5.5	30
1,1-Dichloroethene	A	10.0	8.5	4.047849	3.450606		-15	30
cis-1,2-Dichloroethene	A	10.0	11	2.164079	2.312073		6.8	30
2-Butanone	A	10.0	9.4	7.251926	6.83686		-5.7	30
Chloroform	A	10.0	9.1	4.470508	4.068059		-9	30
1,2-Dichloroethane	A	10.0	7.0	3.063206	2.154942		-30	30
1,1,1-Trichloroethane	A	10.0	7.8	3.961147	3.095308		-22	30
Cyclohexane	A	10.0	10	4.062172	4.130767		1.7	30
Carbon tetrachloride	A	10.0	7.7	3.970871	3.052931		-23	30
Benzene	A	10.0	10	6.636562	6.811827		2.6	30
1,2-Dichloropropane	A	10.0	9.9	0.7791529	0.7686946		-1.3	30
Trichloroethene	A	10.0	9.8	0.7646966	0.7511997		-1.8	30
Bromodichloromethane	A	10.0	9.0	1.331697	1.203806		-9.6	30
cis-1,3-Dichloropropene	A	10.0	9.4	1.13546	1.06233		-6.4	30
trans-1,3-Dichloropropene	A	10.0	9.4	0.7768079	0.6217306		-5.6	30
1,1,2-Trichloroethane	A	10.0	10	0.6845185	0.7006172		2.4	30
4-Methyl-2-pentanone	A	10.0	9.2	2.340781	2.161069		-7.7	30

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS7	Calibration:	2101005
Lab File ID:	217BL004.D	Calibration Date:	12/31/20 11:50
Sequence:	AA64997	Injection Date:	02/17/21
Lab Sample ID:	AA64997-CCV1	Injection Time:	12:04

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	10.0	11	1.393571	1.293816		13	30	
2-Hexanone	A	10.0	9.1	1.905677	1.73748		-8.8	30	
1,2-Dibromoethane	A	10.0	9.9	1.077347	1.064747		-1.2	30	
Tetrachloroethene	A	10.0	8.6	0.9008099	0.7734336		-14	30	
Dibromochloromethane	A	10.0	10	0.9321549	0.9446787		1.3	30	
Chlorobenzene	A	10.0	9.8	1.827847	1.797732		-1.6	30	
Ethylbenzene	A	10.0	11	1.002502	0.8789578		14	30	
m,p-Xylenes	A	20.0	25	1.225912	1.159541		24	30	
o-Xylene	A	10.0	12	1.171426	1.161319		16	30	
Styrene	A	10.0	11	1.5575	1.709988		9.8	30	
Bromoform	A	10.0	10	1.163951	1.212587		4.2	30	
1,1,2,2-Tetrachloroethane	A	10.0	10	1.719508	1.590477		2.8	30	
1,3-Dichlorobenzene	A	10.0	7.7	1.111419	0.8650073		-24	30	
1,4-Dichlorobenzene	A	10.0	7.0	0.9386015	0.7414512		-30	30	
1,2-Dichlorobenzene	A	10.0	7.8	1.129182	0.7780747		-22	30	
1,2,4-Trichlorobenzene	A	10.0	3.8	0.1491073	8.620264E-02		-62	30	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

TO-15

Laboratory:	ENCO Orlando	SDG:	AE01113-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA64317	Instrument:	OVGCMS7
Calibration:	2101005		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0L0713	Air- VIRTUAL TUN-121120	AA64317-TUN1	207LZ003.D	12/31/20 11:50
A0L1267	Air- Virtual CAL1 123120	AA64317-CAL1	207LZ005.D	12/31/20 15:30
A0L1268	Air- Virtual CAL2 123120	AA64317-CAL2	207LZ006.D	12/31/20 16:10
A0L1269	Air- Virtual CAL3 123120	AA64317-CAL3	207LZ007.D	12/31/20 16:48
A0L1270	Air- Virtual CAL4 123120	AA64317-CAL4	207LZ008.D	12/31/20 17:27
A0L1271	Air- Virtual CAL5 123120	AA64317-CAL5	207LZ009.D	12/31/20 18:08
A0L1272	Air- Virtual CAL6 123120	AA64317-CAL6	207LZ010.D	12/31/20 18:46
A0L1273	Air- Virtual CAL7 123120	AA64317-CAL7	207LZ011.D	12/31/20 19:25
A0L1274	Air- Virtual CAL8 123120	AA64317-CAL8	207LZ012.D	12/31/20 20:06
A0L1275	Air- Virtual CAL9 123120	AA64317-CAL9	207LZ013.D	12/31/20 20:51
A0L1276	Air- Virtual SCV 123120	AA64317-SCV1	207LZ017.D	12/31/20 23:23

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2101005
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 12/31/20 11:50

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	0.125	6.880101	0.25	6.46307	0.5	6.55892	1.25	6.475759	2.5	6.347673	5	5.180784
Chloromethane	0.125	3.432075	0.25	3.317085	0.5	3.377745	1.25	3.392706	2.5	3.422284	5	2.898886
Vinyl chloride	0.125	2.926303	0.25	2.910351	0.5	3.025108	1.25	2.903209	2.5	3.127041	5	2.606207
Bromomethane	0.125	2.69701	0.25	2.348071	0.5	2.223615	1.25	2.279177	2.5	2.168719	5	1.855863
Chloroethane	0.125	1.403004	0.25	1.301616	0.5	1.248861	1.25	1.252373	2.5	1.208704	5	1.008265
Trichlorofluoromethane	0.125	3.751755	0.25	3.61229	0.5	3.714842	1.25	3.731129	2.5	3.656952	5	3.000595
1,1-Dichloroethane	0.125	4.587842	0.25	4.427082	0.5	4.502117	1.25	4.411519	2.5	4.354947	5	3.613587
Acetone	0.125	~~8.840053~~	0.25	~~7.938764~~	0.5	~~6.312917~~	1.25	5.890989	2.5	5.909937	5	4.526588
Carbon disulfide	0.125	8.025234	0.25	7.760714	0.5	6.522548	1.25	6.551157	2.5	6.557648	5	5.364374
Methylene chloride	0.125	~~2.279632~~	0.25	~~2.149503~~	0.5	~~2.038782~~	1.25	2.007813	2.5	1.956844	5	1.620185
Freon 113	0.125	3.213417	0.25	3.054313	0.5	3.068258	1.25	3.065888	2.5	3.041704	5	2.441884
trans-1,2-Dichloroethene	0.125	3.659374	0.25	3.577871	0.5	3.722116	1.25	3.652743	2.5	3.616235	5	3.033875
Methyl-tert-butyl ether	0.125	6.82095	0.25	6.249609	0.5	6.555778	1.25	6.388478	2.5	6.377167	5	5.30295
1,1-Dichloroethene	0.125	4.333294	0.25	4.132208	0.5	4.270663	1.25	4.268089	2.5	4.245297	5	3.504379
cis-1,2-Dichloroethene	0.125	2.361379	0.25	2.314645	0.5	2.269906	1.25	2.200582	2.5	2.184674	5	1.812244
2-Butanone	0.125	8.088372	0.25	7.845437	0.5	7.322388	1.25	7.33627	2.5	7.275121	5	6.192875
Chloroform	0.125	4.986611	0.25	4.827528	0.5	4.756221	1.25	4.724647	2.5	4.634925	5	3.852189
1,2-Dichloroethane	0.125	3.45866	0.25	3.277702	0.5	3.270615	1.25	3.26241	2.5	3.196526	5	2.67297
1,1,1-Trichloroethane	0.125	4.546636	0.25	4.35659	0.5	4.310341	1.25	4.287824	2.5	4.185724	5	3.398078
Cyclohexane	0.125	4.283448	0.25	4.305625	0.5	4.255784	1.25	4.198736	2.5	4.16849	5	3.459791
Carbon tetrachloride	0.125	4.508753	0.25	4.30066	0.5	4.37085	1.25	4.338066	2.5	4.300139	5	3.453023
Benzene	0.125	8.584176	0.25	7.757736	0.5	6.882625	1.25	6.690835	2.5	6.553746	5	5.226358
1,2-Dichloropropane	0.125	0.9056314	0.25	0.8308186	0.5	0.8147235	1.25	0.7831177	2.5	0.7741099	5	0.641737
Trichloroethene	0.125	0.9135547	0.25	0.7955145	0.5	0.7908482	1.25	0.7879539	2.5	0.7603373	5	0.6314858
Bromodichloromethane	0.125	1.390735	0.25	1.32732	0.5	1.384071	1.25	1.385696	2.5	1.37739	5	1.201869
cis-1,3-Dichloropropene	0.125	1.466798	0.25	1.270073	0.5	1.169293	1.25	1.11879	2.5	1.066899	5	0.919683
trans-1,3-Dichloropropene	0.125	1.149074	0.25	0.9235653	0.5	0.7734485	1.25	0.7374121	2.5	0.6990371	5	0.6082157
1,1,2-Trichloroethane	0.125	0.885229	0.25	0.7505553	0.5	0.6969291	1.25	0.6704728	2.5	0.6593885	5	0.5529321
4-Methyl-2-pentanone	0.125	2.443937	0.25	2.324127	0.5	2.361917	1.25	2.370525	2.5	2.327043	5	2.045549
Toluene	0.125	2.225453	0.25	1.939487	0.5	1.4293	1.25	1.335175	2.5	1.307071	5	0.9660006
2-Hexanone	0.125	2.114527	0.25	1.869659	0.5	1.811452	1.25	1.791608	2.5	1.784218	5	1.657638

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando

SDG: AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Calibration: 2101005

Instrument: OVGCMS7

Matrix: Air

Calibration Date: 12/31/20 11:50

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	0.125	1.449169	0.25	1.184933	0.5	1.064449	1.25	1.038214	2.5	1.002301	5	0.8779901
Tetrachloroethene	0.125	1.237815	0.25	1.017385	0.5	0.9396853	1.25	0.911662	2.5	0.8898493	5	0.7195064
Dibromochloromethane	0.125	0.9973435	0.25	0.9393644	0.5	0.9030074	1.25	0.9199645	2.5	0.916509	5	0.8581506
Chlorobenzene	0.125	2.647576	0.25	2.210825	0.5	1.867804	1.25	1.779592	2.5	1.705377	5	1.433636
Ethylbenzene	0.125	1.676315	0.25	1.387727	0.5	1.021181	1.25	0.9627327	2.5	0.917646	5	0.7148499
m,p-Xylenes	0.25	2.077339	0.5	1.682061	1	1.245937	2.5	1.166515	5	1.123693	10	0.873301
o-Xylene	0.125	1.979159	0.25	1.58395	0.5	1.162697	1.25	1.06737	2.5	1.042097	5	0.8214336
Styrene	0.125	2.367136	0.25	1.887962	0.5	1.433044	1.25	1.346069	2.5	1.337842	5	1.18615
Bromoform	0.125	1.313904	0.25	1.153171	0.5	1.082994	1.25	1.047519	2.5	1.04506	5	1.073963
1,1,2,2-Tetrachloroethane	0.125	3.355793	0.25	2.357707	0.5	1.595921	1.25	1.338458	2.5	1.238526	5	1.221836
1,3-Dichlorobenzene	0.125	2.246947	0.25	1.556876	0.5	0.9183153	1.25	0.7635226	2.5	0.7169343	5	0.7228623
1,4-Dichlorobenzene	0.125	1.798349	0.25	1.290312	0.5	0.7310743	1.25	0.6060504	2.5	0.5870324	5	0.6175462
1,2-Dichlorobenzene	0.125	2.594862	0.25	1.748544	0.5	0.9581666	1.25	0.7459296	2.5	0.6719118	5	0.6888911
1,2,4-Trichlorobenzene	0.125	~~0.5785395~~	0.25	~~0.4200251~~	0.5	~~0.1654797~~	1.25	~~9.736063E-02~~	2.5	9.637968E-02	5	8.384725E-02
4-Bromofluorobenzene	31	0.3913357	31	0.4006491	31	0.3970659	31	0.399884	31	0.4068192	31	0.4208729

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2101005
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 12/31/20 11:50

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	10	5.615951	25	5.419369	50	4.246195						
Chloromethane	10	3.169506	25	3.251157	50	3.172724						
Vinyl chloride	10	2.853906	25	2.959224	50	2.87072						
Bromomethane	10	1.930807	25	1.977297	50	1.919713						
Chloroethane	10	1.110843	25	1.128034	50	1.109461						
Trichlorofluoromethane	10	3.233858	25	3.218693	50	3.021634						
1,1-Dichloroethane	10	3.96112	25	4.132328	50	4.223222						
Acetone	10	4.897522	25	5.085341	50	5.046947						
Carbon disulfide	10	5.97072	25	6.368963	50	6.564391						
Methylene chloride	10	1.776514	25	1.866688	50	1.925732						
Freon 113	10	2.707914	25	2.85663	50	2.752168						
trans-1,2-Dichloroethene	10	3.33264	25	3.467828	50	3.451228						
Methyl-tert-butyl ether	10	5.824249	25	6.078951	50	5.983554						
1,1-Dichloroethene	10	3.862532	25	3.935975	50	3.878202						
cis-1,2-Dichloroethene	10	2.030001	25	2.119635	50	2.183642						
2-Butanone	10	6.742632	25	7.163537	50	7.300698						
Chloroform	10	4.155904	25	4.228046	50	4.068504						
1,2-Dichloroethane	10	2.910748	25	2.902288	50	2.616938						
1,1,1-Trichloroethane	10	3.669862	25	3.606957	50	3.288307						
Cyclohexane	10	3.83889	25	4.018146	50	4.030635						
Carbon tetrachloride	10	3.694978	25	3.61008	50	3.16129						
Benzene	10	5.743284	25	6.107048	50	6.183249						
1,2-Dichloropropane	10	0.7108671	25	0.7490648	50	0.8023065						
Trichloroethene	10	0.7060494	25	0.7406131	50	0.7559124						
Bromodichloromethane	10	1.303312	25	1.315934	50	1.298943						
cis-1,3-Dichloropropene	10	1.008858	25	1.070744	50	1.128002						
trans-1,3-Dichloropropene	10	0.6649786	25	0.658732	50	~~0.6284878~~						
1,1,2-Trichloroethane	10	0.6177992	25	0.6484286	50	0.6789318						
4-Methyl-2-pentanone	10	2.275253	25	2.422812	50	2.495865						
Toluene	10	1.05592	25	1.123939	50	1.159795						
2-Hexanone	10	1.896439	25	2.037941	50	2.187612						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2101005
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 12/31/20 11:50

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	10	0.9720885	25	1.032365	50	1.074613						
Tetrachloroethene	10	0.8026817	25	0.8236732	50	0.7650315						
Dibromochloromethane	10	0.9408311	25	0.9708301	50	0.9433932						
Chlorobenzene	10	1.587282	25	1.631059	50	1.587469						
Ethylbenzene	10	0.7862073	25	0.7933245	50	0.7625305						
m,p-Xylenes	20	0.9702664	50	0.9721112	100	0.9219815						
o-Xylene	10	0.9045973	25	0.9638634	50	1.017668						
Styrene	10	1.357885	25	1.492209	50	1.6092						
Bromoform	10	1.206311	25	1.275365	50	1.277273						
1,1,2,2-Tetrachloroethane	10	1.334683	25	1.448604	50	1.584043						
1,3-Dichlorobenzene	10	0.8604144	25	1.050722	50	1.166179						
1,4-Dichlorobenzene	10	0.7563342	25	0.9658522	50	1.094863						
1,2-Dichlorobenzene	10	0.7972424	25	0.9320236	50	1.025071						
1,2,4-Trichlorobenzene	10	0.1319714	25	0.1899215	50	0.2434169						
4-Bromofluorobenzene	31	0.4342106	31	0.4570122	31	0.5070762						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Calibration: 2101005
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 12/31/20 11:50

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	5.909758	14.41643	4.554445	0.3657128			30	
Chloromethane	3.270463	5.251503	5.056667	0.3954954			30	
Vinyl chloride	2.909119	4.862303	5.304445	0.3416295			30	
Bromomethane	2.155586	12.47015	6.132222	0.2415321			30	
Chloroethane	1.196796	10.00664	6.456667	0.1737744			30	
Trichlorofluoromethane	3.437972	9.162249	6.782222	0.1918591			30	
1,1-Dichloroethane	4.245974	7.206655	10.02	6.831281E-02			30	
Acetone	5.226221	10.68406	8.961667	4.651208E-02			30	
Carbon disulfide	6.63175	12.3393	7.866667	0.1907078			30	
Methylene chloride	1.858963	7.610124	8.843334	9.214839E-02			30	
Freon 113	2.911353	8.301482	7.925556	0.1285941			30	
trans-1,2-Dichloroethene	3.501546	6.111153	9.106667	0.1230645			30	
Methyl-tert-butyl ether	6.175743	7.204308	9.317778	0.1179063			30	
1,1-Dichloroethene	4.047849	6.747121	7.827778	0.1533387			30	
cis-1,2-Dichloroethene	2.164079	7.639813	10.73333	4.565553E-02			30	
2-Butanone	7.251926	7.639891	11.46333	0.0477473			30	
Chloroform	4.470508	8.908179	11.06333	4.393534E-02			30	
1,2-Dichloroethane	3.063206	9.680406	12.04222	3.036601E-02			30	
1,1,1-Trichloroethane	3.961147	11.8354	11.35778	5.881745E-02			30	
Cyclohexane	4.062172	6.69282	11.01556	6.651642E-02			30	
Carbon tetrachloride	3.970871	12.37318	11.27333	4.399863E-02			30	
Benzene	6.636562	15.43379	11.81222	0.0310919			30	
1,2-Dichloropropane	0.7791529	9.621557	13.10111	3.082214E-02			30	
Trichloroethene	0.7646966	9.937085	12.48222	2.837714E-02			30	
Bromodichloromethane	1.331697	4.616314	13.14222	3.087056E-02			30	
cis-1,3-Dichloropropene	1.13546	13.95501	13.86556	3.722169E-02			30	
trans-1,3-Dichloropropene	0.7768079	22.95632	14.59	8.747303E-03	0.9995491		0.99	
1,1,2-Trichloroethane	0.6845185	13.54061	14.78889	1.842179E-02			30	
4-Methyl-2-pentanone	2.340781	5.542891	14.54111	2.859218E-02			30	
Toluene	1.393571	30.30025	14.15	6.709027E-03	0.999111		0.99	

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE01113-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2101005
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 12/31/20 11:50

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Hexanone	1.905677	9.091698	15.48889	2.260803E-02			30	
1,2-Dibromoethane	1.077347	15.03899	15.33111	1.893985E-02			30	
Tetrachloroethene	0.9008099	17.36702	14.60556	3.242749E-02			30	
Dibromochloromethane	0.9321549	4.277446	15.01222	3.204912E-02			30	
Chlorobenzene	1.827847	20.71857	15.92111	0.0130558			30	
Ethylbenzene	1.002502	32.3694	15.91111	0.0223815	0.9993742		0.99	
m,p-Xylenes	1.225912	32.80489	16.07111	3.146586E-02	0.9990304		0.99	
o-Xylene	1.171426	31.80751	16.6	2.483395E-02	0.9985522		0.99	
Styrene	1.5575	23.34732	16.65	2.396509E-02			30	
Bromoform	1.163951	9.213024	16.72222	2.792253E-02			30	
1,1,2,2-Tetrachloroethane	1.719508	40.93741	17.51778	1.861973E-02	0.9968896		0.99	
1,3-Dichlorobenzene	1.111419	45.2394	18.63222	2.725701E-02	0.9934773		0.99	
1,4-Dichlorobenzene	0.9386015	42.97438	18.74	2.050293E-03	0.9909597		0.99	
1,2-Dichlorobenzene	1.129182	56.6263	19.29	1.680822E-02	0.9949822		0.99	
1,2,4-Trichlorobenzene	0.1491073	44.85495	21.21	1.939916E-02	0.990		0.99	
4-Bromofluorobenzene	0.4238806	8.874238	17.33	1.878086E-02			30	

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2101005 **Laboratory ID:** AA64317-SCV1

Sequence: AA64317 **Standard ID:** A0L1276

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
Chlorobenzene	10.0	10	-0.08	30.00
2-Hexanone	10.0	11	13.8	30.00
Carbon tetrachloride	10.0	11	5.1	30.00
1,3-Dichlorobenzene	10.0	8.9	-11.5	30.00
Methyl-tert-butyl ether	10.0	10	2.5	30.00
trans-1,2-Dichloroethene	10.0	10	4.1	30.00
cis-1,2-Dichloroethene	10.0	11	6.7	30.00
Tetrachloroethene	10.0	10	3.3	30.00
Dibromochloromethane	10.0	11	11.4	30.00
Ethylbenzene	10.0	12	16.6	30.00
Cyclohexane	10.0	10	2.3	30.00
Benzene	10.0	10	1.3	30.00
Toluene	10.0	11	8.5	30.00
m,p-Xylenes	20.0	24	20.0	30.00
4-Methyl-2-pentanone	10.0	11	5.3	30.00
1,2-Dichloroethane	10.0	11	9.4	30.00
1,2-Dibromoethane	10.0	11	8.8	30.00
1,4-Dichlorobenzene	10.0	8.4	-16.4	30.00
trans-1,3-Dichloropropene	10.0	15	54.4 *	30.00
cis-1,3-Dichloropropene	10.0	11	11.9	30.00
Styrene	10.0	11	5.4	30.00
1,2,4-Trichlorobenzene	10.0	6.7	-32.8 *	30.00
Bromodichloromethane	10.0	11	8.4	30.00
o-Xylene	10.0	10	4.3	30.00
1,1,2,2-Tetrachloroethane	10.0	10	3.9	30.00
Trichloroethene	10.0	11	6.9	30.00
1,1,2-Trichloroethane	10.0	11	5.9	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AE01113-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2101005 **Laboratory ID:** AA64317-SCV1

Sequence: AA64317 **Standard ID:** A0L1276

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
2-Butanone	10.0	10	1.6	30.00
1,2-Dichloropropane	10.0	11	5.9	30.00
Freon 113	10.0	11	6.3	30.00
Dichlorodifluoromethane	10.0	11	10.2	30.00
Trichlorofluoromethane	10.0	11	8.5	30.00
Acetone	10.0	10	0.4	30.00
1,1-Dichloroethane	10.0	11	6.8	30.00
Chloroform	10.0	11	6.9	30.00
Bromoform	10.0	11	13.1	30.00
Carbon disulfide	10.0	9.7	-3.1	30.00
Methylene chloride	10.0	11	9.5	30.00
Vinyl chloride	10.0	10	2.5	30.00
Chloroethane	10.0	10	2.4	30.00
Chloromethane	10.0	9.8	-1.6	30.00
Bromomethane	10.0	11	6.2	30.00
1,1,1-Trichloroethane	10.0	11	7.1	30.00
1,2-Dichlorobenzene	10.0	9.5	-4.8	30.00
1,1-Dichloroethene	10.0	11	8.3	30.00

* Values outside of QC limits

TETRA TECH ISG
TtNUS, Information Systems Group

Completion Ticket

On 2/24/2021 at 9:57 AM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AE01113A1.txt, TE015AE01113A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2021224_208945749_ledd_ENCO

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: February 26, 2021

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Tuesday, May 4, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN SWMU 090
ENCO Workorder(s): AE02773

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, April 27, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AE02773
SDG: AE02773-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
TO-15	OVGCMS7

Analysis: TO-15

The calibration curve and the continuing calibration standards are in ppbv. Raw data is reported in pptv. Per request, results may be reported in a unit other than ppbv which is obtained through a conversion factor set up in the laboratories' database.

Manual integrations were performed on samples associated with TO-15. All data & explanations are included in the raw data section of the report.

Affected Samples: AA65685-SCV1
Recovery for trans-1,3-dichloropropene was outside acceptance limits. Analytes was not detected in the samples.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-AMB1-FIELD-20210426 **Lab ID: AE02773-01** **Sampled: 04/26/21 15:50** **Received: 04/27/21 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	05/26/21	04/29/21 07:00	04/29/21 08:54

Client ID: HMFN-AMB2-PLOT-20210426 **Lab ID: AE02773-02** **Sampled: 04/26/21 16:00** **Received: 04/27/21 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	05/26/21	04/29/21 07:00	04/29/21 09:39

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMFN-AMB1-FIELD-20210426 **Lab ID:** AE02773-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	7.2	I	1.1	7.9	ug/m³ Air	TO-15	
Chloromethane	1.5	I	1.3	6.9	ug/m³ Air	TO-15	
Methylene chloride	0.99	I	0.92	12	ug/m³ Air	TO-15	

Client ID: HMFN-AMB2-PLOT-20210426 **Lab ID:** AE02773-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
2-Butanone	1.3	I	1.3	9.8	ug/m³ Air	TO-15	
Acetone	10		1.1	7.9	ug/m³ Air	TO-15	
Chloromethane	1.4	I	1.3	6.9	ug/m³ Air	TO-15	
Methylene chloride	0.93	I	0.92	12	ug/m³ Air	TO-15	

ANALYTICAL RESULTS

Description: HMFN-AMB1-FIELD-20210426 **Lab Sample ID:** AE02773-01 **Received:** 04/27/21 14:30

Matrix: Air **Sampled:** 04/26/21 15:50 **Work Order:** AE02773

Project: NASA KSC HMFN SWMU 090 **Sampled By:** **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.5	U	ug/m³ Air	1.33	2.5	18	1D28055	TO-15	04/29/21 08:54	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.3	U	ug/m³ Air	1.33	3.3	23	1D28055	TO-15	04/29/21 08:54	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.5	U	ug/m³ Air	1.33	2.5	18	1D28055	TO-15	04/29/21 08:54	rgg	
1,1-Dichloroethane [75-34-3]^	1.9	U	ug/m³ Air	1.33	1.9	13	1D28055	TO-15	04/29/21 08:54	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.33	2.0	13	1D28055	TO-15	04/29/21 08:54	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.8	U	ug/m³ Air	1.33	3.8	25	1D28055	TO-15	04/29/21 08:54	rgg	
1,2-Dibromoethane [106-93-4]^	3.7	U	ug/m³ Air	1.33	3.7	26	1D28055	TO-15	04/29/21 08:54	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.2	U	ug/m³ Air	1.33	2.2	20	1D28055	TO-15	04/29/21 08:54	rgg	
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.33	2.0	13	1D28055	TO-15	04/29/21 08:54	rgg	
1,2-Dichloropropane [78-87-5]^	2.5	U	ug/m³ Air	1.33	2.5	15	1D28055	TO-15	04/29/21 08:54	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.2	U	ug/m³ Air	1.33	2.2	20	1D28055	TO-15	04/29/21 08:54	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.33	2.5	20	1D28055	TO-15	04/29/21 08:54	rgg	
2-Butanone [78-93-3]^	1.3	U	ug/m³ Air	1.33	1.3	9.8	1D28055	TO-15	04/29/21 08:54	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.33	1.8	14	1D28055	TO-15	04/29/21 08:54	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.33	1.9	14	1D28055	TO-15	04/29/21 08:54	rgg	
Acetone [67-64-1]^	**7.2**	I	ug/m³ Air	1.33	1.1	7.9	1D28055	TO-15	04/29/21 08:54	rgg	
Benzene [71-43-2]^	1.5	U	ug/m³ Air	1.33	1.5	11	1D28055	TO-15	04/29/21 08:54	rgg	
Bromodichloromethane [75-27-4]^	3.0	U	ug/m³ Air	1.33	3.0	22	1D28055	TO-15	04/29/21 08:54	rgg	
Bromoform [75-25-2]^	5.2	U	ug/m³ Air	1.33	5.2	34	1D28055	TO-15	04/29/21 08:54	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.33	1.7	13	1D28055	TO-15	04/29/21 08:54	rgg	
Carbon disulfide [75-15-0]^	1.7	U	ug/m³ Air	1.33	1.7	10	1D28055	TO-15	04/29/21 08:54	rgg	
Carbon tetrachloride [56-23-5]^	2.3	U	ug/m³ Air	1.33	2.3	21	1D28055	TO-15	04/29/21 08:54	rgg	
Chlorobenzene [108-90-7]^	2.0	U	ug/m³ Air	1.33	2.0	15	1D28055	TO-15	04/29/21 08:54	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.33	1.1	8.8	1D28055	TO-15	04/29/21 08:54	rgg	
Chloroform [67-66-3]^	2.5	U	ug/m³ Air	1.33	2.5	16	1D28055	TO-15	04/29/21 08:54	rgg	
Chloromethane [74-87-3]^	**1.5**	I	ug/m³ Air	1.33	1.3	6.9	1D28055	TO-15	04/29/21 08:54	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.33	2.0	13	1D28055	TO-15	04/29/21 08:54	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.33	2.3	15	1D28055	TO-15	04/29/21 08:54	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.33	1.6	11	1D28055	TO-15	04/29/21 08:54	rgg	
Dibromochloromethane [124-48-1]^	3.7	U	ug/m³ Air	1.33	3.7	28	1D28055	TO-15	04/29/21 08:54	rgg	
Dichlorodifluoromethane [75-71-8]^	3.6	U	ug/m³ Air	1.33	3.6	16	1D28055	TO-15	04/29/21 08:54	rgg	
Ethylbenzene [100-41-4]^	1.7	U	ug/m³ Air	1.33	1.7	14	1D28055	TO-15	04/29/21 08:54	rgg	
Freon 113 [76-13-1]^	3.3	U	ug/m³ Air	1.33	3.3	25	1D28055	TO-15	04/29/21 08:54	rgg	
Methylene chloride [75-09-2]^	**0.99**	I	ug/m³ Air	1.33	0.92	12	1D28055	TO-15	04/29/21 08:54	rgg	
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.33	1.8	12	1D28055	TO-15	04/29/21 08:54	rgg	
Styrene [100-42-5]^	2.0	U	ug/m³ Air	1.33	2.0	14	1D28055	TO-15	04/29/21 08:54	rgg	
Tetrachloroethene [127-18-4]^	2.8	U	ug/m³ Air	1.33	2.8	23	1D28055	TO-15	04/29/21 08:54	rgg	
Toluene [108-88-3]^	1.9	U	ug/m³ Air	1.33	1.9	13	1D28055	TO-15	04/29/21 08:54	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.33	1.7	13	1D28055	TO-15	04/29/21 08:54	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.1	U	ug/m³ Air	1.33	2.1	15	1D28055	TO-15	04/29/21 08:54	rgg	
Trichloroethene [79-01-6]^	2.5	U	ug/m³ Air	1.33	2.5	18	1D28055	TO-15	04/29/21 08:54	rgg	
Trichlorofluoromethane [75-69-4]^	2.5	U	ug/m³ Air	1.33	2.5	19	1D28055	TO-15	04/29/21 08:54	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.33	1.9	8.5	1D28055	TO-15	04/29/21 08:54	rgg	
Xylenes (Total) [1330-20-7]^	3.8	U	ug/m³ Air	1.33	3.8	14	1D28055	TO-15	04/29/21 08:54	rgg	

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*28*	*1*	*31.0*	*92 %*	*70-130*	*1D28055*	*TO-15*	*04/29/21 08:54*	*rgg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-AMB2-PLOT-20210426 **Lab Sample ID:** AE02773-02 **Received:** 04/27/21 14:30

Matrix: Air **Sampled:** 04/26/21 16:00 **Work Order:** AE02773

Project: NASA KSC HMFN SWMU 090 **Sampled By:** **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.5	U	ug/m³ Air	1.33	2.5	18	1D28055	TO-15	04/29/21 09:39	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.3	U	ug/m³ Air	1.33	3.3	23	1D28055	TO-15	04/29/21 09:39	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.5	U	ug/m³ Air	1.33	2.5	18	1D28055	TO-15	04/29/21 09:39	rgg	
1,1-Dichloroethane [75-34-3]^	1.9	U	ug/m³ Air	1.33	1.9	13	1D28055	TO-15	04/29/21 09:39	rgg	
1,1-Dichloroethene [75-35-4]^	2.0	U	ug/m³ Air	1.33	2.0	13	1D28055	TO-15	04/29/21 09:39	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	3.8	U	ug/m³ Air	1.33	3.8	25	1D28055	TO-15	04/29/21 09:39	rgg	
1,2-Dibromoethane [106-93-4]^	3.7	U	ug/m³ Air	1.33	3.7	26	1D28055	TO-15	04/29/21 09:39	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.2	U	ug/m³ Air	1.33	2.2	20	1D28055	TO-15	04/29/21 09:39	rgg	
1,2-Dichloroethane [107-06-2]^	2.0	U	ug/m³ Air	1.33	2.0	13	1D28055	TO-15	04/29/21 09:39	rgg	
1,2-Dichloropropane [78-87-5]^	2.5	U	ug/m³ Air	1.33	2.5	15	1D28055	TO-15	04/29/21 09:39	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.2	U	ug/m³ Air	1.33	2.2	20	1D28055	TO-15	04/29/21 09:39	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.5	U	ug/m³ Air	1.33	2.5	20	1D28055	TO-15	04/29/21 09:39	rgg	
2-Butanone [78-93-3]^	**1.3**	I	ug/m³ Air	1.33	1.3	9.8	1D28055	TO-15	04/29/21 09:39	rgg	
2-Hexanone [591-78-6]^	1.8	U	ug/m³ Air	1.33	1.8	14	1D28055	TO-15	04/29/21 09:39	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.33	1.9	14	1D28055	TO-15	04/29/21 09:39	rgg	
Acetone [67-64-1]^	**10**		ug/m³ Air	1.33	1.1	7.9	1D28055	TO-15	04/29/21 09:39	rgg	
Benzene [71-43-2]^	1.5	U	ug/m³ Air	1.33	1.5	11	1D28055	TO-15	04/29/21 09:39	rgg	
Bromodichloromethane [75-27-4]^	3.0	U	ug/m³ Air	1.33	3.0	22	1D28055	TO-15	04/29/21 09:39	rgg	
Bromoform [75-25-2]^	5.2	U	ug/m³ Air	1.33	5.2	34	1D28055	TO-15	04/29/21 09:39	rgg	
Bromomethane [74-83-9]^	1.7	U	ug/m³ Air	1.33	1.7	13	1D28055	TO-15	04/29/21 09:39	rgg	
Carbon disulfide [75-15-0]^	1.7	U	ug/m³ Air	1.33	1.7	10	1D28055	TO-15	04/29/21 09:39	rgg	
Carbon tetrachloride [56-23-5]^	2.3	U	ug/m³ Air	1.33	2.3	21	1D28055	TO-15	04/29/21 09:39	rgg	
Chlorobenzene [108-90-7]^	2.0	U	ug/m³ Air	1.33	2.0	15	1D28055	TO-15	04/29/21 09:39	rgg	
Chloroethane [75-00-3]^	1.1	U	ug/m³ Air	1.33	1.1	8.8	1D28055	TO-15	04/29/21 09:39	rgg	
Chloroform [67-66-3]^	2.5	U	ug/m³ Air	1.33	2.5	16	1D28055	TO-15	04/29/21 09:39	rgg	
Chloromethane [74-87-3]^	**1.4**	I	ug/m³ Air	1.33	1.3	6.9	1D28055	TO-15	04/29/21 09:39	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.0	U	ug/m³ Air	1.33	2.0	13	1D28055	TO-15	04/29/21 09:39	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.3	U	ug/m³ Air	1.33	2.3	15	1D28055	TO-15	04/29/21 09:39	rgg	
Cyclohexane [110-82-7]^	1.6	U	ug/m³ Air	1.33	1.6	11	1D28055	TO-15	04/29/21 09:39	rgg	
Dibromochloromethane [124-48-1]^	3.7	U	ug/m³ Air	1.33	3.7	28	1D28055	TO-15	04/29/21 09:39	rgg	
Dichlorodifluoromethane [75-71-8]^	3.6	U	ug/m³ Air	1.33	3.6	16	1D28055	TO-15	04/29/21 09:39	rgg	
Ethylbenzene [100-41-4]^	1.7	U	ug/m³ Air	1.33	1.7	14	1D28055	TO-15	04/29/21 09:39	rgg	
Freon 113 [76-13-1]^	3.3	U	ug/m³ Air	1.33	3.3	25	1D28055	TO-15	04/29/21 09:39	rgg	
Methylene chloride [75-09-2]^	**0.93**	I	ug/m³ Air	1.33	0.92	12	1D28055	TO-15	04/29/21 09:39	rgg	
Methyl-tert-butyl ether [1634-04-4]^	1.8	U	ug/m³ Air	1.33	1.8	12	1D28055	TO-15	04/29/21 09:39	rgg	
Styrene [100-42-5]^	2.0	U	ug/m³ Air	1.33	2.0	14	1D28055	TO-15	04/29/21 09:39	rgg	
Tetrachloroethene [127-18-4]^	2.8	U	ug/m³ Air	1.33	2.8	23	1D28055	TO-15	04/29/21 09:39	rgg	
Toluene [108-88-3]^	1.9	U	ug/m³ Air	1.33	1.9	13	1D28055	TO-15	04/29/21 09:39	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.7	U	ug/m³ Air	1.33	1.7	13	1D28055	TO-15	04/29/21 09:39	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.1	U	ug/m³ Air	1.33	2.1	15	1D28055	TO-15	04/29/21 09:39	rgg	
Trichloroethene [79-01-6]^	2.5	U	ug/m³ Air	1.33	2.5	18	1D28055	TO-15	04/29/21 09:39	rgg	
Trichlorofluoromethane [75-69-4]^	2.5	U	ug/m³ Air	1.33	2.5	19	1D28055	TO-15	04/29/21 09:39	rgg	
Vinyl chloride [75-01-4]^	1.9	U	ug/m³ Air	1.33	1.9	8.5	1D28055	TO-15	04/29/21 09:39	rgg	
Xylenes (Total) [1330-20-7]^	3.8	U	ug/m³ Air	1.33	3.8	14	1D28055	TO-15	04/29/21 09:39	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*29*	*1*	*31.0*	*92 %*	*70-130*	*1D28055*	*TO-15*	*04/29/21 09:39*	*rgg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28055 - NO PREP 2

Blank (1D28055-BLK1) Prepared: 04/28/2021 14:38 Analyzed: 04/29/2021 00:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1,2,2-Tetrachloroethane	2.5	U	17	ug/m³ Air							
1,1,2-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1-Dichloroethane	1.5	U	10	ug/m³ Air							
1,1-Dichloroethene	1.5	U	9.9	ug/m³ Air							
1,2,4-Trichlorobenzene	2.9	U	19	ug/m³ Air							
1,2-Dibromoethane	2.8	U	19	ug/m³ Air							
1,2-Dichlorobenzene	1.6	U	15	ug/m³ Air							
1,2-Dichloroethane	1.5	U	10	ug/m³ Air							
1,2-Dichloropropane	1.8	U	12	ug/m³ Air							
1,3-Dichlorobenzene	1.7	U	15	ug/m³ Air							
1,4-Dichlorobenzene	1.9	U	15	ug/m³ Air							
2-Butanone	0.94	U	7.4	ug/m³ Air							
2-Hexanone	1.4	U	10	ug/m³ Air							
4-Methyl-2-pentanone	1.4	U	10	ug/m³ Air							
Acetone	0.83	U	5.9	ug/m³ Air							
Benzene	1.2	U	8.0	ug/m³ Air							
Bromodichloromethane	2.3	U	17	ug/m³ Air							
Bromoform	3.9	U	26	ug/m³ Air							
Bromomethane	1.3	U	9.7	ug/m³ Air							
Carbon disulfide	1.3	U	7.8	ug/m³ Air							
Carbon tetrachloride	1.7	U	16	ug/m³ Air							
Chlorobenzene	1.5	U	12	ug/m³ Air							
Chloroethane	0.84	U	6.6	ug/m³ Air							
Chloroform	1.9	U	12	ug/m³ Air							
Chloromethane	0.99	U	5.2	ug/m³ Air							
cis-1,2-Dichloroethene	1.5	U	9.9	ug/m³ Air							
cis-1,3-Dichloropropene	1.7	U	11	ug/m³ Air							
Cyclohexane	1.2	U	8.6	ug/m³ Air							
Dibromochloromethane	2.8	U	21	ug/m³ Air							
Dichlorodifluoromethane	2.7	U	12	ug/m³ Air							
Ethylbenzene	1.3	U	11	ug/m³ Air							
Freon 113	2.5	U	19	ug/m³ Air							
Methylene chloride	0.69	U	8.7	ug/m³ Air							
Methyl-tert-butyl ether	1.3	U	9.0	ug/m³ Air							
Styrene	1.5	U	11	ug/m³ Air							
Tetrachloroethene	2.1	U	17	ug/m³ Air							
Toluene	1.4	U	9.4	ug/m³ Air							
trans-1,2-Dichloroethene	1.3	U	9.9	ug/m³ Air							
trans-1,3-Dichloropropene	1.5	U	11	ug/m³ Air							
Trichloroethene	1.9	U	13	ug/m³ Air							
Trichlorofluoromethane	1.9	U	14	ug/m³ Air							
Vinyl chloride	1.4	U	6.4	ug/m³ Air							
Xylenes (Total)	2.9	U	11	ug/m³ Air							
4-Bromofluorobenzene	*28*			*ppbv*	*31.0*		*90*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28055 - NO PREP 2 - Continued

LCS (1D28055-BS1) Prepared: 04/28/2021 14:38 Analyzed: 04/28/2021 22:33

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	62		14	ug/m³ Air	54.6		114	70-130			
1,1,2,2-Tetrachloroethane	79		17	ug/m³ Air	68.7		114	52-163			
1,1,2-Trichloroethane	59		14	ug/m³ Air	54.6		108	70-134			
1,1-Dichloroethane	45		10	ug/m³ Air	40.5		111	70-130			
1,1-Dichloroethene	46		9.9	ug/m³ Air	39.7		115	67-142			
1,2,4-Trichlorobenzene	77		19	ug/m³ Air	74.2		104	22-180			
1,2-Dibromoethane	87		19	ug/m³ Air	76.8		113	70-141			
1,2-Dichlorobenzene	67		15	ug/m³ Air	60.1		112	37-180			
1,2-Dichloroethane	49		10	ug/m³ Air	40.5		121	70-130			
1,2-Dichloropropane	50		12	ug/m³ Air	46.2		107	70-130			
1,3-Dichlorobenzene	65		15	ug/m³ Air	60.1		107	47-178			
1,4-Dichlorobenzene	65		15	ug/m³ Air	60.1		107	45-180			
2-Butanone	31		7.4	ug/m³ Air	29.5		104	70-130			
2-Hexanone	47		10	ug/m³ Air	41.0		116	68-140			
4-Methyl-2-pentanone	46		10	ug/m³ Air	41.0		113	70-135			
Acetone	26		5.9	ug/m³ Air	23.8		110	65-130			
Benzene	34		8.0	ug/m³ Air	32.0		107	70-133			
Bromodichloromethane	74		17	ug/m³ Air	67.0		110	70-130			
Bromoform	110		26	ug/m³ Air	103		107	62-149			
Bromomethane	44		9.7	ug/m³ Air	38.8		113	69-130			
Carbon disulfide	31		7.8	ug/m³ Air	31.1		100	66-137			
Carbon tetrachloride	62		16	ug/m³ Air	62.9		98	22-166			
Chlorobenzene	48		12	ug/m³ Air	46.0		104	70-134			
Chloroethane	30		6.6	ug/m³ Air	26.4		115	69-131			
Chloroform	55		12	ug/m³ Air	48.8		112	70-130			
Chloromethane	21		5.2	ug/m³ Air	20.7		102	55-142			
cis-1,2-Dichloroethene	42		9.9	ug/m³ Air	39.6		107	70-130			
cis-1,3-Dichloropropene	52		11	ug/m³ Air	45.4		115	70-137			
Cyclohexane	36		8.6	ug/m³ Air	34.4		103	70-130			
Dibromochloromethane	91		21	ug/m³ Air	85.2		107	70-130			
Dichlorodifluoromethane	58		12	ug/m³ Air	49.5		116	61-137			
Ethylbenzene	43		11	ug/m³ Air	43.4		99	70-137			
Freon 113	83		19	ug/m³ Air	76.6		108	67-140			
m,p-Xylenes	85		22	ug/m³ Air	86.8		98	69-142			
Methylene chloride	38		8.7	ug/m³ Air	34.7		108	59-136			
Methyl-tert-butyl ether	38		9.0	ug/m³ Air	36.1		105	67-130			
o-Xylene	41		11	ug/m³ Air	43.4		94	70-140			
Styrene	47		11	ug/m³ Air	42.6		111	56-150			
Tetrachloroethene	70		17	ug/m³ Air	67.8		103	70-141			
Toluene	38		9.4	ug/m³ Air	37.7		101	70-138			
trans-1,2-Dichloroethene	42		9.9	ug/m³ Air	39.6		106	70-130			
trans-1,3-Dichloropropene	71		11	ug/m³ Air	45.4		157	59-166			
Trichloroethene	56		13	ug/m³ Air	53.7		104	70-130			
Trichlorofluoromethane	45		14	ug/m³ Air	56.2		81	46-161			
Vinyl chloride	28		6.4	ug/m³ Air	25.6		108	53-148			
4-Bromofluorobenzene	*31*			*ppbv*	*31.0*		*99*	*70-130*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28055 - NO PREP 2 - Continued

LCS Dup (1D28055-BSD1) Prepared: 04/28/2021 14:38 Analyzed: 04/28/2021 23:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	62		14	ug/m³ Air	54.6		113	70-130	0.3	25	
1,1,2,2-Tetrachloroethane	79		17	ug/m³ Air	68.7		114	52-163	0.01	25	
1,1,2-Trichloroethane	59		14	ug/m³ Air	54.6		108	70-134	0.2	25	
1,1-Dichloroethane	45		10	ug/m³ Air	40.5		111	70-130	0.2	25	
1,1-Dichloroethene	45		9.9	ug/m³ Air	39.7		114	67-142	0.7	25	
1,2,4-Trichlorobenzene	81		19	ug/m³ Air	74.2		109	22-180	5	25	
1,2-Dibromoethane	87		19	ug/m³ Air	76.8		113	70-141	0.2	25	
1,2-Dichlorobenzene	67		15	ug/m³ Air	60.1		112	37-180	0.4	25	
1,2-Dichloroethane	48		10	ug/m³ Air	40.5		119	70-130	1	25	
1,2-Dichloropropane	50		12	ug/m³ Air	46.2		108	70-130	0.1	25	
1,3-Dichlorobenzene	65		15	ug/m³ Air	60.1		108	47-178	0.2	25	
1,4-Dichlorobenzene	66		15	ug/m³ Air	60.1		110	45-180	3	25	
2-Butanone	30		7.4	ug/m³ Air	29.5		103	70-130	1	25	
2-Hexanone	47		10	ug/m³ Air	41.0		115	68-140	0.6	25	
4-Methyl-2-pentanone	46		10	ug/m³ Air	41.0		112	70-135	1	25	
Acetone	26		5.9	ug/m³ Air	23.8		110	65-130	0.3	25	
Benzene	34		8.0	ug/m³ Air	32.0		107	70-133	0.03	25	
Bromodichloromethane	74		17	ug/m³ Air	67.0		110	70-130	0.1	25	
Bromoform	110		26	ug/m³ Air	103		108	62-149	1	25	
Bromomethane	44		9.7	ug/m³ Air	38.8		114	69-130	1	25	
Carbon disulfide	31		7.8	ug/m³ Air	31.1		100	66-137	0.1	25	
Carbon tetrachloride	62		16	ug/m³ Air	62.9		98	22-166	0.3	25	
Chlorobenzene	48		12	ug/m³ Air	46.0		104	70-134	0.4	25	
Chloroethane	31		6.6	ug/m³ Air	26.4		117	69-131	2	25	
Chloroform	54		12	ug/m³ Air	48.8		111	70-130	0.8	25	
Chloromethane	22		5.2	ug/m³ Air	20.7		105	55-142	3	25	
cis-1,2-Dichloroethene	42		9.9	ug/m³ Air	39.6		106	70-130	1	25	
cis-1,3-Dichloropropene	53		11	ug/m³ Air	45.4		116	70-137	0.9	25	
Cyclohexane	36		8.6	ug/m³ Air	34.4		103	70-130	0.03	25	
Dibromochloromethane	91		21	ug/m³ Air	85.2		107	70-130	0.2	25	
Dichlorodifluoromethane	57		12	ug/m³ Air	49.5		114	61-137	2	25	
Ethylbenzene	43		11	ug/m³ Air	43.4		99	70-137	0.3	25	
Freon 113	82		19	ug/m³ Air	76.6		107	67-140	0.7	25	
m,p-Xylenes	86		22	ug/m³ Air	86.8		99	69-142	0.8	25	
Methylene chloride	37		8.7	ug/m³ Air	34.7		107	59-136	1	25	
Methyl-tert-butyl ether	38		9.0	ug/m³ Air	36.1		104	67-130	0.2	25	
o-Xylene	42		11	ug/m³ Air	43.4		96	70-140	1	25	
Styrene	48		11	ug/m³ Air	42.6		113	56-150	1	25	
Tetrachloroethene	70		17	ug/m³ Air	67.8		103	70-141	0.3	25	
Toluene	38		9.4	ug/m³ Air	37.7		101	70-138	0.3	25	
trans-1,2-Dichloroethene	42		9.9	ug/m³ Air	39.6		106	70-130	0.06	25	
trans-1,3-Dichloropropene	71		11	ug/m³ Air	45.4		156	59-166	1	25	
Trichloroethene	56		13	ug/m³ Air	53.7		104	70-130	0.9	25	
Trichlorofluoromethane	45		14	ug/m³ Air	56.2		81	46-161	0.4	25	
Vinyl chloride	29		6.4	ug/m³ Air	25.6		112	53-148	3	25	
4-Bromofluorobenzene	*30*			*ppbv*	*31.0*		*98*	*70-130*			

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

AE 02773

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1402 | PAGE 1 OF 1

PROJECT NO: 112G08782	FACILITY: HMFN	PROJECT MANAGER CHRIS HOOK	PHONE NUMBER	LABORATORY NAME AND CONTACT: ENDO ORLANDO
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER IAN FORESTER	PHONE NUMBER 304-780-1426	ADDRESS
		CARRIER/WAYBILL NUMBER		CITY, STATE ORLANDO, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): NA
PRESERVATIVE USED: NA
TYPE OF ANALYSIS: TO-15

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS				COMMENTS
16APR	0930 1550	HMFN-AMB1-FIELD-20210416	HMFN	/	/	AIR	8HR	1	X			SCM## JS-016 REG# 6698
26APR	0745 1600	HMFN-AMB2-PLOT-20210926	HMFN	/	/	AIR	8 HR	1	X			SCM## JS-063 REG## 6682

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	26APR21	1615	1. RECEIVED BY MELISSA BARNET	26APR21	1615
2. RELINQUISHED BY	4-27-21	1430	2. RECEIVED BY	4/27/21	1430
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: box 23.7°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

4/27/2021

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN SWMU 090 / 112G08982
Purchase Order # : 1170718

Lab Reference # : AE02773 Lab Receipt Date: 27-Apr-21 14:30
Anticipated ***(Estimated)*** Completion Date: 04-May-21 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN SWMU 090
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMFN-AMB1-FIELD-20210426(Lab ID: AE02773-01), Matrix: Air, Sampled: 26-Apr-21 15:50 (GMT-05:00) Eastern Time (US &			
Sample Comments: 8hr regulator			
TO15 (SUMMA)	5	26-May-21 23:59	Received
Sample ID: HMFN-AMB2-PLOT-20210426(Lab ID: AE02773-02), Matrix: Air, Sampled: 26-Apr-21 16:00 (GMT-05:00) Eastern Time (US &			
Sample Comments: 8hr regulator			
TO15 (SUMMA)	5	26-May-21 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AE02773-TE015

CLASS: 06_VOA_AIR

METHOD: TO-15

ANALYSES DATA PACKAGE COVER PAGE

TO-15

Laboratory: ENCO Orlando

SDG: AE02773-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Client Sample Id:	Lab Sample Id:
HMFN-AMB1-FIELD-20210426	AE02773-01
HMFN-AMB2-PLOT-20210426	AE02773-02

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-AMB1-FIELD-20210426

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Air
Laboratory ID: AE02773-01
File ID: 217DW012.D
Sampled: 04/26/21 15:50
Prepared: 04/29/21 07:00
Analyzed: 04/29/21 08:54
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 1D28055
Sequence: AA66150
Calibration: 2103167
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.33	3.6	UD	3.6	16
74-87-3	Chloromethane	1.33	1.5	JD	1.3	6.9
75-01-4	Vinyl chloride	1.33	1.9	UD	1.9	8.5
74-83-9	Bromomethane	1.33	1.7	UD	1.7	13
75-00-3	Chloroethane	1.33	1.1	UD	1.1	8.8
75-69-4	Trichlorofluoromethane	1.33	2.5	UD	2.5	19
75-34-3	1,1-Dichloroethane	1.33	1.9	UD	1.9	13
67-64-1	Acetone	1.33	7.2	JD	1.1	7.9
75-15-0	Carbon disulfide	1.33	1.7	UD	1.7	10
75-09-2	Methylene chloride	1.33	0.99	JD	0.92	12
76-13-1	Freon 113	1.33	3.3	UD	3.3	25
156-60-5	trans-1,2-Dichloroethene	1.33	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.33	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.33	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.33	2.0	UD	2.0	13
78-93-3	2-Butanone	1.33	1.3	UD	1.3	9.8
67-66-3	Chloroform	1.33	2.5	UD	2.5	16
107-06-2	1,2-Dichloroethane	1.33	2.0	UD	2.0	13
71-55-6	1,1,1-Trichloroethane	1.33	2.5	UD	2.5	18
110-82-7	Cyclohexane	1.33	1.6	UD	1.6	11
56-23-5	Carbon tetrachloride	1.33	2.3	UD	2.3	21
71-43-2	Benzene	1.33	1.5	UD	1.5	11
78-87-5	1,2-Dichloropropane	1.33	2.5	UD	2.5	15
79-01-6	Trichloroethene	1.33	2.5	UD	2.5	18
75-27-4	Bromodichloromethane	1.33	3.0	UD	3.0	22
10061-01-5	cis-1,3-Dichloropropene	1.33	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.33	2.1	UD	2.1	15
79-00-5	1,1,2-Trichloroethane	1.33	2.5	UD	2.5	18
108-10-1	4-Methyl-2-pentanone	1.33	1.9	UD	1.9	14
108-88-3	Toluene	1.33	1.9	UD	1.9	13
591-78-6	2-Hexanone	1.33	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.33	3.7	UD	3.7	26
127-18-4	Tetrachloroethene	1.33	2.8	UD	2.8	23
124-48-1	Dibromochloromethane	1.33	3.7	UD	3.7	28
108-90-7	Chlorobenzene	1.33	2.0	UD	2.0	15
100-41-4	Ethylbenzene	1.33	1.7	UD	1.7	14
1330-20-7	Xylenes (Total)	1.33	3.8	UD	3.8	14
100-42-5	Styrene	1.33	2.0	UD	2.0	14
75-25-2	Bromoform	1.33	5.2	UD	5.2	34
79-34-5	1,1,2,2-Tetrachloroethane	1.33	3.3	UD	3.3	23
541-73-1	1,3-Dichlorobenzene	1.33	2.2	UD	2.2	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-AMB1-FIELD-20210426

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Air
Laboratory ID: AE02773-01
File ID: 217DW012.D
Sampled: 04/26/21 15:50
Prepared: 04/29/21 07:00
Analyzed: 04/29/21 08:54
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 1D28055
Sequence: AA66150
Calibration: 2103167
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.33	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.33	2.2	UD	2.2	20
120-82-1	1,2,4-Trichlorobenzene	1.33	3.8	UD	3.8	25

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	28	92	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	417495	10.95	410314	10.97	
1,4-Difluorobenzene	1378940	12.46	1596494	12.47	
Chlorobenzene-d5	998081	15.86	1196660	15.87	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-AMB2-PLOT-20210426

Laboratory: ENCO Orlando SDG: AE02773-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Air Laboratory ID: AE02773-02 File ID: 217DW013.D

Sampled: 04/26/21 16:00 Prepared: 04/29/21 07:00 Analyzed: 04/29/21 09:39

Solids: Preparation: NO PREP 2 Initial/Final: 400 mL / 400 mL

Batch: 1D28055 Sequence: AA66150 Calibration: 2103167 Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1.33	3.6	UD	3.6	16
74-87-3	Chloromethane	1.33	1.4	JD	1.3	6.9
75-01-4	Vinyl chloride	1.33	1.9	UD	1.9	8.5
74-83-9	Bromomethane	1.33	1.7	UD	1.7	13
75-00-3	Chloroethane	1.33	1.1	UD	1.1	8.8
75-69-4	Trichlorofluoromethane	1.33	2.5	UD	2.5	19
75-34-3	1,1-Dichloroethane	1.33	1.9	UD	1.9	13
67-64-1	Acetone	1.33	10	D	1.1	7.9
75-15-0	Carbon disulfide	1.33	1.7	UD	1.7	10
75-09-2	Methylene chloride	1.33	0.93	JD	0.92	12
76-13-1	Freon 113	1.33	3.3	UD	3.3	25
156-60-5	trans-1,2-Dichloroethene	1.33	1.7	UD	1.7	13
1634-04-4	Methyl-tert-butyl ether	1.33	1.8	UD	1.8	12
75-35-4	1,1-Dichloroethene	1.33	2.0	UD	2.0	13
156-59-2	cis-1,2-Dichloroethene	1.33	2.0	UD	2.0	13
78-93-3	2-Butanone	1.33	1.3	JD	1.3	9.8
67-66-3	Chloroform	1.33	2.5	UD	2.5	16
107-06-2	1,2-Dichloroethane	1.33	2.0	UD	2.0	13
71-55-6	1,1,1-Trichloroethane	1.33	2.5	UD	2.5	18
110-82-7	Cyclohexane	1.33	1.6	UD	1.6	11
56-23-5	Carbon tetrachloride	1.33	2.3	UD	2.3	21
71-43-2	Benzene	1.33	1.5	UD	1.5	11
78-87-5	1,2-Dichloropropane	1.33	2.5	UD	2.5	15
79-01-6	Trichloroethene	1.33	2.5	UD	2.5	18
75-27-4	Bromodichloromethane	1.33	3.0	UD	3.0	22
10061-01-5	cis-1,3-Dichloropropene	1.33	2.3	UD	2.3	15
10061-02-6	trans-1,3-Dichloropropene	1.33	2.1	UD	2.1	15
79-00-5	1,1,2-Trichloroethane	1.33	2.5	UD	2.5	18
108-10-1	4-Methyl-2-pentanone	1.33	1.9	UD	1.9	14
108-88-3	Toluene	1.33	1.9	UD	1.9	13
591-78-6	2-Hexanone	1.33	1.8	UD	1.8	14
106-93-4	1,2-Dibromoethane	1.33	3.7	UD	3.7	26
127-18-4	Tetrachloroethene	1.33	2.8	UD	2.8	23
124-48-1	Dibromochloromethane	1.33	3.7	UD	3.7	28
108-90-7	Chlorobenzene	1.33	2.0	UD	2.0	15
100-41-4	Ethylbenzene	1.33	1.7	UD	1.7	14
1330-20-7	Xylenes (Total)	1.33	3.8	UD	3.8	14
100-42-5	Styrene	1.33	2.0	UD	2.0	14
75-25-2	Bromoform	1.33	5.2	UD	5.2	34
79-34-5	1,1,2,2-Tetrachloroethane	1.33	3.3	UD	3.3	23
541-73-1	1,3-Dichlorobenzene	1.33	2.2	UD	2.2	20

ORGANIC ANALYSIS DATA SHEET

TO-15

HMFN-AMB2-PLOT-20210426

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Air
Laboratory ID: AE02773-02
File ID: 217DW013.D
Sampled: 04/26/21 16:00
Prepared: 04/29/21 07:00
Analyzed: 04/29/21 09:39
Solids:
Preparation: NO PREP 2
Initial/Final: 400 mL / 400 mL
Batch: 1D28055
Sequence: AA66150
Calibration: 2103167
Instrument: OVGCMS7

CAS NO.	COMPOUND	DILUTION	CONC. (ug/m³ Air)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1.33	2.5	UD	2.5	20
95-50-1	1,2-Dichlorobenzene	1.33	2.2	UD	2.2	20
120-82-1	1,2,4-Trichlorobenzene	1.33	3.8	UD	3.8	25

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	29	92	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	414355	10.96	410314	10.97	
1,4-Difluorobenzene	1356748	12.46	1596494	12.47	
Chlorobenzene-d5	987222	15.86	1196660	15.87	

* Values outside of QC limits

HOLDING TIME SUMMARY

TO-15

Laboratory: ENCO Orlando

SDG: AE02773-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMFN-AMB1-FIELD-20210426	04/26/21 15:50	04/27/21 14:30	04/29/21 07:00	2.63	NA	04/29/21 08:54	3.00	30.00	
HMFN-AMB2-PLOT-20210426	04/26/21 16:00	04/27/21 14:30	04/29/21 07:00	2.63	NA	04/29/21 09:39	3.00	30.00	

PREPARATION BATCH SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Batch: 1D28055 Batch Matrix: Air Preparation: NO PREP 2

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1D28055-BLK1	217DW008.D	04/28/21 14:38	
LCS	1D28055-BS1	217DW005.D	04/28/21 14:38	
LCS Dup	1D28055-BSD1	217DW006.D	04/28/21 14:38	
HMFN-AMB1-FIELD-20210426	AE02773-01	217DW012.D	04/29/21 07:00	
HMFN-AMB2-PLOT-20210426	AE02773-02	217DW013.D	04/29/21 07:00	

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Air	Laboratory ID:	1D28055-BLK1	File ID:	217DW008.D
Prepared:	04/28/21 14:38	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	04/29/21 00:37	Instrument:	OVGCMS7		
Batch:	1D28055	Sequence:	AA66150	Calibration:	2103167

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
75-71-8	Dichlorodifluoromethane	2.7	U
74-87-3	Chloromethane	0.99	U
75-01-4	Vinyl chloride	1.4	U
74-83-9	Bromomethane	1.3	U
75-00-3	Chloroethane	0.84	U
75-69-4	Trichlorofluoromethane	1.9	U
75-34-3	1,1-Dichloroethane	1.5	U
67-64-1	Acetone	0.83	U
75-15-0	Carbon disulfide	1.3	U
75-09-2	Methylene chloride	0.69	U
76-13-1	Freon 113	2.5	U
156-60-5	trans-1,2-Dichloroethene	1.3	U
1634-04-4	Methyl-tert-butyl ether	1.3	U
75-35-4	1,1-Dichloroethene	1.5	U
156-59-2	cis-1,2-Dichloroethene	1.5	U
78-93-3	2-Butanone	0.94	U
67-66-3	Chloroform	1.9	U
107-06-2	1,2-Dichloroethane	1.5	U
71-55-6	1,1,1-Trichloroethane	1.9	U
110-82-7	Cyclohexane	1.2	U
56-23-5	Carbon tetrachloride	1.7	U
71-43-2	Benzene	1.2	U
78-87-5	1,2-Dichloropropane	1.8	U
79-01-6	Trichloroethene	1.9	U
75-27-4	Bromodichloromethane	2.3	U
10061-01-5	cis-1,3-Dichloropropene	1.7	U
10061-02-6	trans-1,3-Dichloropropene	1.5	U
79-00-5	1,1,2-Trichloroethane	1.9	U
108-10-1	4-Methyl-2-pentanone	1.4	U
108-88-3	Toluene	1.4	U

METHOD BLANK DATA SHEET
TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Air	Laboratory ID:	1D28055-BLK1	File ID:	217DW008.D
Prepared:	04/28/21 14:38	Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL
Analyzed:	04/29/21 00:37	Instrument:	OVGCMS7		
Batch:	1D28055	Sequence:	AA66150	Calibration:	2103167

CAS NO.	COMPOUND	CONC. (ug/m³ Air)	Q
591-78-6	2-Hexanone	1.4	U
106-93-4	1,2-Dibromoethane	2.8	U
127-18-4	Tetrachloroethene	2.1	U
124-48-1	Dibromochloromethane	2.8	U
108-90-7	Chlorobenzene	1.5	U
100-41-4	Ethylbenzene	1.3	U
1330-20-7	Xylenes (Total)	2.9	U
100-42-5	Styrene	1.5	U
75-25-2	Bromoform	3.9	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	1.7	U
106-46-7	1,4-Dichlorobenzene	1.9	U
95-50-1	1,2-Dichlorobenzene	1.6	U
120-82-1	1,2,4-Trichlorobenzene	2.9	U

SYSTEM MONITORING COMPOUND	ADDED (ppbv)	CONC (ppbv)	% REC	QC LIMITS	Q
4-Bromofluorobenzene	31.0	28	90	70 - 130	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Bromochloromethane	410552	10.95	410314	10.97	
1,4-Difluorobenzene	1348604	12.45	1596494	12.47	
Chlorobenzene-d5	987873	15.86	1196660	15.87	

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1D28055	Laboratory ID:	1D28055-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	49.5	58	116	61 - 137
Chloromethane	20.7	21	102	55 - 142
Vinyl chloride	25.6	28	108	53 - 148
Bromomethane	38.8	44	113	69 - 130
Chloroethane	26.4	30	115	69 - 131
Trichlorofluoromethane	56.2	45	81	46 - 161
1,1-Dichloroethane	40.5	45	111	70 - 130
Acetone	23.8	26	110	65 - 130
Carbon disulfide	31.1	31	100	66 - 137
Methylene chloride	34.7	38	108	59 - 136
Freon 113	76.6	83	108	67 - 140
trans-1,2-Dichloroethene	39.6	42	106	70 - 130
Methyl-tert-butyl ether	36.1	38	105	67 - 130
1,1-Dichloroethene	39.7	46	115	67 - 142
cis-1,2-Dichloroethene	39.6	42	107	70 - 130
2-Butanone	29.5	31	104	70 - 130
Chloroform	48.8	55	112	70 - 130
1,2-Dichloroethane	40.5	49	121	70 - 130
1,1,1-Trichloroethane	54.6	62	114	70 - 130
Cyclohexane	34.4	36	103	70 - 130
Carbon tetrachloride	62.9	62	98	22 - 166
Benzene	32.0	34	107	70 - 133
1,2-Dichloropropane	46.2	50	107	70 - 130
Trichloroethene	53.7	56	104	70 - 130
Bromodichloromethane	67.0	74	110	70 - 130
cis-1,3-Dichloropropene	45.4	52	115	70 - 137
trans-1,3-Dichloropropene	45.4	71	157	59 - 166
1,1,2-Trichloroethane	54.6	59	108	70 - 134
4-Methyl-2-pentanone	41.0	46	113	70 - 135
Toluene	37.7	38	101	70 - 138

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1D28055	Laboratory ID:	1D28055-BS1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCS CONCENTRATION (ug/m³ Air)	LCS % REC. #	QC LIMITS REC.
2-Hexanone	41.0	47	116	68 - 140
1,2-Dibromoethane	76.8	87	113	70 - 141
Tetrachloroethene	67.8	70	103	70 - 141
Dibromochloromethane	85.2	91	107	70 - 130
Chlorobenzene	46.0	48	104	70 - 134
Ethylbenzene	43.4	43	99	70 - 137
m,p-Xylenes	86.8	85	98	69 - 142
o-Xylene	43.4	41	94	70 - 140
Styrene	42.6	47	111	56 - 150
Bromoform	103	110	107	62 - 149
1,1,2,2-Tetrachloroethane	68.7	79	114	52 - 163
1,3-Dichlorobenzene	60.1	65	107	47 - 178
1,4-Dichlorobenzene	60.1	65	107	45 - 180
1,2-Dichlorobenzene	60.1	67	112	37 - 180
1,2,4-Trichlorobenzene	74.2	77	104	22 - 180

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	49.5	57	114	2	25	61 - 137
Chloromethane	20.7	22	105	3	25	55 - 142
Vinyl chloride	25.6	29	112	3	25	53 - 148
Bromomethane	38.8	44	114	1	25	69 - 130
Chloroethane	26.4	31	117	2	25	69 - 131
Trichlorofluoromethane	56.2	45	81	0.4	25	46 - 161
1,1-Dichloroethane	40.5	45	111	0.2	25	70 - 130
Acetone	23.8	26	110	0.3	25	65 - 130
Carbon disulfide	31.1	31	100	0.1	25	66 - 137
Methylene chloride	34.7	37	107	1	25	59 - 136
Freon 113	76.6	82	107	0.7	25	67 - 140
trans-1,2-Dichloroethene	39.6	42	106	0.06	25	70 - 130

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1D28055	Laboratory ID:	1D28055-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Methyl-tert-butyl ether	36.1	38	104	0.2	25	67 - 130
1,1-Dichloroethene	39.7	45	114	0.7	25	67 - 142
cis-1,2-Dichloroethene	39.6	42	106	1	25	70 - 130
2-Butanone	29.5	30	103	1	25	70 - 130
Chloroform	48.8	54	111	0.8	25	70 - 130
1,2-Dichloroethane	40.5	48	119	1	25	70 - 130
1,1,1-Trichloroethane	54.6	62	113	0.3	25	70 - 130
Cyclohexane	34.4	36	103	0.03	25	70 - 130
Carbon tetrachloride	62.9	62	98	0.3	25	22 - 166
Benzene	32.0	34	107	0.03	25	70 - 133
1,2-Dichloropropane	46.2	50	108	0.1	25	70 - 130
Trichloroethene	53.7	56	104	0.9	25	70 - 130
Bromodichloromethane	67.0	74	110	0.1	25	70 - 130
cis-1,3-Dichloropropene	45.4	53	116	0.9	25	70 - 137
trans-1,3-Dichloropropene	45.4	71	156	1	25	59 - 166
1,1,2-Trichloroethane	54.6	59	108	0.2	25	70 - 134
4-Methyl-2-pentanone	41.0	46	112	1	25	70 - 135
Toluene	37.7	38	101	0.3	25	70 - 138
2-Hexanone	41.0	47	115	0.6	25	68 - 140
1,2-Dibromoethane	76.8	87	113	0.2	25	70 - 141
Tetrachloroethene	67.8	70	103	0.3	25	70 - 141
Dibromochloromethane	85.2	91	107	0.2	25	70 - 130
Chlorobenzene	46.0	48	104	0.4	25	70 - 134
Ethylbenzene	43.4	43	99	0.3	25	70 - 137
m,p-Xylenes	86.8	86	99	0.8	25	69 - 142
o-Xylene	43.4	42	96	1	25	70 - 140
Styrene	42.6	48	113	1	25	56 - 150
Bromoform	103	110	108	1	25	62 - 149
1,1,2,2-Tetrachloroethane	68.7	79	114	0.01	25	52 - 163
1,3-Dichlorobenzene	60.1	65	108	0.2	25	47 - 178

LCS / LCS DUPLICATE RECOVERY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Air		
Batch:	1D28055	Laboratory ID:	1D28055-BSD1
Preparation:	NO PREP 2	Initial/Final:	400 mL / 400 mL

COMPOUND	SPIKE ADDED (ug/m³ Air)	LCSD CONCENTRATION (ug/m³ Air)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,4-Dichlorobenzene	60.1	66	110	3	25	45 - 180
1,2-Dichlorobenzene	60.1	67	112	0.4	25	37 - 180
1,2,4-Trichlorobenzene	74.2	81	109	5	25	22 - 180

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA65685
Instrument: OVGCMS7
Matrix: Air
Calibration: 2103167

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA65685-SCV1)			Lab File ID: 217CZ016.D		Analyzed: 04/01/21 01:45			
4-Bromofluorobenzene	31.0	102	0 - 200	17.3	17.3	0.0000	+/-1.0	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66150
Instrument: OVGCMS7
Matrix: Air
Calibration: 2103167

Surrogate Compound	Spike Level ppbv	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA66150-CCV1)			Lab File ID: 217DW003.D		Analyzed: 04/28/21 21:13			
4-Bromofluorobenzene	31.0	97	0 - 200	17.29	17.3	-0.0100	+/-1.0	
Instrument RL Check (AA66150-CRL1)			Lab File ID: 217DW004.D		Analyzed: 04/28/21 21:53			
4-Bromofluorobenzene	31.0	93	0 - 200	17.29	17.3	-0.0100	+/-1.0	
LCS (1D28055-BS1)			Lab File ID: 217DW005.D		Analyzed: 04/28/21 22:33			
4-Bromofluorobenzene	31.0	99	70 - 130	17.29	17.3	-0.0100	+/-1.0	
LCS Dup (1D28055-BSD1)			Lab File ID: 217DW006.D		Analyzed: 04/28/21 23:12			
4-Bromofluorobenzene	31.0	98	70 - 130	17.29	17.3	-0.0100	+/-1.0	
Blank (1D28055-BLK1)			Lab File ID: 217DW008.D		Analyzed: 04/29/21 00:37			
4-Bromofluorobenzene	31.0	90	70 - 130	17.29	17.3	-0.0100	+/-1.0	
HMFN-AMB1-FIELD-20210426 (AE02773-01)			Lab File ID: 217DW012.D		Analyzed: 04/29/21 08:54			
4-Bromofluorobenzene	31.0	92	70 - 130	17.29	17.3	-0.0100	+/-1.0	
HMFN-AMB2-PLOT-20210426 (AE02773-02)			Lab File ID: 217DW013.D		Analyzed: 04/29/21 09:39			
4-Bromofluorobenzene	31.0	92	70 - 130	17.29	17.3	-0.0100	+/-1.0	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA65685
Instrument: OVGCMS7
Matrix: Air
Calibration: 2103167

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA65685-CAL1)			Lab File ID: 217CZ002.D			Analyzed: 03/31/21 15:32			
Bromochloromethane	483938	10.97	410314	10.97	118	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1569689	12.47	1596494	12.47	98	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1167168	15.87	1196660	15.87	98	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL2)			Lab File ID: 217CZ003.D			Analyzed: 03/31/21 16:14			
Bromochloromethane	484907	10.97	410314	10.97	118	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1577449	12.47	1596494	12.47	99	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1154884	15.87	1196660	15.87	97	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL3)			Lab File ID: 217CZ004.D			Analyzed: 03/31/21 16:56			
Bromochloromethane	431227	10.97	410314	10.97	105	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1417918	12.47	1596494	12.47	89	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1044354	15.87	1196660	15.87	87	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL4)			Lab File ID: 217CZ005.D			Analyzed: 03/31/21 17:36			
Bromochloromethane	481792	10.97	410314	10.97	117	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1574428	12.47	1596494	12.47	99	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1164958	15.87	1196660	15.87	97	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL5)			Lab File ID: 217CZ006.D			Analyzed: 03/31/21 18:19			
Bromochloromethane	484725	10.97	410314	10.97	118	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1565412	12.47	1596494	12.47	98	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1166723	15.87	1196660	15.87	97	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL6)			Lab File ID: 217CZ007.D			Analyzed: 03/31/21 18:58			
Bromochloromethane	479989	10.97	410314	10.97	117	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1566277	12.47	1596494	12.47	98	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1180699	15.87	1196660	15.87	99	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL7)			Lab File ID: 217CZ009.D			Analyzed: 03/31/21 20:36			
Bromochloromethane	410314	10.97	410314	10.97	100	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1596494	12.47	1596494	12.47	100	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1196660	15.87	1196660	15.87	100	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL8)			Lab File ID: 217CZ011.D			Analyzed: 03/31/21 22:06			
Bromochloromethane	499257	10.97	410314	10.97	122	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1558506	12.47	1596494	12.47	98	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1175355	15.87	1196660	15.87	98	60 - 140	0.0000	+/-0.50	
Cal Standard (AA65685-CAL9)			Lab File ID: 217CZ013.D			Analyzed: 03/31/21 23:42			
Bromochloromethane	487575	10.98	410314	10.97	119	60 - 140	0.0100	+/-0.50	
1,4-Difluorobenzene	1463213	12.48	1596494	12.47	92	60 - 140	0.0100	+/-0.50	
Chlorobenzene-d5	1096162	15.87	1196660	15.87	92	60 - 140	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA65685
Instrument: OVGCMS7
Matrix: Air
Calibration: 2103167

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA65685-SCV1)			Lab File ID: 217CZ016.D			Analyzed: 04/01/21 01:45			
Bromochloromethane	486420	10.97	410314	10.97	119	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1568006	12.47	1596494	12.47	98	60 - 140	0.0000	+/-0.50	
Chlorobenzene-d5	1182914	15.87	1196660	15.87	99	60 - 140	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66150
Instrument: OVGCMS7
Matrix: Air
Calibration: 2103167

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA66150-CCV1)			Lab File ID: 217DW003.D			Analyzed: 04/28/21 21:13			
Bromochloromethane	394571	10.96	410314	10.97	96	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1287513	12.46	1596494	12.47	81	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	973383	15.86	1196660	15.87	81	60 - 140	-0.0100	+/-0.50	
Instrument RL Check (AA66150-CRL1)			Lab File ID: 217DW004.D			Analyzed: 04/28/21 21:53			
Bromochloromethane	402504	10.95	410314	10.97	98	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1320181	12.46	1596494	12.47	83	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	970355	15.86	1196660	15.87	81	60 - 140	-0.0100	+/-0.50	
LCS (1D28055-BS1)			Lab File ID: 217DW005.D			Analyzed: 04/28/21 22:33			
Bromochloromethane	395112	10.97	410314	10.97	96	60 - 140	0.0000	+/-0.50	
1,4-Difluorobenzene	1298602	12.46	1596494	12.47	81	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	989616	15.86	1196660	15.87	83	60 - 140	-0.0100	+/-0.50	
LCS Dup (1D28055-BSD1)			Lab File ID: 217DW006.D			Analyzed: 04/28/21 23:12			
Bromochloromethane	402213	10.96	410314	10.97	98	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1309774	12.46	1596494	12.47	82	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	995324	15.86	1196660	15.87	83	60 - 140	-0.0100	+/-0.50	
Blank (1D28055-BLK1)			Lab File ID: 217DW008.D			Analyzed: 04/29/21 00:37			
Bromochloromethane	410552	10.95	410314	10.97	100	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1348604	12.45	1596494	12.47	84	60 - 140	-0.0200	+/-0.50	
Chlorobenzene-d5	987873	15.86	1196660	15.87	83	60 - 140	-0.0100	+/-0.50	
HMFN-AMB1-FIELD-20210426 (AE02773-01)			Lab File ID: 217DW012.D			Analyzed: 04/29/21 08:54			
Bromochloromethane	417495	10.95	410314	10.97	102	60 - 140	-0.0200	+/-0.50	
1,4-Difluorobenzene	1378940	12.46	1596494	12.47	86	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	998081	15.86	1196660	15.87	83	60 - 140	-0.0100	+/-0.50	
HMFN-AMB2-PLOT-20210426 (AE02773-02)			Lab File ID: 217DW013.D			Analyzed: 04/29/21 09:39			
Bromochloromethane	414355	10.96	410314	10.97	101	60 - 140	-0.0100	+/-0.50	
1,4-Difluorobenzene	1356748	12.46	1596494	12.47	85	60 - 140	-0.0100	+/-0.50	
Chlorobenzene-d5	987222	15.86	1196660	15.87	82	60 - 140	-0.0100	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA65685		
Calibration:	2103167	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA65685-TUN1	217CZ001.D	03/31/21 14:43
Cal Standard	AA65685-CAL1	217CZ002.D	03/31/21 15:32
Cal Standard	AA65685-CAL2	217CZ003.D	03/31/21 16:14
Cal Standard	AA65685-CAL3	217CZ004.D	03/31/21 16:56
Cal Standard	AA65685-CAL4	217CZ005.D	03/31/21 17:36
Cal Standard	AA65685-CAL5	217CZ006.D	03/31/21 18:19
Cal Standard	AA65685-CAL6	217CZ007.D	03/31/21 18:58
Cal Standard	AA65685-CAL7	217CZ009.D	03/31/21 20:36
Cal Standard	AA65685-CAL8	217CZ011.D	03/31/21 22:06
Cal Standard	AA65685-CAL9	217CZ013.D	03/31/21 23:42
Secondary Cal Check	AA65685-SCV1	217CZ016.D	04/01/21 01:45

ANALYSIS BATCH (SEQUENCE) SUMMARY

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA66150		
Calibration:	2103167	Instrument:	OVGCMS7

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA66150-TUN1	217DW002.D	04/28/21 20:33
Calibration Check	AA66150-CCV1	217DW003.D	04/28/21 21:13
Instrument RL Check	AA66150-CRL1	217DW004.D	04/28/21 21:53
LCS	1D28055-BS1	217DW005.D	04/28/21 22:33
LCS Dup	1D28055-BSD1	217DW006.D	04/28/21 23:12
Blank	1D28055-BLK1	217DW008.D	04/29/21 00:37
HMFN-AMB1-FIELD-20210426	AE02773-01	217DW012.D	04/29/21 08:54
HMFN-AMB2-PLOT-20210426	AE02773-02	217DW013.D	04/29/21 09:39

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	217CZ001.D	Injection Date:	03/31/21
Instrument ID:	OVGCMS7	Injection Time:	14:43
Sequence:	AA65685	Lab Sample ID:	AA65685-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	21.6	PASS
75	30 - 66% of 95	43.2	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.62	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	81.6	PASS
175	4 - 9% of 174	8.25	PASS
176	95 - 101% of 174	96	PASS
177	5 - 9% of 176	6.52	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	217DW002.D	Injection Date:	04/28/21
Instrument ID:	OVGCMS7	Injection Time:	20:33
Sequence:	AA66150	Lab Sample ID:	AA66150-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	8 - 40% of 95	23.3	PASS
75	30 - 66% of 95	45.8	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	6.52	PASS
173	Less than 2% of 174	0	PASS
174	50 - 120% of 95	73.9	PASS
175	4 - 9% of 174	8.76	PASS
176	95 - 101% of 174	96.5	PASS
177	5 - 9% of 176	6.49	PASS

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS7	Calibration:	2103167
Lab File ID:	217DW003.D	Calibration Date:	03/31/21 00:00
Sequence:	AA66150	Injection Date:	04/28/21
Lab Sample ID:	AA66150-CCV1	Injection Time:	21:13

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	10.0	11	5.0039	5.633875		13	30
Chloromethane	A	10.0	10	2.904965	2.920547		0.50	30
Vinyl chloride	A	10.0	10	2.485318	2.514194		1.2	30
Bromomethane	A	10.0	10	1.693085	1.726378		2.0	30
Chloroethane	A	10.0	11	0.8516122	0.9380585		10	30
Trichlorofluoromethane	A	10.0	7.8	3.920738	3.067513		-22	30
1,1-Dichloroethane	A	10.0	11	3.763689	3.966335		5.4	30
Acetone	A	10.0	11	4.355915	4.934116		13	30
Carbon disulfide	A	10.0	10	6.08848	6.151493		1.0	30
Methylene chloride	A	10.0	11	1.757898	1.860553		5.8	30
Freon 113	A	10.0	10	3.011125	3.10209		3.0	30
trans-1,2-Dichloroethene	A	10.0	11	2.996114	3.211658		7.2	30
Methyl-tert-butyl ether	A	10.0	11	5.385562	5.686538		5.6	30
1,1-Dichloroethene	A	10.0	11	3.330683	3.652196		9.7	30
cis-1,2-Dichloroethene	A	10.0	10	2.037699	2.079305		2.0	30
2-Butanone	A	10.0	10	6.443198	6.672129		3.6	30
Chloroform	A	10.0	11	3.932209	4.264722		8.5	30
1,2-Dichloroethane	A	10.0	12	2.458029	2.876644		17	30
1,1,1-Trichloroethane	A	10.0	11	3.453102	3.805895		10	30
Cyclohexane	A	10.0	11	3.538731	3.746342		5.9	30
Carbon tetrachloride	A	10.0	9.0	3.12405	2.813728		-9.9	30
Benzene	A	10.0	10	5.623562	5.733779		2.0	30
1,2-Dichloropropane	A	10.0	10	0.7193571	0.734152		2.1	30
Trichloroethene	A	10.0	11	0.8098647	0.86065		6.3	30
Bromodichloromethane	A	10.0	11	1.196554	1.33839		12	30
cis-1,3-Dichloropropene	A	10.0	10	1.019334	1.040203		2.0	30
trans-1,3-Dichloropropene	A	10.0	10	0.6004615	0.6289626		4.7	30
1,1,2-Trichloroethane	A	10.0	10	0.6568551	0.6782009		3.2	30
4-Methyl-2-pentanone	A	10.0	11	2.0821	2.340559		12	30

CONTINUING CALIBRATION CHECK

TO-15

Laboratory:	ENCO Orlando	SDG:	AE02773-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS7	Calibration:	2103167
Lab File ID:	217DW003.D	Calibration Date:	03/31/21 00:00
Sequence:	AA66150	Injection Date:	04/28/21
Lab Sample ID:	AA66150-CCV1	Injection Time:	21:13

		CONC. (ppbv)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	10.0	9.8	1.219121	1.192437		-2.2	30
2-Hexanone	A	10.0	11	1.800591	2.048666		14	30
1,2-Dibromoethane	A	10.0	10	1.070637	1.107347		3.4	30
Tetrachloroethene	A	10.0	9.9	0.8895147	0.8841014		-0.6	30
Dibromochloromethane	A	10.0	11	0.966109	1.05059		8.7	30
Chlorobenzene	A	10.0	9.9	1.836412	1.818465		-1	30
Ethylbenzene	A	10.0	9.5	0.9368173	0.886197		-5.4	30
m,p-Xylenes	A	20.0	19	1.19939	1.120338		-6.6	30
o-Xylene	A	10.0	9.1	1.200479	1.096892		-8.6	30
Styrene	A	10.0	10	1.601819	1.66836		4.2	30
Bromoform	A	10.0	11	1.262552	1.358613		7.6	30
1,1,2,2-Tetrachloroethane	A	10.0	9.5	1.479737	1.406955		-4.9	30
1,3-Dichlorobenzene	A	10.0	9.6	1.250121	1.20505		-3.6	30
1,4-Dichlorobenzene	A	10.0	9.7	1.146538	1.116112		-2.7	30
1,2-Dichlorobenzene	A	10.0	9.9	1.145963	1.097099		-1.2	30
1,2,4-Trichlorobenzene	A	10.0	8.6	0.2367466	0.2947249		-14	30

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA65685
Instrument: OVGCMS7

Calibration: 2103167

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A1C1113	Air- VIRTUAL TUN-032321	AA65685-TUN1	217CZ001.D	03/31/21 14:43
A1C0718	Air- Virtual CAL1 030821	AA65685-CAL1	217CZ002.D	03/31/21 15:32
A1C0719	Air- Virtual CAL2 030821	AA65685-CAL2	217CZ003.D	03/31/21 16:14
A1C0720	Air- Virtual CAL3 030821	AA65685-CAL3	217CZ004.D	03/31/21 16:56
A1C0721	Air- Virtual CAL4 030821	AA65685-CAL4	217CZ005.D	03/31/21 17:36
A1C0722	Air- Virtual CAL5 030821	AA65685-CAL5	217CZ006.D	03/31/21 18:19
A1C0723	Air- Virtual CAL6 030821	AA65685-CAL6	217CZ007.D	03/31/21 18:58
A1C0724	Air- Virtual CAL7 030821	AA65685-CAL7	217CZ009.D	03/31/21 20:36
A1C0725	Air- Virtual CAL8 030821	AA65685-CAL8	217CZ011.D	03/31/21 22:06
A1C0726	Air- Virtual CAL9 030821	AA65685-CAL9	217CZ013.D	03/31/21 23:42
A1C0677	Air- Virtual SCV 030521	AA65685-SCV1	217CZ016.D	04/01/21 01:45

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando

SDG: AE02773-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Calibration: 2103167

Instrument: OVGCMS7

Matrix: Air

Calibration Date: 03/31/21 00:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	0.125	5.33832	0.25	5.204907	0.5	7.13703	1.25	5.084548	2.5	4.982691	5	4.463754
Chloromethane	0.125	3.034802	0.25	2.943583	0.5	3.985465	1.25	2.817096	2.5	2.766283	5	2.525718
Vinyl chloride	0.125	2.359889	0.25	2.415523	0.5	3.319639	1.25	2.483644	2.5	2.41203	5	2.2266
Bromomethane	0.125	1.736222	0.25	1.785942	0.5	2.396023	1.25	1.662317	2.5	1.629031	5	1.462433
Chloroethane	0.125	0.8727234	0.25	0.8840211	0.5	1.158401	1.25	0.8273496	2.5	0.8270248	5	0.766738
Trichlorofluoromethane	0.125	3.817332	0.25	3.886675	0.5	5.567142	1.25	3.987832	2.5	3.838737	5	3.485991
1,1-Dichloroethane	0.125	3.720989	0.25	3.697699	0.5	5.306764	1.25	3.766492	2.5	3.645033	5	3.361007
Acetone	0.125	~~11.41869~~	0.25	~~9.690221~~	0.5	~~7.113307~~	1.25	4.947008	2.5	4.667936	5	4.066195
Carbon disulfide	0.125	6.862896	0.25	6.370987	0.5	8.626403	1.25	6.151254	2.5	6.011758	5	5.442265
Methylene chloride	0.125	~~7.877059~~	0.25	~~7.071657~~	0.5	~~3.377006~~	1.25	2.204035	2.5	2.084791	5	1.664648
Freon 113	0.125	3.137807	0.25	3.064538	0.5	4.343323	1.25	3.062835	2.5	3.061749	5	2.792647
trans-1,2-Dichloroethene	0.125	3.053251	0.25	2.983731	0.5	4.185169	1.25	2.977902	2.5	2.980144	5	2.716347
Methyl-tert-butyl ether	0.125	5.661171	0.25	5.413063	0.5	7.7002	1.25	5.261774	2.5	5.168208	5	4.79218
1,1-Dichloroethene	0.125	3.264385	0.25	3.258885	0.5	4.654885	1.25	3.384139	2.5	3.317871	5	3.042823
cis-1,2-Dichloroethene	0.125	2.193339	0.25	1.93963	0.5	2.886155	1.25	2.000247	2.5	1.984409	5	1.818037
2-Butanone	0.125	7.219569	0.25	6.652789	0.5	8.652858	1.25	6.128348	2.5	5.923681	5	5.576046
Chloroform	0.125	3.948522	0.25	4.113754	0.5	5.52516	1.25	3.857087	2.5	3.835462	5	3.513504
1,2-Dichloroethane	0.125	2.408061	0.25	2.362589	0.5	3.389945	1.25	2.456106	2.5	2.374323	5	2.201218
1,1,1-Trichloroethane	0.125	3.470395	0.25	3.395694	0.5	5.026977	1.25	3.478338	2.5	3.424316	5	3.086534
Cyclohexane	0.125	3.512929	0.25	3.468063	0.5	4.91857	1.25	3.472727	2.5	3.469493	5	3.240608
Carbon tetrachloride	0.125	3.593386	0.25	3.55961	0.5	3.568371	1.25	2.672453	2.5	2.537507	5	3.110456
Benzene	0.125	5.731891	0.25	5.931917	0.5	7.696318	1.25	5.565834	2.5	5.4186	5	5.022671
1,2-Dichloropropane	0.125	0.7637385	0.25	0.7246865	0.5	0.9475879	1.25	0.7087186	2.5	0.6988432	5	0.6367018
Trichloroethene	0.125	0.8659601	0.25	0.8228678	0.5	1.099667	1.25	0.7977475	2.5	0.7816519	5	0.7244484
Bromodichloromethane	0.125	1.138814	0.25	1.130068	0.5	1.638241	1.25	1.158683	2.5	1.17933	5	1.121883
cis-1,3-Dichloropropene	0.125	1.128861	0.25	1.034952	0.5	1.338193	1.25	0.9581791	2.5	0.9565765	5	0.9087727
trans-1,3-Dichloropropene	0.125	0.5994257	0.25	0.6742202	0.5	0.8615787	1.25	0.5477357	2.5	0.5680319	5	0.5359241
1,1,2-Trichloroethane	0.125	0.6924837	0.25	0.6794869	0.5	0.887552	1.25	0.6189494	2.5	0.6232509	5	0.5882823
4-Methyl-2-pentanone	0.125	2.09878	0.25	2.007253	0.5	2.743943	1.25	1.991037	2.5	2.021365	5	1.873906
Toluene	0.125	1.482133	0.25	1.340658	0.5	1.614673	1.25	1.142884	2.5	1.144286	5	1.033511
2-Hexanone	0.125	1.864792	0.25	1.789352	0.5	2.351458	1.25	1.684414	2.5	1.708405	5	1.609609

INITIAL CALIBRATION DATA

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103167
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 03/31/21 00:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	0.125	1.150032	0.25	1.068832	0.5	1.376803	1.25	1.006679	2.5	1.010726	5	0.9791853
Tetrachloroethene	0.125	1.022847	0.25	0.9750528	0.5	1.216678	1.25	0.8649917	2.5	0.8618702	5	0.7821267
Dibromochloromethane	0.125	0.9751333	0.25	0.9286741	0.5	1.217159	1.25	0.9020241	2.5	0.897896	5	0.9492398
Chlorobenzene	0.125	2.18727	0.25	2.088134	0.5	2.48468	1.25	1.728356	2.5	1.725922	5	1.635159
Ethylbenzene	0.125	1.294429	0.25	1.170334	0.5	1.224679	1.25	0.8716716	2.5	0.8630515	5	0.7847126
m,p-Xylenes	0.25	1.752111	0.5	1.597291	1	1.428604	2.5	1.118605	5	1.093569	10	1.001248
o-Xylene	0.125	1.729163	0.25	1.579199	0.5	1.485121	1.25	1.059967	2.5	1.039807	5	0.9531583
Styrene	0.125	1.8745	0.25	1.826795	0.5	1.942899	1.25	1.419974	2.5	1.461114	5	1.393098
Bromoform	0.125	1.260645	0.25	1.234004	0.5	1.480847	1.25	1.084044	2.5	1.099749	5	1.269092
1,1,2,2-Tetrachloroethane	0.125	2.017286	0.25	1.823359	0.5	1.680853	1.25	1.164578	2.5	1.176962	5	1.306953
1,3-Dichlorobenzene	0.125	1.841565	0.25	1.6404	0.5	1.335338	1.25	0.9414121	2.5	0.9717021	5	1.057199
1,4-Dichlorobenzene	0.125	1.70834	0.25	1.497491	0.5	1.179204	1.25	0.8549603	2.5	0.8603201	5	0.9659027
1,2-Dichlorobenzene	0.125	1.826267	0.25	1.594338	0.5	1.192917	1.25	0.8228362	2.5	0.8292117	5	0.9545288
1,2,4-Trichlorobenzene	0.125	~~0.9523359~~	0.25	~~0.6853433~~	0.5	0.2355083	1.25	0.1495079	2.5	0.1567213	5	0.2231729
4-Bromofluorobenzene	31	0.464856	31	0.4761742	31	0.4708231	31	0.4737089	31	0.4793623	31	0.485686

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103167
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 03/31/21 00:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
Dichlorodifluoromethane	10	5.089727	25	4.070883	50	3.663242						
Chloromethane	10	2.844083	25	2.543098	50	2.684561						
Vinyl chloride	10	2.509849	25	2.269082	50	2.37161						
Bromomethane	10	1.555878	25	1.495574	50	1.514349						
Chloroethane	10	0.8034717	25	0.7610029	50	0.7637772						
Trichlorofluoromethane	10	3.806894	25	3.476501	50	3.419536						
1,1-Dichloroethane	10	3.356045	25	3.453346	50	3.56583						
Acetone	10	4.161663	25	4.146765	50	4.145925						
Carbon disulfide	10	4.995491	25	5.536792	50	4.798476						
Methylene chloride	10	1.512534	25	1.634641	50	1.446738						
Freon 113	10	2.54458	25	2.711358	50	2.381287						
trans-1,2-Dichloroethene	10	2.7342	25	2.73767	50	2.596612						
Methyl-tert-butyl ether	10	4.764726	25	4.837311	50	4.871422						
1,1-Dichloroethene	10	3.134489	25	3.058104	50	2.860562						
cis-1,2-Dichloroethene	10	1.707239	25	1.881788	50	1.928446						
2-Butanone	10	5.809193	25	5.861783	50	6.164512						
Chloroform	10	3.638949	25	3.517624	50	3.439817						
1,2-Dichloroethane	10	2.510997	25	2.209027	50	2.209991						
1,1,1-Trichloroethane	10	3.333569	25	2.984197	50	2.877901						
Cyclohexane	10	3.146585	25	3.289745	50	3.329856						
Carbon tetrachloride	10	3.421398	25	2.924278	50	2.728988						
Benzene	10	4.891623	25	5.120516	50	5.232689						
1,2-Dichloropropane	10	0.5986411	25	0.6769976	50	0.7182983						
Trichloroethene	10	0.6849967	25	0.7492746	50	0.7621687						
Bromodichloromethane	10	1.07327	25	1.162645	50	1.166056						
cis-1,3-Dichloropropene	10	0.8564401	25	0.9714251	50	1.020607						
trans-1,3-Dichloropropene	10	0.5090679	25	0.5604341	50	0.5477354						
1,1,2-Trichloroethane	10	0.5539749	25	0.6198647	50	0.6478514						
4-Methyl-2-pentanone	10	1.793413	25	2.042611	50	2.166596						
Toluene	10	0.9841454	25	1.095782	50	1.134016						
2-Hexanone	10	1.526476	25	1.778109	50	1.892702						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103167
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 03/31/21 00:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF	ppbv	RF
1,2-Dibromoethane	10	0.9258384	25	1.041142	50	1.076496						
Tetrachloroethene	10	0.7381717	25	0.7948906	50	0.7490035						
Dibromochloromethane	10	0.8935179	25	0.9692259	50	0.9621105						
Chlorobenzene	10	1.508694	25	1.617667	50	1.551822						
Ethylbenzene	10	0.7290619	25	0.765311	50	0.728105						
m,p-Xylenes	20	0.9298912	50	0.9624515	100	0.9107399						
o-Xylene	10	0.9129879	25	1.001417	50	1.043494						
Styrene	10	1.343365	25	1.523222	50	1.631401						
Bromoform	10	1.228933	25	1.355818	50	1.349836						
1,1,2,2-Tetrachloroethane	10	1.241977	25	1.401736	50	1.503929						
1,3-Dichlorobenzene	10	0.9999343	25	1.183459	50	1.280076						
1,4-Dichlorobenzene	10	0.9140941	25	1.115217	50	1.223315						
1,2-Dichlorobenzene	10	0.9089596	25	1.047896	50	1.136717						
1,2,4-Trichlorobenzene	10	0.2285714	25	0.3073765	50	0.3563676						
4-Bromofluorobenzene	31	0.4948724	31	0.5294009	31	0.5828117						

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Calibration: 2103167
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 03/31/21 00:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	5.0039	19.57612	4.584444	0.5465588			30	
Chloromethane	2.904965	15.10262	5.081111	0.5339955			30	
Vinyl chloride	2.485318	13.10998	5.332222	0.4377134			30	
Bromomethane	1.693085	16.8699	6.15	0.2936307			30	
Chloroethane	0.8516122	14.51597	6.47	0.2185316			30	
Trichlorofluoromethane	3.920738	16.5889	6.797778	0.2048565			30	
1,1-Dichloroethane	3.763689	15.9006	9.998889	5.984338E-02			30	
Acetone	4.355915	8.31711	8.936667	8.987979E-02			30	
Carbon disulfide	6.08848	19.00479	7.868889	0.1482656			30	
Methylene chloride	1.757898	17.75009	8.833333	5.355514E-02			30	
Freon 113	3.011125	18.75288	7.928889	0.1836272			30	
trans-1,2-Dichloroethene	2.996114	15.7928	9.093334	5.621992E-02			30	
Methyl-tert-butyl ether	5.385562	17.11811	9.303333	0.1323557			30	
1,1-Dichloroethene	3.330683	15.68281	7.832222	0.1238394			30	
cis-1,2-Dichloroethene	2.037699	16.92607	10.71222	4.129955E-02			30	
2-Butanone	6.443198	14.99524	11.43333	6.497242E-02			30	
Chloroform	3.932209	16.23746	11.04222	5.983294E-02			30	
1,2-Dichloroethane	2.458029	14.9435	12.01222	4.127228E-02			30	
1,1,1-Trichloroethane	3.453102	18.26264	11.33444	4.239353E-02			30	
Cyclohexane	3.538731	15.04311	11.00111	3.080642E-02			30	
Carbon tetrachloride	3.12405	13.58041	11.25333	6.273842E-02			30	
Benzene	5.623562	15.07717	11.78333	0.0397311			30	
1,2-Dichloropropane	0.7193571	13.71068	13.07444	3.841812E-02			30	
Trichloroethene	0.8098647	14.93758	12.45778	3.791692E-02			30	
Bromodichloromethane	1.196554	14.09107	13.11111	1.866223E-02			30	
cis-1,3-Dichloropropene	1.019334	13.98809	13.83444	3.631076E-02			30	
trans-1,3-Dichloropropene	0.6004615	18.08644	14.56	1.731851E-02			30	
1,1,2-Trichloroethane	0.6568551	14.67214	14.75444	3.514638E-02			30	
4-Methyl-2-pentanone	2.0821	13.05721	14.51111	1.483263E-02			30	
Toluene	1.219121	17.49537	14.12	2.004352E-02			30	

INITIAL CALIBRATION DATA (Continued)

TO-15

Laboratory: ENCO Orlando
SDG: AE02773-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103167
Instrument: OVGCMS7
Matrix: Air
Calibration Date: 03/31/21 00:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2-Hexanone	1.800591	13.17624	15.45556	0.0339966			30	
1,2-Dibromoethane	1.070637	12.26556	15.30111	2.736814E-02			30	
Tetrachloroethene	0.8895147	17.62489	14.58	3.638984E-02			30	
Dibromochloromethane	0.966109	10.27603	14.98111	2.574154E-02			30	
Chlorobenzene	1.836412	18.3388	15.89111	2.059262E-02			30	
Ethylbenzene	0.9368173	24.2899	15.88556	3.455146E-02			30	
m,p-Xylenes	1.19939	26.12464	16.04667	0.0291934			30	
o-Xylene	1.200479	25.63431	16.56778	1.995209E-02			30	
Styrene	1.601819	14.16028	16.62222	2.768968E-02			30	
Bromoform	1.262552	9.874063	16.69222	2.694955E-02			30	
1,1,2,2-Tetrachloroethane	1.479737	20.43562	17.48111	1.881541E-02			30	
1,3-Dichlorobenzene	1.250121	25.0951	18.6	1.590774E-02			30	
1,4-Dichlorobenzene	1.146538	25.80583	18.70778	0.0187985			30	
1,2-Dichlorobenzene	1.145963	30.43774	19.25667	2.285956E-02	0.9967171		0.99	
1,2,4-Trichlorobenzene	0.2367466	31.59251	21.17857	1.530979E-02	0.994		0.99	
4-Bromofluorobenzene	0.4952995	7.663395	17.3	1.289701E-02			30	

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AE02773-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2103167 **Laboratory ID:** AA65685-SCV1

Sequence: AA65685 **Standard ID:** A1C0677

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
Chlorobenzene	10.0	9.8	-1.5	30.00
2-Hexanone	10.0	9.7	-2.6	30.00
Carbon tetrachloride	10.0	8.3	-17.1	30.00
1,3-Dichlorobenzene	10.0	10	0.4	30.00
Methyl-tert-butyl ether	10.0	8.4	-16.5	30.00
trans-1,2-Dichloroethene	10.0	8.4	-15.9	30.00
cis-1,2-Dichloroethene	10.0	10	0.2	30.00
Tetrachloroethene	10.0	9.7	-2.7	30.00
Dibromochloromethane	10.0	9.9	-1.1	30.00
Ethylbenzene	10.0	9.3	-7.4	30.00
Cyclohexane	10.0	9.5	-4.9	30.00
Benzene	10.0	9.9	-1.5	30.00
Toluene	10.0	9.5	-4.9	30.00
m,p-Xylenes	20.0	19	-7.4	30.00
4-Methyl-2-pentanone	10.0	9.3	-6.7	30.00
1,2-Dichloroethane	10.0	9.8	-1.9	30.00
1,2-Dibromoethane	10.0	11	7.6	30.00
1,4-Dichlorobenzene	10.0	10	2.0	30.00
trans-1,3-Dichloropropene	10.0	14	39.5 *	30.00
cis-1,3-Dichloropropene	10.0	11	7.6	30.00
Styrene	10.0	11	5.9	30.00
1,2,4-Trichlorobenzene	10.0	8.5	-15.2	30.00
Bromodichloromethane	10.0	9.7	-2.9	30.00
o-Xylene	10.0	9.1	-9.0	30.00
1,1,2,2-Tetrachloroethane	10.0	11	6.5	30.00
Trichloroethene	10.0	9.9	-0.7	30.00
1,1,2-Trichloroethane	10.0	10	1.8	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

TO-15

Laboratory: ENCO Orlando **SDG:** AE02773-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2103167 **Laboratory ID:** AA65685-SCV1

Sequence: AA65685 **Standard ID:** A1C0677

ANALYTE	EXPECTED (ppbv)	FOUND (ppbv)	% DRIFT	QC LIMIT
2-Butanone	10.0	9.1	-9.2	30.00
1,2-Dichloropropane	10.0	10	0.04	30.00
Freon 113	10.0	8.4	-16.2	30.00
Dichlorodifluoromethane	10.0	9.8	-2.2	30.00
Trichlorofluoromethane	10.0	9.9	-0.7	30.00
Acetone	10.0	9.0	-10.2	30.00
1,1-Dichloroethane	10.0	9.9	-0.6	30.00
Chloroform	10.0	9.7	-2.5	30.00
Bromoform	10.0	10	2.0	30.00
Carbon disulfide	10.0	7.6	-23.6	30.00
Methylene chloride	10.0	8.5	-14.6	30.00
Vinyl chloride	10.0	9.8	-2.3	30.00
Chloroethane	10.0	9.3	-7.2	30.00
Chloromethane	10.0	9.0	-10.0	30.00
Bromomethane	10.0	9.5	-5.4	30.00
1,1,1-Trichloroethane	10.0	9.6	-3.9	30.00
1,2-Dichlorobenzene	10.0	10	4.0	30.00
1,1-Dichloroethene	10.0	9.1	-8.8	30.00

* Values outside of QC limits

TETRA TECH ISG
TtEGS, Information Systems Group

Completion Ticket

On 5/14/2021 at 2:01 PM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AE02773A1.txt, TE015AE02773A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2021514_10407814_ledd_ENCO

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: May 17, 2021

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Wednesday, August 4, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN SWMU 090
ENCO Workorder(s): AE06075

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, July 27, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-VMP1-FIELD-20210726 **Lab ID: AE06075-01** **Sampled: 07/26/21 15:15** **Received: 07/27/21 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	08/25/21	08/02/21 10:30	08/02/21 17:50

Client ID: HMFN-VMP2-PILOT-20210726 **Lab ID: AE06075-02** **Sampled: 07/26/21 15:20** **Received: 07/27/21 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
TO-15	NO PREP 2	08/25/21	08/02/21 10:30	08/02/21 18:35

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMFN-VMP1-FIELD-20210726 **Lab ID:** AE06075-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	13		1.2	8.8	ug/m³ Air	TO-15	
Chloroform	13	I	2.7	18	ug/m³ Air	TO-15	
Chloromethane	1.6	I	1.5	7.6	ug/m³ Air	TO-15	
Freon 113	3.8	I	3.6	28	ug/m³ Air	TO-15	
Methylene chloride	43		1.0	13	ug/m³ Air	TO-15	

Client ID: HMFN-VMP2-PILOT-20210726 **Lab ID:** AE06075-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Acetone	11		1.2	8.3	ug/m³ Air	TO-15	
Chloromethane	1.7	I	1.4	7.2	ug/m³ Air	TO-15	
Methylene chloride	5.8	I	0.97	12	ug/m³ Air	TO-15	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-VMP1-FIELD-20210726 **Lab Sample ID:** AE06075-01 **Received:** 07/27/21 15:00

Matrix: Air **Sampled:** 07/26/21 15:15 **Work Order:** AE06075

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Dan Forester **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.7	U	ug/m³ Air	1.48	2.7	20	1H01002	TO-15	08/02/21 17:50	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.7	U	ug/m³ Air	1.48	3.7	25	1H01002	TO-15	08/02/21 17:50	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.8	U	ug/m³ Air	1.48	2.8	20	1H01002	TO-15	08/02/21 17:50	rgg	
1,1-Dichloroethane [75-34-3]^	2.2	U	ug/m³ Air	1.48	2.2	15	1H01002	TO-15	08/02/21 17:50	rgg	
1,1-Dichloroethene [75-35-4]^	2.2	U	ug/m³ Air	1.48	2.2	15	1H01002	TO-15	08/02/21 17:50	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	4.3	U	ug/m³ Air	1.48	4.3	27	1H01002	TO-15	08/02/21 17:50	rgg	QB-02
1,2-Dibromoethane [106-93-4]^	4.1	U	ug/m³ Air	1.48	4.1	28	1H01002	TO-15	08/02/21 17:50	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.4	U	ug/m³ Air	1.48	2.4	22	1H01002	TO-15	08/02/21 17:50	rgg	
1,2-Dichloroethane [107-06-2]^	2.2	U	ug/m³ Air	1.48	2.2	15	1H01002	TO-15	08/02/21 17:50	rgg	
1,2-Dichloropropane [78-87-5]^	2.7	U	ug/m³ Air	1.48	2.7	17	1H01002	TO-15	08/02/21 17:50	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.5	U	ug/m³ Air	1.48	2.5	22	1H01002	TO-15	08/02/21 17:50	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.8	U	ug/m³ Air	1.48	2.8	22	1H01002	TO-15	08/02/21 17:50	rgg	
2-Butanone [78-93-3]^	1.4	U	ug/m³ Air	1.48	1.4	11	1H01002	TO-15	08/02/21 17:50	rgg	
2-Hexanone [591-78-6]^	2.0	U	ug/m³ Air	1.48	2.0	15	1H01002	TO-15	08/02/21 17:50	rgg	
4-Methyl-2-pentanone [108-10-1]^	2.1	U	ug/m³ Air	1.48	2.1	15	1H01002	TO-15	08/02/21 17:50	rgg	
Acetone [67-64-1]^	**13**		ug/m³ Air	1.48	1.2	8.8	1H01002	TO-15	08/02/21 17:50	rgg	
Benzene [71-43-2]^	1.7	U	ug/m³ Air	1.48	1.7	12	1H01002	TO-15	08/02/21 17:50	rgg	
Bromodichloromethane [75-27-4]^	3.4	U	ug/m³ Air	1.48	3.4	25	1H01002	TO-15	08/02/21 17:50	rgg	
Bromoform [75-25-2]^	5.8	U	ug/m³ Air	1.48	5.8	38	1H01002	TO-15	08/02/21 17:50	rgg	
Bromomethane [74-83-9]^	1.9	U	ug/m³ Air	1.48	1.9	14	1H01002	TO-15	08/02/21 17:50	rgg	
Carbon disulfide [75-15-0]^	1.9	U	ug/m³ Air	1.48	1.9	12	1H01002	TO-15	08/02/21 17:50	rgg	
Carbon tetrachloride [56-23-5]^	2.5	U	ug/m³ Air	1.48	2.5	23	1H01002	TO-15	08/02/21 17:50	rgg	
Chlorobenzene [108-90-7]^	2.2	U	ug/m³ Air	1.48	2.2	17	1H01002	TO-15	08/02/21 17:50	rgg	
Chloroethane [75-00-3]^	1.2	U	ug/m³ Air	1.48	1.2	9.8	1H01002	TO-15	08/02/21 17:50	rgg	
Chloroform [67-66-3]^	**13**	I	ug/m³ Air	1.48	2.7	18	1H01002	TO-15	08/02/21 17:50	rgg	
Chloromethane [74-87-3]^	**1.6**	I	ug/m³ Air	1.48	1.5	7.6	1H01002	TO-15	08/02/21 17:50	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.2	U	ug/m³ Air	1.48	2.2	15	1H01002	TO-15	08/02/21 17:50	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.6	U	ug/m³ Air	1.48	2.6	17	1H01002	TO-15	08/02/21 17:50	rgg	
Cyclohexane [110-82-7]^	1.8	U	ug/m³ Air	1.48	1.8	13	1H01002	TO-15	08/02/21 17:50	rgg	
Dibromochloromethane [124-48-1]^	4.2	U	ug/m³ Air	1.48	4.2	32	1H01002	TO-15	08/02/21 17:50	rgg	
Dichlorodifluoromethane [75-71-8]^	4.0	U	ug/m³ Air	1.48	4.0	18	1H01002	TO-15	08/02/21 17:50	rgg	
Ethylbenzene [100-41-4]^	1.9	U	ug/m³ Air	1.48	1.9	16	1H01002	TO-15	08/02/21 17:50	rgg	
Freon 113 [76-13-1]^	**3.8**	I	ug/m³ Air	1.48	3.6	28	1H01002	TO-15	08/02/21 17:50	rgg	
Methylene chloride [75-09-2]^	**43**		ug/m³ Air	1.48	1.0	13	1H01002	TO-15	08/02/21 17:50	rgg	
Methyl-tert-butyl ether [1634-04-4]^	2.0	U	ug/m³ Air	1.48	2.0	13	1H01002	TO-15	08/02/21 17:50	rgg	
Styrene [100-42-5]^	2.3	U	ug/m³ Air	1.48	2.3	16	1H01002	TO-15	08/02/21 17:50	rgg	
Tetrachloroethene [127-18-4]^	3.1	U	ug/m³ Air	1.48	3.1	25	1H01002	TO-15	08/02/21 17:50	rgg	
Toluene [108-88-3]^	2.1	U	ug/m³ Air	1.48	2.1	14	1H01002	TO-15	08/02/21 17:50	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.9	U	ug/m³ Air	1.48	1.9	15	1H01002	TO-15	08/02/21 17:50	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.3	U	ug/m³ Air	1.48	2.3	17	1H01002	TO-15	08/02/21 17:50	rgg	
Trichloroethene [79-01-6]^	2.8	U	ug/m³ Air	1.48	2.8	20	1H01002	TO-15	08/02/21 17:50	rgg	
Trichlorofluoromethane [75-69-4]^	2.8	U	ug/m³ Air	1.48	2.8	21	1H01002	TO-15	08/02/21 17:50	rgg	
Vinyl chloride [75-01-4]^	2.1	U	ug/m³ Air	1.48	2.1	9.5	1H01002	TO-15	08/02/21 17:50	rgg	
Xylenes (Total) [1330-20-7]^	4.2	U	ug/m³ Air	1.48	4.2	16	1H01002	TO-15	08/02/21 17:50	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*30*	*1*	*31.0*	*96 %*	*70-130*	*1H01002*	*TO-15*	*08/02/21 17:50*	*rgg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-VMP2-PILOT-20210726 **Lab Sample ID:** AE06075-02 **Received:** 07/27/21 15:00

Matrix: Air **Sampled:** 07/26/21 15:20 **Work Order:** AE06075

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Dan Forester **% Solids:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.6	U	ug/m³ Air	1.4	2.6	19	1H01002	TO-15	08/02/21 18:35	rgg	
1,1,2,2-Tetrachloroethane [79-34-5]^	3.5	U	ug/m³ Air	1.4	3.5	24	1H01002	TO-15	08/02/21 18:35	rgg	
1,1,2-Trichloroethane [79-00-5]^	2.7	U	ug/m³ Air	1.4	2.7	19	1H01002	TO-15	08/02/21 18:35	rgg	
1,1-Dichloroethane [75-34-3]^	2.0	U	ug/m³ Air	1.4	2.0	14	1H01002	TO-15	08/02/21 18:35	rgg	
1,1-Dichloroethene [75-35-4]^	2.1	U	ug/m³ Air	1.4	2.1	14	1H01002	TO-15	08/02/21 18:35	rgg	
1,2,4-Trichlorobenzene [120-82-1]^	4.1	U	ug/m³ Air	1.4	4.1	26	1H01002	TO-15	08/02/21 18:35	rgg	QB-02
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/m³ Air	1.4	3.9	27	1H01002	TO-15	08/02/21 18:35	rgg	
1,2-Dichlorobenzene [95-50-1]^	2.3	U	ug/m³ Air	1.4	2.3	21	1H01002	TO-15	08/02/21 18:35	rgg	
1,2-Dichloroethane [107-06-2]^	2.1	U	ug/m³ Air	1.4	2.1	14	1H01002	TO-15	08/02/21 18:35	rgg	
1,2-Dichloropropane [78-87-5]^	2.6	U	ug/m³ Air	1.4	2.6	16	1H01002	TO-15	08/02/21 18:35	rgg	
1,3-Dichlorobenzene [541-73-1]^	2.4	U	ug/m³ Air	1.4	2.4	21	1H01002	TO-15	08/02/21 18:35	rgg	
1,4-Dichlorobenzene [106-46-7]^	2.6	U	ug/m³ Air	1.4	2.6	21	1H01002	TO-15	08/02/21 18:35	rgg	
2-Butanone [78-93-3]^	1.3	U	ug/m³ Air	1.4	1.3	10	1H01002	TO-15	08/02/21 18:35	rgg	
2-Hexanone [591-78-6]^	1.9	U	ug/m³ Air	1.4	1.9	14	1H01002	TO-15	08/02/21 18:35	rgg	
4-Methyl-2-pentanone [108-10-1]^	1.9	U	ug/m³ Air	1.4	1.9	14	1H01002	TO-15	08/02/21 18:35	rgg	
Acetone [67-64-1]^	**11**		ug/m³ Air	1.4	1.2	8.3	1H01002	TO-15	08/02/21 18:35	rgg	
Benzene [71-43-2]^	1.6	U	ug/m³ Air	1.4	1.6	11	1H01002	TO-15	08/02/21 18:35	rgg	
Bromodichloromethane [75-27-4]^	3.2	U	ug/m³ Air	1.4	3.2	23	1H01002	TO-15	08/02/21 18:35	rgg	
Bromoform [75-25-2]^	5.5	U	ug/m³ Air	1.4	5.5	36	1H01002	TO-15	08/02/21 18:35	rgg	
Bromomethane [74-83-9]^	1.8	U	ug/m³ Air	1.4	1.8	14	1H01002	TO-15	08/02/21 18:35	rgg	
Carbon disulfide [75-15-0]^	1.8	U	ug/m³ Air	1.4	1.8	11	1H01002	TO-15	08/02/21 18:35	rgg	
Carbon tetrachloride [56-23-5]^	2.4	U	ug/m³ Air	1.4	2.4	22	1H01002	TO-15	08/02/21 18:35	rgg	
Chlorobenzene [108-90-7]^	2.1	U	ug/m³ Air	1.4	2.1	16	1H01002	TO-15	08/02/21 18:35	rgg	
Chloroethane [75-00-3]^	1.2	U	ug/m³ Air	1.4	1.2	9.2	1H01002	TO-15	08/02/21 18:35	rgg	
Chloroform [67-66-3]^	2.6	U	ug/m³ Air	1.4	2.6	17	1H01002	TO-15	08/02/21 18:35	rgg	
Chloromethane [74-87-3]^	**1.7**	I	ug/m³ Air	1.4	1.4	7.2	1H01002	TO-15	08/02/21 18:35	rgg	
cis-1,2-Dichloroethene [156-59-2]^	2.1	U	ug/m³ Air	1.4	2.1	14	1H01002	TO-15	08/02/21 18:35	rgg	
cis-1,3-Dichloropropene [10061-01-5]^	2.4	U	ug/m³ Air	1.4	2.4	16	1H01002	TO-15	08/02/21 18:35	rgg	
Cyclohexane [110-82-7]^	1.7	U	ug/m³ Air	1.4	1.7	12	1H01002	TO-15	08/02/21 18:35	rgg	
Dibromochloromethane [124-48-1]^	3.9	U	ug/m³ Air	1.4	3.9	30	1H01002	TO-15	08/02/21 18:35	rgg	
Dichlorodifluoromethane [75-71-8]^	3.8	U	ug/m³ Air	1.4	3.8	17	1H01002	TO-15	08/02/21 18:35	rgg	
Ethylbenzene [100-41-4]^	1.8	U	ug/m³ Air	1.4	1.8	15	1H01002	TO-15	08/02/21 18:35	rgg	
Freon 113 [76-13-1]^	3.4	U	ug/m³ Air	1.4	3.4	27	1H01002	TO-15	08/02/21 18:35	rgg	
Methylene chloride [75-09-2]^	**5.8**	I	ug/m³ Air	1.4	0.97	12	1H01002	TO-15	08/02/21 18:35	rgg	
Methyl-tert-butyl ether [1634-04-4]^	1.9	U	ug/m³ Air	1.4	1.9	13	1H01002	TO-15	08/02/21 18:35	rgg	
Styrene [100-42-5]^	2.1	U	ug/m³ Air	1.4	2.1	15	1H01002	TO-15	08/02/21 18:35	rgg	
Tetrachloroethene [127-18-4]^	2.9	U	ug/m³ Air	1.4	2.9	24	1H01002	TO-15	08/02/21 18:35	rgg	
Toluene [108-88-3]^	2.0	U	ug/m³ Air	1.4	2.0	13	1H01002	TO-15	08/02/21 18:35	rgg	
trans-1,2-Dichloroethene [156-60-5]^	1.8	U	ug/m³ Air	1.4	1.8	14	1H01002	TO-15	08/02/21 18:35	rgg	
trans-1,3-Dichloropropene [10061-02-6]^	2.2	U	ug/m³ Air	1.4	2.2	16	1H01002	TO-15	08/02/21 18:35	rgg	
Trichloroethene [79-01-6]^	2.6	U	ug/m³ Air	1.4	2.6	19	1H01002	TO-15	08/02/21 18:35	rgg	
Trichlorofluoromethane [75-69-4]^	2.7	U	ug/m³ Air	1.4	2.7	20	1H01002	TO-15	08/02/21 18:35	rgg	
Vinyl chloride [75-01-4]^	2.0	U	ug/m³ Air	1.4	2.0	8.9	1H01002	TO-15	08/02/21 18:35	rgg	
Xylenes (Total) [1330-20-7]^	4.0	U	ug/m³ Air	1.4	4.0	15	1H01002	TO-15	08/02/21 18:35	rgg	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*30*	*1*	*31.0*	*96 %*	*70-130*	*1H01002*	*TO-15*	*08/02/21 18:35*	*rgg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H01002 - NO PREP 2

Blank (1H01002-BLK1) Prepared: 08/01/2021 19:01 Analyzed: 08/02/2021 00:32

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1,2,2-Tetrachloroethane	2.5	U	17	ug/m³ Air							
1,1,2-Trichloroethane	1.9	U	14	ug/m³ Air							
1,1-Dichloroethane	1.5	U	10	ug/m³ Air							
1,1-Dichloroethene	1.5	U	9.9	ug/m³ Air							
1,2,4-Trichlorobenzene	**3.3**	**I**	19	ug/m³ Air							QB-02
1,2-Dibromoethane	2.8	U	19	ug/m³ Air							
1,2-Dichlorobenzene	1.6	U	15	ug/m³ Air							
1,2-Dichloroethane	1.5	U	10	ug/m³ Air							
1,2-Dichloropropane	1.8	U	12	ug/m³ Air							
1,3-Dichlorobenzene	1.7	U	15	ug/m³ Air							
1,4-Dichlorobenzene	1.9	U	15	ug/m³ Air							
2-Butanone	0.94	U	7.4	ug/m³ Air							
2-Hexanone	1.4	U	10	ug/m³ Air							
4-Methyl-2-pentanone	1.4	U	10	ug/m³ Air							
Acetone	0.83	U	5.9	ug/m³ Air							
Benzene	1.2	U	8.0	ug/m³ Air							
Bromodichloromethane	2.3	U	17	ug/m³ Air							
Bromoform	3.9	U	26	ug/m³ Air							
Bromomethane	1.3	U	9.7	ug/m³ Air							
Carbon disulfide	1.3	U	7.8	ug/m³ Air							
Carbon tetrachloride	1.7	U	16	ug/m³ Air							
Chlorobenzene	1.5	U	12	ug/m³ Air							
Chloroethane	0.84	U	6.6	ug/m³ Air							
Chloroform	1.9	U	12	ug/m³ Air							
Chloromethane	0.99	U	5.2	ug/m³ Air							
cis-1,2-Dichloroethene	1.5	U	9.9	ug/m³ Air							
cis-1,3-Dichloropropene	1.7	U	11	ug/m³ Air							
Cyclohexane	1.2	U	8.6	ug/m³ Air							
Dibromochloromethane	2.8	U	21	ug/m³ Air							
Dichlorodifluoromethane	2.7	U	12	ug/m³ Air							
Ethylbenzene	1.3	U	11	ug/m³ Air							
Freon 113	2.5	U	19	ug/m³ Air							
Methylene chloride	0.69	U	8.7	ug/m³ Air							
Methyl-tert-butyl ether	1.3	U	9.0	ug/m³ Air							
Styrene	1.5	U	11	ug/m³ Air							
Tetrachloroethene	2.1	U	17	ug/m³ Air							
Toluene	1.4	U	9.4	ug/m³ Air							
trans-1,2-Dichloroethene	1.3	U	9.9	ug/m³ Air							
trans-1,3-Dichloropropene	1.5	U	11	ug/m³ Air							
Trichloroethene	1.9	U	13	ug/m³ Air							
Trichlorofluoromethane	1.9	U	14	ug/m³ Air							
Vinyl chloride	1.4	U	6.4	ug/m³ Air							
Xylenes (Total)	2.9	U	11	ug/m³ Air							
4-Bromofluorobenzene	*29*			*ppbv*	*31.0*		*95*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H01002 - NO PREP 2 - Continued

LCS (1H01002-BS1) Prepared: 08/01/2021 19:01 Analyzed: 08/01/2021 22:29

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	54		14	ug/m³ Air	54.6		99	70-130			
1,1,2,2-Tetrachloroethane	71		17	ug/m³ Air	68.7		103	52-163			
1,1,2-Trichloroethane	55		14	ug/m³ Air	54.6		101	70-134			
1,1-Dichloroethane	41		10	ug/m³ Air	40.5		101	70-130			
1,1-Dichloroethene	42		9.9	ug/m³ Air	39.7		105	67-142			
1,2,4-Trichlorobenzene	77		19	ug/m³ Air	74.2		103	22-180			
1,2-Dibromoethane	78		19	ug/m³ Air	76.8		102	70-141			
1,2-Dichlorobenzene	63		15	ug/m³ Air	60.1		105	37-180			
1,2-Dichloroethane	39		10	ug/m³ Air	40.5		97	70-130			
1,2-Dichloropropane	47		12	ug/m³ Air	46.2		101	70-130			
1,3-Dichlorobenzene	63		15	ug/m³ Air	60.1		105	47-178			
1,4-Dichlorobenzene	64		15	ug/m³ Air	60.1		107	45-180			
2-Butanone	30		7.4	ug/m³ Air	29.5		100	70-130			
2-Hexanone	49		10	ug/m³ Air	41.0		119	68-140			
4-Methyl-2-pentanone	45		10	ug/m³ Air	41.0		111	70-135			
Acetone	23		5.9	ug/m³ Air	23.8		95	65-130			
Benzene	32		8.0	ug/m³ Air	32.0		101	70-133			
Bromodichloromethane	72		17	ug/m³ Air	67.0		107	70-130			
Bromoform	130		26	ug/m³ Air	103		125	62-149			
Bromomethane	32		9.7	ug/m³ Air	38.8		83	69-130			
Carbon disulfide	30		7.8	ug/m³ Air	31.1		96	66-137			
Carbon tetrachloride	82		16	ug/m³ Air	62.9		131	22-166			
Chlorobenzene	44		12	ug/m³ Air	46.0		96	70-134			
Chloroethane	22		6.6	ug/m³ Air	26.4		83	69-131			
Chloroform	50		12	ug/m³ Air	48.8		101	70-130			
Chloromethane	22		5.2	ug/m³ Air	20.7		105	55-142			
cis-1,2-Dichloroethene	41		9.9	ug/m³ Air	39.6		103	70-130			
cis-1,3-Dichloropropene	48		11	ug/m³ Air	45.4		105	70-137			
Cyclohexane	35		8.6	ug/m³ Air	34.4		101	70-130			
Dibromochloromethane	100		21	ug/m³ Air	85.2		117	70-130			
Dichlorodifluoromethane	53		12	ug/m³ Air	49.5		108	61-137			
Ethylbenzene	41		11	ug/m³ Air	43.4		94	70-137			
Freon 113	81		19	ug/m³ Air	76.6		105	67-140			
m,p-Xylenes	81		22	ug/m³ Air	86.8		93	69-142			
Methylene chloride	33		8.7	ug/m³ Air	34.7		95	59-136			
Methyl-tert-butyl ether	36		9.0	ug/m³ Air	36.1		100	67-130			
o-Xylene	42		11	ug/m³ Air	43.4		96	70-140			
Styrene	43		11	ug/m³ Air	42.6		101	56-150			
Tetrachloroethene	65		17	ug/m³ Air	67.8		96	70-141			
Toluene	36		9.4	ug/m³ Air	37.7		97	70-138			
trans-1,2-Dichloroethene	39		9.9	ug/m³ Air	39.6		98	70-130			
trans-1,3-Dichloropropene	43		11	ug/m³ Air	45.4		95	59-166			
Trichloroethene	54		13	ug/m³ Air	53.7		100	70-130			
Trichlorofluoromethane	48		14	ug/m³ Air	56.2		86	46-161			
Vinyl chloride	28		6.4	ug/m³ Air	25.6		109	53-148			
4-Bromofluorobenzene	*32*			*ppbv*	*31.0*		*102*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H01002 - NO PREP 2 - Continued

LCS Dup (1H01002-BSD1) Prepared: 08/01/2021 19:01 Analyzed: 08/01/2021 23:08

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	53		14	ug/m³ Air	54.6		98	70-130	1	25	
1,1,2,2-Tetrachloroethane	72		17	ug/m³ Air	68.7		105	52-163	1	25	
1,1,2-Trichloroethane	55		14	ug/m³ Air	54.6		100	70-134	1	25	
1,1-Dichloroethane	40		10	ug/m³ Air	40.5		100	70-130	2	25	
1,1-Dichloroethene	42		9.9	ug/m³ Air	39.7		105	67-142	0.6	25	
1,2,4-Trichlorobenzene	76		19	ug/m³ Air	74.2		102	22-180	0.9	25	
1,2-Dibromoethane	77		19	ug/m³ Air	76.8		101	70-141	1	25	
1,2-Dichlorobenzene	64		15	ug/m³ Air	60.1		106	37-180	1	25	
1,2-Dichloroethane	39		10	ug/m³ Air	40.5		97	70-130	0.2	25	
1,2-Dichloropropane	46		12	ug/m³ Air	46.2		99	70-130	2	25	
1,3-Dichlorobenzene	64		15	ug/m³ Air	60.1		106	47-178	1	25	
1,4-Dichlorobenzene	65		15	ug/m³ Air	60.1		109	45-180	2	25	
2-Butanone	29		7.4	ug/m³ Air	29.5		99	70-130	1	25	
2-Hexanone	48		10	ug/m³ Air	41.0		117	68-140	2	25	
4-Methyl-2-pentanone	45		10	ug/m³ Air	41.0		110	70-135	0.8	25	
Acetone	22		5.9	ug/m³ Air	23.8		94	65-130	1	25	
Benzene	32		8.0	ug/m³ Air	32.0		99	70-133	2	25	
Bromodichloromethane	71		17	ug/m³ Air	67.0		106	70-130	1	25	
Bromoform	130		26	ug/m³ Air	103		127	62-149	1	25	
Bromomethane	33		9.7	ug/m³ Air	38.8		84	69-130	2	25	
Carbon disulfide	30		7.8	ug/m³ Air	31.1		95	66-137	0.5	25	
Carbon tetrachloride	81		16	ug/m³ Air	62.9		128	22-166	2	25	
Chlorobenzene	44		12	ug/m³ Air	46.0		96	70-134	0.2	25	
Chloroethane	23		6.6	ug/m³ Air	26.4		85	69-131	3	25	
Chloroform	48		12	ug/m³ Air	48.8		99	70-130	2	25	
Chloromethane	21		5.2	ug/m³ Air	20.7		102	55-142	3	25	
cis-1,2-Dichloroethene	40		9.9	ug/m³ Air	39.6		101	70-130	2	25	
cis-1,3-Dichloropropene	48		11	ug/m³ Air	45.4		105	70-137	0.3	25	
Cyclohexane	34		8.6	ug/m³ Air	34.4		99	70-130	2	25	
Dibromochloromethane	99		21	ug/m³ Air	85.2		116	70-130	0.5	25	
Dichlorodifluoromethane	52		12	ug/m³ Air	49.5		105	61-137	2	25	
Ethylbenzene	41		11	ug/m³ Air	43.4		94	70-137	0.2	25	
Freon 113	80		19	ug/m³ Air	76.6		104	67-140	1	25	
m,p-Xylenes	81		22	ug/m³ Air	86.8		94	69-142	0.4	25	
Methylene chloride	33		8.7	ug/m³ Air	34.7		94	59-136	1	25	
Methyl-tert-butyl ether	36		9.0	ug/m³ Air	36.1		100	67-130	0.2	25	
o-Xylene	42		11	ug/m³ Air	43.4		98	70-140	1	25	
Styrene	44		11	ug/m³ Air	42.6		103	56-150	1	25	
Tetrachloroethene	64		17	ug/m³ Air	67.8		95	70-141	0.7	25	
Toluene	36		9.4	ug/m³ Air	37.7		96	70-138	0.5	25	
trans-1,2-Dichloroethene	38		9.9	ug/m³ Air	39.6		96	70-130	3	25	
trans-1,3-Dichloropropene	43		11	ug/m³ Air	45.4		94	59-166	0.9	25	
Trichloroethene	53		13	ug/m³ Air	53.7		100	70-130	0.8	25	
Trichlorofluoromethane	49		14	ug/m³ Air	56.2		87	46-161	0.8	25	
Vinyl chloride	27		6.4	ug/m³ Air	25.6		106	53-148	3	25	
4-Bromofluorobenzene	*32*			*ppbv*	*31.0*		*105*	*70-130*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
QB-02	The method blank contains analyte at a concentration above the MDL and/or greater than one-half the MRL. The analyte was not detected in the sample.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

AE060073

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1385 | PAGE 1 OF 1

PROJECT NO: 112G089..	FACILITY: HMFN	PROJECT MANAGER CHRIS HOOK	PHONE NUMBER	LABORATORY NAME AND CONTACT: ENCO
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER DANFORESTER	PHONE NUMBER 304-780-1426	ADDRESS
		CARRIER/WAYBILL NUMBER		CITY, STATE ORLANDO, FC

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT) START TIME	BOTTOM DEPTH (FT) STOP TIME	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS TO 15						COMMENTS
									METAL	NA							
26JUL	0745 1515	HMFN-UMP1-FIELD-20210726	HMFN	0745	1515	AIR	8 HR	1	X						REG	6607	SUMA JS-078
	0750 1520	HMFN-UMP2-FIELD-20210726	HMFN	0750	1520	AIR	8 HR	1	X						REG	6501	SUMA JS-080

1. RELINQUISHED BY		DATE	TIME	1. RECEIVED BY		DATE 7/27/21	TIME 1500
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY		DATE	TIME
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY		DATE	TIME

COMMENTS: IOD 23.6°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

AE0075-01

Environmental Conservation Laboratories, Inc.
10775 Central Port Drive, Orlando, FL 32824
4810 Executive Park Court, Suite 211,Jacksonville, FL 32216
102-A Woodwinds Industrial Ct, Cary, NC 27511

www.encolabs.com

COMPENDIUM METHOD TO-14A/COMPENDIUM METHOD TO-15 CANISTER SAMPLING FIELD TEST DATA SHEET

General Sampling Information should be recorded for each SUMMA canister used to collect samples.

General Information

SITE LOCATION:	NASA KSC
SITE ADDRESS:	HMFN
SAMPLER ID:	HMFN - VMP1 - FIELD - 20210726
SAMPLING DATE:	26 JUL 21
OPERATOR:	DAN FOSTER
SHIPPING DATE:	
CANISTER SERIAL NO.:	35-078
CANISTER LEAK CHECK DATE:	Laboratory information on file.
REGULATOR SERIAL NO.:	6667

Sampling Information

	Temperature	Canister Pressure	Local Time	Regulator Flow Rate
START	80	-30 in Hg	0745	5 L/M
STOP	90	-4 in Hg	1515	

Signature/Title: _____

AC0607502

Environmental Conservation Laboratories, Inc.
10775 Central Port Drive, Orlando, FL 32824
4810 Executive Park Court, Suite 211,Jacksonville, FL 32216
102-A Woodwinds Industrial Ct, Cary, NC 27511

www.encolabs.com

COMPENDIUM METHOD TO-14A/COMPENDIUM METHOD TO-15 CANISTER SAMPLING FIELD TEST DATA SHEET

General Sampling Information should be recorded for each SUMMA canister used to collect samples.

General Information

SITE LOCATION:	NASA - KSC
SITE ADDRESS:	HMFN
SAMPLER ID:	HMFN-VMP2 - Pilot - 20210726
SAMPLING DATE:	26 JUL 21
OPERATOR:	DAN FATES TECH
SHIPPING DATE:	
CANISTER SERIAL NO.:	35-080
CANISTER LEAK CHECK DATE:	Laboratory information on file.
REGULATOR SERIAL NO.:	6501

Sampling Information

	Temperature	Canister Pressure	Local Time	Regulator Flow Rate
START	80	-30 in Hg	0750	3.4
STOP	90	-3 in Hg	1520	

Signature/Title:

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Thursday, June 18, 2020
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AD03465

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, June 5, 2020.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

PROJECT NARRATIVE

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
ENCO Project ID: AD03465

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

Analysis: EPA 8260D

This report is an amendment to the original report dated 06/17/2020 for this work order to update the client project manager and office address.

Kaitlin Dylnicki
Project Manager

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0038-020.0-20200602 **Lab ID: AD03465-01** **Sampled: 06/02/20 11:05** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/10/20 00:00	06/10/20 12:20

Client ID: HMFN-MW0038-020.0-20200602 **Lab ID: AD03465-01RE1** **Sampled: 06/02/20 11:05** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 13:56

Client ID: HMFN-MW0037-010.0-20200602 **Lab ID: AD03465-02RE1** **Sampled: 06/02/20 11:55** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 14:28

Client ID: HMFN-MW0046-015.0-20200602 **Lab ID: AD03465-03** **Sampled: 06/02/20 12:45** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/10/20 00:00	06/10/20 13:23

Client ID: HMFN-MW0046-015.0-20200602 **Lab ID: AD03465-03RE1** **Sampled: 06/02/20 12:45** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 15:00

Client ID: HMFN-MW0047-025.0-20200602 **Lab ID: AD03465-04RE1** **Sampled: 06/02/20 13:25** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 15:31

Client ID: HMFN-MW0004-010.0-20200602 **Lab ID: AD03465-05RE1** **Sampled: 06/02/20 14:30** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 16:02

Client ID: HMFN-MW0039-035.0-20200602 **Lab ID: AD03465-06RE1** **Sampled: 06/02/20 15:30** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 16:34

Client ID: HMFN-MW0040-042.5-20200602 **Lab ID: AD03465-07RE1** **Sampled: 06/02/20 16:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/11/20 00:00	06/11/20 17:06

Client ID: HMFN-MW0043-035.0-20200602 **Lab ID: AD03465-08** **Sampled: 06/02/20 16:45** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/10/20 00:00	06/10/20 16:02

Client ID: HMFN-MW0043-035.0-20200602 **Lab ID: AD03465-08RE2** **Sampled: 06/02/20 16:45** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/16/20	06/12/20 00:00	06/12/20 13:49

Client ID: HMFN-MW0044-042.5-20200603 **Lab ID: AD03465-09** **Sampled: 06/03/20 09:40** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/11/20 00:00	06/11/20 11:18

Client ID: HMFN-MW0044-042.5-20200603 **Lab ID: AD03465-09RE1** **Sampled: 06/03/20 09:40** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/12/20 00:00	06/12/20 14:20

Client ID: HMFN-MW0041-035.0-20200603 **Lab ID: AD03465-10** **Sampled: 06/03/20 10:35** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/10/20 00:00	06/10/20 11:49

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0042-042.5-20200603 **Lab ID: AD03465-11** **Sampled: 06/03/20 11:25** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/11/20 00:00	06/11/20 11:50

Client ID: HMFN-MW0042-042.5-20200603 **Lab ID: AD03465-11RE1** **Sampled: 06/03/20 11:25** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/12/20 00:00	06/12/20 13:18

Client ID: HMFN-MW0011-025.0-20200603 **Lab ID: AD03465-12** **Sampled: 06/03/20 12:25** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/11/20 00:00	06/11/20 12:22

Client ID: HMFN-MW0036-015.0-20200603 **Lab ID: AD03465-13RE1** **Sampled: 06/03/20 13:10** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/12/20 00:00	06/12/20 14:51

Client ID: HMFN-MW0009-010.0-20200603 **Lab ID: AD03465-14** **Sampled: 06/03/20 14:15** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/11/20 00:00	06/11/20 13:25

Client ID: HMFN-MW0034-015.0-20200603 **Lab ID: AD03465-15** **Sampled: 06/03/20 17:25** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/12/20 00:00	06/12/20 15:23

Client ID: HMFN-MW0034-015.0-20200603 **Lab ID: AD03465-15RE1** **Sampled: 06/03/20 17:25** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/17/20	06/15/20 00:00	06/15/20 12:28

Client ID: HMFN-MW0035-035.0-20200604 **Lab ID: AD03465-16** **Sampled: 06/04/20 09:20** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/12/20 00:00	06/12/20 15:54

Client ID: HMFN-MW0035-035.0-20200604 **Lab ID: AD03465-16RE1** **Sampled: 06/04/20 09:20** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 12:59

Client ID: HMFN-MW0008-025.0-20200604 **Lab ID: AD03465-17** **Sampled: 06/04/20 10:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/12/20 00:00	06/12/20 16:25

Client ID: HMFN-MW0029-015.0-20200604 **Lab ID: AD03465-18** **Sampled: 06/04/20 10:45** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/12/20 00:00	06/12/20 16:57

Client ID: HMFN-MW0029-015.0-20200604 **Lab ID: AD03465-18RE1** **Sampled: 06/04/20 10:45** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 13:31

Client ID: HMFN-MW0030-025.0-20200604 **Lab ID: AD03465-19RE1** **Sampled: 06/04/20 11:20** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 14:02

Client ID: HMFN-MW0031-035.0-20200604 **Lab ID: AD03465-20RE1** **Sampled: 06/04/20 11:50** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 14:33

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0032-042.5-20200604 **Lab ID: AD03465-21** **Sampled: 06/04/20 12:20** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/12/20 00:00	06/12/20 18:30

Client ID: HMFN-MW0033-047.5-20200604 **Lab ID: AD03465-22RE1** **Sampled: 06/04/20 13:05** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 15:04

Client ID: HMFN-MW0024-060.0-20200604 **Lab ID: AD03465-23RE1** **Sampled: 06/04/20 14:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 15:35

Client ID: HMFN-MW0002-035.0-20200604 **Lab ID: AD03465-24RE1** **Sampled: 06/04/20 15:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/18/20	06/15/20 00:00	06/15/20 16:06

Client ID: HMFN-MW0027-042.5-20200605 **Lab ID: AD03465-25** **Sampled: 06/05/20 09:30** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/15/20 00:00	06/15/20 16:37

Client ID: HMFN-MW0027-042.5-20200605 **Lab ID: AD03465-25RE1** **Sampled: 06/05/20 09:30** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/16/20 00:00	06/16/20 17:36

Client ID: HMFN-MW0028-047.5-20200605 **Lab ID: AD03465-26** **Sampled: 06/05/20 10:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/15/20 00:00	06/15/20 17:08

Client ID: HMFN-MW0028-047.5-20200605 **Lab ID: AD03465-26RE1** **Sampled: 06/05/20 10:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/16/20 00:00	06/16/20 18:05

Client ID: HMFN-MW0045-030.0-20200605 **Lab ID: AD03465-27** **Sampled: 06/05/20 11:00** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/15/20 00:00	06/15/20 17:38

Client ID: HMFN-DRUM209857-20200605 **Lab ID: AD03465-28** **Sampled: 06/05/20 11:15** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/15/20 00:00	06/15/20 18:09

Client ID: HMFN-DRUM209857-20200605 **Lab ID: AD03465-28RE1** **Sampled: 06/05/20 11:15** **Received: 06/05/20 14:30**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	06/19/20	06/16/20 00:00	06/16/20 16:39

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SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0038-020.0-20200602 **Lab ID:** AD03465-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	96		3.6	10	ug/L	EPA 8260D	

Client ID: HMFN-MW0038-020.0-20200602 **Lab ID:** AD03465-01RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	37		0.62	2.0	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	2.8		0.73	2.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0037-010.0-20200602 **Lab ID:** AD03465-02RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	34		3.1	10	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	150		2.6	10	ug/L	EPA 8260D	
Vinyl chloride	500		3.6	10	ug/L	EPA 8260D	

Client ID: HMFN-MW0046-015.0-20200602 **Lab ID:** AD03465-03

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	280		7.1	20	ug/L	EPA 8260D	

Client ID: HMFN-MW0046-015.0-20200602 **Lab ID:** AD03465-03RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	26		1.6	5.0	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	170		1.3	5.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0047-025.0-20200602 **Lab ID:** AD03465-04RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	17		1.2	4.0	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	9.8		1.1	4.0	ug/L	EPA 8260D	
Vinyl chloride	160		1.4	4.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0004-010.0-20200602 **Lab ID:** AD03465-05RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	840		5.3	20	ug/L	EPA 8260D	
Vinyl chloride	40		7.1	20	ug/L	EPA 8260D	

Client ID: HMFN-MW0039-035.0-20200602 **Lab ID:** AD03465-06RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	16000		110	400	ug/L	EPA 8260D	
Trichloroethene	8400		180	400	ug/L	EPA 8260D	
Vinyl chloride	1300		140	400	ug/L	EPA 8260D	

Client ID: HMFN-MW0040-042.5-20200602 **Lab ID:** AD03465-07RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	7600		53	200	ug/L	EPA 8260D	
Trichloroethene	1400		89	200	ug/L	EPA 8260D	
Vinyl chloride	2000		71	200	ug/L	EPA 8260D	

Client ID: HMFN-MW0043-035.0-20200602 **Lab ID:** AD03465-08

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	75		2.6	10	ug/L	EPA 8260D	
Trichloroethene	15		4.4	10	ug/L	EPA 8260D	

Client ID: HMFN-MW0043-035.0-20200602 **Lab ID:** AD03465-08RE2

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	14000		360	1000	ug/L	EPA 8260D	

Client ID: HMFN-MW0044-042.5-20200603 **Lab ID:** AD03465-09

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	25	I	12	40	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	930		11	40	ug/L	EPA 8260D	
Trichloroethene	1100		18	40	ug/L	EPA 8260D	

Client ID: HMFN-MW0044-042.5-20200603 **Lab ID:** AD03465-09RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	82000		730	2000	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0041-035.0-20200603 **Lab ID: AD03465-10**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	5.8		0.53	2.0	ug/L	EPA 8260D	
Trichloroethene	1.0	I	0.89	2.0	ug/L	EPA 8260D	
Vinyl chloride	15		0.71	2.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0042-042.5-20200603 **Lab ID: AD03465-11**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2800		26	100	ug/L	EPA 8260D	
Trichloroethene	2100		44	100	ug/L	EPA 8260D	
Vinyl chloride	1500		36	100	ug/L	EPA 8260D	

Client ID: HMFN-MW0011-025.0-20200603 **Lab ID: AD03465-12**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2300		26	100	ug/L	EPA 8260D	
Vinyl chloride	3400		36	100	ug/L	EPA 8260D	

Client ID: HMFN-MW0036-015.0-20200603 **Lab ID: AD03465-13RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	11		1.3	5.0	ug/L	EPA 8260D	
Vinyl chloride	230		1.8	5.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0009-010.0-20200603 **Lab ID: AD03465-14**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	6700		53	200	ug/L	EPA 8260D	
Trichloroethene	320		89	200	ug/L	EPA 8260D	
Vinyl chloride	4400		71	200	ug/L	EPA 8260D	

Client ID: HMFN-MW0034-015.0-20200603 **Lab ID: AD03465-15**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2000		53	200	ug/L	EPA 8260D	

Client ID: HMFN-MW0034-015.0-20200603 **Lab ID: AD03465-15RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	200		14	40	ug/L	EPA 8260D	

Client ID: HMFN-MW0035-035.0-20200604 **Lab ID: AD03465-16**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	4500		130	500	ug/L	EPA 8260D	
Vinyl chloride	6500		180	500	ug/L	EPA 8260D	

Client ID: HMFN-MW0035-035.0-20200604 **Lab ID: AD03465-16RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	58	I	36	100	ug/L	EPA 8260D	
Trichloroethene	200		44	100	ug/L	EPA 8260D	

Client ID: HMFN-MW0008-025.0-20200604 **Lab ID: AD03465-17**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	6300		110	400	ug/L	EPA 8260D	
Freon 113	12000		150	400	ug/L	EPA 8260D	
Trichloroethene	4100		180	400	ug/L	EPA 8260D	
Vinyl chloride	700		140	400	ug/L	EPA 8260D	

Client ID: HMFN-MW0029-015.0-20200604 **Lab ID: AD03465-18**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	13000		530	2000	ug/L	EPA 8260D	

Client ID: HMFN-MW0029-015.0-20200604 **Lab ID: AD03465-18RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	1700		73	200	ug/L	EPA 8260D	
Vinyl chloride	610		71	200	ug/L	EPA 8260D	

Client ID: HMFN-MW0030-025.0-20200604 **Lab ID: AD03465-19RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	15000		110	400	ug/L	EPA 8260D	
Freon 113	17000		150	400	ug/L	EPA 8260D	
Trichloroethene	14000		180	400	ug/L	EPA 8260D	
Vinyl chloride	3700		140	400	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0031-035.0-20200604 **Lab ID: AD03465-20RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	15000		260	1000	ug/L	EPA 8260D	
Trichloroethene	8400		440	1000	ug/L	EPA 8260D	
Vinyl chloride	41000		360	1000	ug/L	EPA 8260D	

Client ID: HMFN-MW0032-042.5-20200604 **Lab ID: AD03465-21**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	42000		1100	4000	ug/L	EPA 8260D	
Trichloroethene	120000		1800	4000	ug/L	EPA 8260D	
Vinyl chloride	1800	I	1400	4000	ug/L	EPA 8260D	

Client ID: HMFN-MW0033-047.5-20200604 **Lab ID: AD03465-22RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	38000		530	2000	ug/L	EPA 8260D	
Trichloroethene	83000		890	2000	ug/L	EPA 8260D	
Vinyl chloride	1800	I	710	2000	ug/L	EPA 8260D	

Client ID: HMFN-MW0024-060.0-20200604 **Lab ID: AD03465-23RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	3.5		0.89	2.0	ug/L	EPA 8260D	
Vinyl chloride	0.75	I	0.71	2.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0002-035.0-20200604 **Lab ID: AD03465-24RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	5000		260	1000	ug/L	EPA 8260D	
Freon 113	19000		360	1000	ug/L	EPA 8260D	
Trichloroethene	49000		440	1000	ug/L	EPA 8260D	
Vinyl chloride	380	I	360	1000	ug/L	EPA 8260D	

Client ID: HMFN-MW0027-042.5-20200605 **Lab ID: AD03465-25**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	17000		260	1000	ug/L	EPA 8260D	
Freon 113	11000		360	1000	ug/L	EPA 8260D	
Vinyl chloride	1200		360	1000	ug/L	EPA 8260D	

Client ID: HMFN-MW0027-042.5-20200605 **Lab ID: AD03465-25RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	160000		4400	10000	ug/L	EPA 8260D	

Client ID: HMFN-MW0028-047.5-20200605 **Lab ID: AD03465-26**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	11000		530	2000	ug/L	EPA 8260D	
Freon 113	81000		730	2000	ug/L	EPA 8260D	

Client ID: HMFN-MW0028-047.5-20200605 **Lab ID: AD03465-26RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	240000		4400	10000	ug/L	EPA 8260D	

Client ID: HMFN-MW0045-030.0-20200605 **Lab ID: AD03465-27**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	1500		53	200	ug/L	EPA 8260D	
Vinyl chloride	9400		71	200	ug/L	EPA 8260D	

Client ID: HMFN-DRUM209857-20200605 **Lab ID: AD03465-28**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	4500		53	200	ug/L	EPA 8260D	
Freon 113	2400		73	200	ug/L	EPA 8260D	
Vinyl chloride	1500		71	200	ug/L	EPA 8260D	

Client ID: HMFN-DRUM209857-20200605 **Lab ID: AD03465-28RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	9600		440	1000	ug/L	EPA 8260D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0038-020.0-20200602 **Lab Sample ID:** AD03465-01 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 11:05 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,1-Dichloroethane [75-34-3]^	**37**		ug/L	1	0.62	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	10	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Dibromochloromethane [124-48-1]^	0.44	U	ug/L	1	0.44	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**2.8**		ug/L	1	0.73	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.0	0F11029	EPA 8260D	06/11/20 13:56	KKW	
Vinyl chloride [75-01-4]^	**96**		ug/L	5	3.6	10	0F10034	EPA 8260D	06/10/20 12:20	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*0F10034*	*EPA 8260D*	*06/10/20 12:20*	*KKW*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 13:56*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*53-146*	*0F10034*	*EPA 8260D*	*06/10/20 12:20*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 13:56*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0F10034*	*EPA 8260D*	*06/10/20 12:20*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*105 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 13:56*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0037-010.0-20200602 **Lab Sample ID:** AD03465-02 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 11:55 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,1-Dichloroethane [75-34-3]^	**34**		ug/L	5	3.1	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	50	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**150**		ug/L	5	2.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Dibromochloromethane [124-48-1]^	2.2	U	ug/L	5	2.2	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	QV-01
Freon 113 [76-13-1]^	3.6	U	ug/L	5	3.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
trans-1,2-Dichloroethene [156-60-5]^	3.6	U	ug/L	5	3.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Trichloroethene [79-01-6]^	4.4	U	ug/L	5	4.4	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	
Vinyl chloride [75-01-4]^	**500**		ug/L	5	3.6	10	0F11029	EPA 8260D	06/11/20 14:28	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 14:28*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*107 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 14:28*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 14:28*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0046-015.0-20200602 **Lab Sample ID:** AD03465-03 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 12:45 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.0	U	ug/L	2.5	2.0	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	1.4	U	ug/L	2.5	1.4	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,1,2-Trichloroethane [79-00-5]^	1.9	U	ug/L	2.5	1.9	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,1-Dichloroethane [75-34-3]^	**26**		ug/L	2.5	1.6	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,1-Dichloroethene [75-35-4]^	2.4	U	ug/L	2.5	2.4	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	2.4	U	ug/L	2.5	2.4	25	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,2-Dibromoethane [106-93-4]^	2.0	U	ug/L	2.5	2.0	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,2-Dichlorobenzene [95-50-1]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,2-Dichloroethane [107-06-2]^	1.6	U	ug/L	2.5	1.6	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,2-Dichloropropane [78-87-5]^	2.0	U	ug/L	2.5	2.0	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,3-Dichlorobenzene [541-73-1]^	1.9	U	ug/L	2.5	1.9	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
1,4-Dichlorobenzene [106-46-7]^	1.9	U	ug/L	2.5	1.9	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Bromodichloromethane [75-27-4]^	1.3	U	ug/L	2.5	1.3	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Bromoform [75-25-2]^	1.9	U	ug/L	2.5	1.9	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Bromomethane [74-83-9]^	2.4	U	ug/L	2.5	2.4	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Carbon Tetrachloride [56-23-5]^	2.4	U	ug/L	2.5	2.4	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Chlorobenzene [108-90-7]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Chloroethane [75-00-3]^	2.4	U	ug/L	2.5	2.4	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Chloroform [67-66-3]^	2.0	U	ug/L	2.5	2.0	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Chloromethane [74-87-3]^	2.0	U	ug/L	2.5	2.0	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**170**		ug/L	2.5	1.3	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1.5	U	ug/L	2.5	1.5	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Dibromochloromethane [124-48-1]^	1.1	U	ug/L	2.5	1.1	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Dichlorodifluoromethane [75-71-8]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	QV-01
Freon 113 [76-13-1]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Tetrachloroethene [127-18-4]^	1.9	U	ug/L	2.5	1.9	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1.8	U	ug/L	2.5	1.8	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Trichloroethene [79-01-6]^	2.2	U	ug/L	2.5	2.2	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Trichlorofluoromethane [75-69-4]^	2.4	U	ug/L	2.5	2.4	5.0	0F11029	EPA 8260D	06/11/20 15:00	KKW	
Vinyl chloride [75-01-4]^	**280**		ug/L	10	7.1	20	0F10034	EPA 8260D	06/10/20 13:23	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*103 %*	*41-142*	*0F10034*	*EPA 8260D*	*06/10/20 13:23*	*KKW*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 15:00*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*0F10034*	*EPA 8260D*	*06/10/20 13:23*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 15:00*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*101 %*	*41-146*	*0F10034*	*EPA 8260D*	*06/10/20 13:23*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 15:00*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0047-025.0-20200602 **Lab Sample ID:** AD03465-04 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 13:25 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	1.6	U	ug/L	2	1.6	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	1.1	U	ug/L	2	1.1	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,1,2-Trichloroethane [79-00-5]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,1-Dichloroethane [75-34-3]^	**17**		ug/L	2	1.2	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,1-Dichloroethene [75-35-4]^	1.9	U	ug/L	2	1.9	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1.4	U	ug/L	2	1.4	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	1.9	U	ug/L	2	1.9	20	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,2-Dibromoethane [106-93-4]^	1.6	U	ug/L	2	1.6	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,2-Dichlorobenzene [95-50-1]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,2-Dichloroethane [107-06-2]^	1.3	U	ug/L	2	1.3	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,2-Dichloropropane [78-87-5]^	1.6	U	ug/L	2	1.6	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,3-Dichlorobenzene [541-73-1]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
1,4-Dichlorobenzene [106-46-7]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Bromodichloromethane [75-27-4]^	1.0	U	ug/L	2	1.0	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Bromoform [75-25-2]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Bromomethane [74-83-9]^	1.9	U	ug/L	2	1.9	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Carbon Tetrachloride [56-23-5]^	1.9	U	ug/L	2	1.9	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Chlorobenzene [108-90-7]^	1.4	U	ug/L	2	1.4	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Chloroethane [75-00-3]^	2.0	U	ug/L	2	2.0	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Chloroform [67-66-3]^	1.6	U	ug/L	2	1.6	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Chloromethane [74-87-3]^	1.6	U	ug/L	2	1.6	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**9.8**		ug/L	2	1.1	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1.2	U	ug/L	2	1.2	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Dibromochloromethane [124-48-1]^	0.88	U	ug/L	2	0.88	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Dichlorodifluoromethane [75-71-8]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	QV-01
Freon 113 [76-13-1]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Tetrachloroethene [127-18-4]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1.5	U	ug/L	2	1.5	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Trichloroethene [79-01-6]^	1.8	U	ug/L	2	1.8	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Trichlorofluoromethane [75-69-4]^	1.9	U	ug/L	2	1.9	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	
Vinyl chloride [75-01-4]^	**160**		ug/L	2	1.4	4.0	0F11029	EPA 8260D	06/11/20 15:31	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 15:31*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 15:31*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 15:31*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0004-010.0-20200602 **Lab Sample ID:** AD03465-05 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 14:30 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	100	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**840**		ug/L	10	5.3	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Dibromochloromethane [124-48-1]^	4.4	U	ug/L	10	4.4	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	QV-01
Freon 113 [76-13-1]^	7.3	U	ug/L	10	7.3	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Trichloroethene [79-01-6]^	8.9	U	ug/L	10	8.9	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	
Vinyl chloride [75-01-4]^	**40**		ug/L	10	7.1	20	0F11029	EPA 8260D	06/11/20 16:02	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*103 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 16:02*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 16:02*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 16:02*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0039-035.0-20200602 **Lab Sample ID:** AD03465-06 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 15:30 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	2000	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Bromoform [75-25-2]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Chloroform [67-66-3]^	160	U	ug/L	200	160	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**16000**		ug/L	200	110	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Dibromochloromethane [124-48-1]^	88	U	ug/L	200	88	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	QV-01
Freon 113 [76-13-1]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Trichloroethene [79-01-6]^	**8400**		ug/L	200	180	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	
Vinyl chloride [75-01-4]^	**1300**		ug/L	200	140	400	0F11029	EPA 8260D	06/11/20 16:34	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*107 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 16:34*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 16:34*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*101 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 16:34*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0040-042.5-20200602 **Lab Sample ID:** AD03465-07 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 16:00 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	1000	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**7600**		ug/L	100	53	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Dibromochloromethane [124-48-1]^	44	U	ug/L	100	44	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	QV-01
Freon 113 [76-13-1]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Trichloroethene [79-01-6]^	**1400**		ug/L	100	89	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	
Vinyl chloride [75-01-4]^	**2000**		ug/L	100	71	200	0F11029	EPA 8260D	06/11/20 17:06	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*99 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 17:06*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 17:06*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 17:06*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0043-035.0-20200602 **Lab Sample ID:** AD03465-08 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/02/20 16:45 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,1-Dichloroethane [75-34-3]^	3.1	U	ug/L	5	3.1	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	50	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**75**		ug/L	5	2.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Dibromochloromethane [124-48-1]^	2.2	U	ug/L	5	2.2	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	QV-01
Freon 113 [76-13-1]^	**14000**		ug/L	500	360	1000	0F12027	EPA 8260D	06/12/20 13:49	KKW	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
trans-1,2-Dichloroethene [156-60-5]^	3.6	U	ug/L	5	3.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Trichloroethene [79-01-6]^	**15**		ug/L	5	4.4	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	
Vinyl chloride [75-01-4]^	3.6	U	ug/L	5	3.6	10	0F10034	EPA 8260D	06/10/20 16:02	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*0F10034*	*EPA 8260D*	*06/10/20 16:02*	*KKW*	
4-Bromofluorobenzene	*50*	*1*	*50.0*	*99 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 13:49*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*0F10034*	*EPA 8260D*	*06/10/20 16:02*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 13:49*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0F10034*	*EPA 8260D*	*06/10/20 16:02*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 13:49*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0044-042.5-20200603 **Lab Sample ID:** AD03465-09 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 09:40 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	16	U	ug/L	20	16	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	11	U	ug/L	20	11	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,1,2-Trichloroethane [79-00-5]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,1-Dichloroethane [75-34-3]^	**25**	I	ug/L	20	12	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,1-Dichloroethene [75-35-4]^	19	U	ug/L	20	19	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	14	U	ug/L	20	14	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	19	U	ug/L	20	19	200	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,2-Dibromoethane [106-93-4]^	16	U	ug/L	20	16	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,2-Dichlorobenzene [95-50-1]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,2-Dichloroethane [107-06-2]^	13	U	ug/L	20	13	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,2-Dichloropropane [78-87-5]^	16	U	ug/L	20	16	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,3-Dichlorobenzene [541-73-1]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
1,4-Dichlorobenzene [106-46-7]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Bromodichloromethane [75-27-4]^	10	U	ug/L	20	10	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Bromoform [75-25-2]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Bromomethane [74-83-9]^	19	U	ug/L	20	19	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Carbon Tetrachloride [56-23-5]^	19	U	ug/L	20	19	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Chlorobenzene [108-90-7]^	14	U	ug/L	20	14	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Chloroethane [75-00-3]^	20	U	ug/L	20	20	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Chloroform [67-66-3]^	16	U	ug/L	20	16	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Chloromethane [74-87-3]^	16	U	ug/L	20	16	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**930**		ug/L	20	11	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	12	U	ug/L	20	12	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Dibromochloromethane [124-48-1]^	8.8	U	ug/L	20	8.8	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Dichlorodifluoromethane [75-71-8]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	QV-01
Freon 113 [76-13-1]^	**82000**		ug/L	1000	730	2000	0F12027	EPA 8260D	06/12/20 14:20	KKW	
Tetrachloroethene [127-18-4]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
trans-1,2-Dichloroethene [156-60-5]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	15	U	ug/L	20	15	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Trichloroethene [79-01-6]^	**1100**		ug/L	20	18	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Trichlorofluoromethane [75-69-4]^	19	U	ug/L	20	19	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	
Vinyl chloride [75-01-4]^	14	U	ug/L	20	14	40	0F11029	EPA 8260D	06/11/20 11:18	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*103 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 11:18*	*KKW*	
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 14:20*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 11:18*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 14:20*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*105 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 11:18*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 14:20*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0041-035.0-20200603 **Lab Sample ID:** AD03465-10 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 10:35 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	10	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**5.8**		ug/L	1	0.53	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Dibromochloromethane [124-48-1]^	0.44	U	ug/L	1	0.44	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Trichloroethene [79-01-6]^	**1.0**	I	ug/L	1	0.89	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	
Vinyl chloride [75-01-4]^	**15**		ug/L	1	0.71	2.0	0F10034	EPA 8260D	06/10/20 11:49	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*0F10034*	*EPA 8260D*	*06/10/20 11:49*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*53-146*	*0F10034*	*EPA 8260D*	*06/10/20 11:49*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0F10034*	*EPA 8260D*	*06/10/20 11:49*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0042-042.5-20200603 **Lab Sample ID:** AD03465-11 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 11:25 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	500	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Bromoform [75-25-2]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Chloroform [67-66-3]^	40	U	ug/L	50	40	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2800**		ug/L	50	26	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Dibromochloromethane [124-48-1]^	22	U	ug/L	50	22	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	QV-01
Freon 113 [76-13-1]^	36	U	ug/L	50	36	100	0F12027	EPA 8260D	06/12/20 13:18	KKW	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Trichloroethene [79-01-6]^	**2100**		ug/L	50	44	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	
Vinyl chloride [75-01-4]^	**1500**		ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 11:50	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*99 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 11:50*	*KKW*	
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 13:18*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 11:50*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 13:18*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 11:50*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 13:18*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0011-025.0-20200603 **Lab Sample ID:** AD03465-12 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 12:25 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	500	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Bromoform [75-25-2]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Chloroform [67-66-3]^	40	U	ug/L	50	40	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2300**		ug/L	50	26	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Dibromochloromethane [124-48-1]^	22	U	ug/L	50	22	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	QV-01
Freon 113 [76-13-1]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Trichloroethene [79-01-6]^	44	U	ug/L	50	44	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	
Vinyl chloride [75-01-4]^	**3400**		ug/L	50	36	100	0F11029	EPA 8260D	06/11/20 12:22	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 12:22*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 12:22*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 12:22*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0036-015.0-20200603 **Lab Sample ID:** AD03465-13 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 13:10 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.0	U	ug/L	2.5	2.0	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	1.4	U	ug/L	2.5	1.4	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,1,2-Trichloroethane [79-00-5]^	1.9	U	ug/L	2.5	1.9	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,1-Dichloroethane [75-34-3]^	1.6	U	ug/L	2.5	1.6	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,1-Dichloroethene [75-35-4]^	2.4	U	ug/L	2.5	2.4	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	QB-02
1,2-Dibromo-3-chloropropane [96-12-8]^	2.4	U	ug/L	2.5	2.4	25	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,2-Dibromoethane [106-93-4]^	2.0	U	ug/L	2.5	2.0	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,2-Dichlorobenzene [95-50-1]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,2-Dichloroethane [107-06-2]^	1.6	U	ug/L	2.5	1.6	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,2-Dichloropropane [78-87-5]^	2.0	U	ug/L	2.5	2.0	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,3-Dichlorobenzene [541-73-1]^	1.9	U	ug/L	2.5	1.9	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
1,4-Dichlorobenzene [106-46-7]^	1.9	U	ug/L	2.5	1.9	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Bromodichloromethane [75-27-4]^	1.3	U	ug/L	2.5	1.3	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Bromoform [75-25-2]^	1.9	U	ug/L	2.5	1.9	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Bromomethane [74-83-9]^	2.4	U	ug/L	2.5	2.4	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Carbon Tetrachloride [56-23-5]^	2.4	U	ug/L	2.5	2.4	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Chlorobenzene [108-90-7]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Chloroethane [75-00-3]^	2.4	U	ug/L	2.5	2.4	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Chloroform [67-66-3]^	2.0	U	ug/L	2.5	2.0	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Chloromethane [74-87-3]^	2.0	U	ug/L	2.5	2.0	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**11**		ug/L	2.5	1.3	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1.5	U	ug/L	2.5	1.5	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Dibromochloromethane [124-48-1]^	1.1	U	ug/L	2.5	1.1	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Dichlorodifluoromethane [75-71-8]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	QV-01
Freon 113 [76-13-1]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Tetrachloroethene [127-18-4]^	1.9	U	ug/L	2.5	1.9	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1.8	U	ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Trichloroethene [79-01-6]^	2.2	U	ug/L	2.5	2.2	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Trichlorofluoromethane [75-69-4]^	2.4	U	ug/L	2.5	2.4	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	
Vinyl chloride [75-01-4]^	**230**		ug/L	2.5	1.8	5.0	0F12027	EPA 8260D	06/12/20 14:51	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 14:51*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 14:51*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 14:51*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0009-010.0-20200603 **Lab Sample ID:** AD03465-14 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 14:15 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	1000	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**6700**		ug/L	100	53	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Dibromochloromethane [124-48-1]^	44	U	ug/L	100	44	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	QV-01
Freon 113 [76-13-1]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Trichloroethene [79-01-6]^	**320**		ug/L	100	89	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	
Vinyl chloride [75-01-4]^	**4400**		ug/L	100	71	200	0F11029	EPA 8260D	06/11/20 13:25	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*0F11029*	*EPA 8260D*	*06/11/20 13:25*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*101 %*	*53-146*	*0F11029*	*EPA 8260D*	*06/11/20 13:25*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*101 %*	*41-146*	*0F11029*	*EPA 8260D*	*06/11/20 13:25*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0034-015.0-20200603 **Lab Sample ID:** AD03465-15 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/03/20 17:25 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	16	U	ug/L	20	16	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	11	U	ug/L	20	11	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,1-Dichloroethane [75-34-3]^	12	U	ug/L	20	12	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,1-Dichloroethene [75-35-4]^	19	U	ug/L	20	19	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	14	U	ug/L	20	14	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	19	U	ug/L	20	19	200	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,2-Dibromoethane [106-93-4]^	16	U	ug/L	20	16	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,2-Dichlorobenzene [95-50-1]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,2-Dichloroethane [107-06-2]^	13	U	ug/L	20	13	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,2-Dichloropropane [78-87-5]^	16	U	ug/L	20	16	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,3-Dichlorobenzene [541-73-1]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
1,4-Dichlorobenzene [106-46-7]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Bromodichloromethane [75-27-4]^	10	U	ug/L	20	10	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Bromoform [75-25-2]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Bromomethane [74-83-9]^	19	U	ug/L	20	19	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	19	U	ug/L	20	19	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Chlorobenzene [108-90-7]^	14	U	ug/L	20	14	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Chloroethane [75-00-3]^	20	U	ug/L	20	20	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Chloroform [67-66-3]^	16	U	ug/L	20	16	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Chloromethane [74-87-3]^	16	U	ug/L	20	16	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2000**		ug/L	100	53	200	0F12027	EPA 8260D	06/12/20 15:23	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	12	U	ug/L	20	12	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Dibromochloromethane [124-48-1]^	8.8	U	ug/L	20	8.8	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Dichlorodifluoromethane [75-71-8]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	QV-01
Freon 113 [76-13-1]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Tetrachloroethene [127-18-4]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
trans-1,2-Dichloroethene [156-60-5]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	15	U	ug/L	20	15	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Trichloroethene [79-01-6]^	18	U	ug/L	20	18	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Trichlorofluoromethane [75-69-4]^	19	U	ug/L	20	19	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	
Vinyl chloride [75-01-4]^	**200**		ug/L	20	14	40	0F15030	EPA 8260D	06/15/20 12:28	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 15:23*	*KKW*	
4-Bromofluorobenzene	*49*	*1*	*50.0*	*98 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 12:28*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 15:23*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 12:28*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*101 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 15:23*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 12:28*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0035-035.0-20200604 **Lab Sample ID:** AD03465-16 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 09:20 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	500	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Bromoform [75-25-2]^	38	U	ug/L	50	38	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Chloroform [67-66-3]^	40	U	ug/L	50	40	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**4500**		ug/L	250	130	500	0F12027	EPA 8260D	06/12/20 15:54	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Dibromochloromethane [124-48-1]^	22	U	ug/L	50	22	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	QV-01
Freon 113 [76-13-1]^	36	U	ug/L	50	36	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**58**	I	ug/L	50	36	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Trichloroethene [79-01-6]^	**200**		ug/L	50	44	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	100	0F15030	EPA 8260D	06/15/20 12:59	KKW	
Vinyl chloride [75-01-4]^	**6500**		ug/L	250	180	500	0F12027	EPA 8260D	06/12/20 15:54	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 15:54*	*KKW*	
4-Bromofluorobenzene	*48*	*1*	*50.0*	*95 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 12:59*	*KKW*	
Dibromofluoromethane	*49*	*1*	*50.0*	*99 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 15:54*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 12:59*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*100 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 15:54*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 12:59*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0008-025.0-20200604 **Lab Sample ID:** AD03465-17 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 10:00 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	QB-02
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	2000	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Bromoform [75-25-2]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Chloroform [67-66-3]^	160	U	ug/L	200	160	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**6300**		ug/L	200	110	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Dibromochloromethane [124-48-1]^	88	U	ug/L	200	88	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	QV-01
Freon 113 [76-13-1]^	**12000**		ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Trichloroethene [79-01-6]^	**4100**		ug/L	200	180	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	
Vinyl chloride [75-01-4]^	**700**		ug/L	200	140	400	0F12027	EPA 8260D	06/12/20 16:25	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*98 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 16:25*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 16:25*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*101 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 16:25*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0029-015.0-20200604 **Lab Sample ID:** AD03465-18 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 10:45 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	1000	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**13000**		ug/L	1000	530	2000	0F12027	EPA 8260D	06/12/20 16:57	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Dibromochloromethane [124-48-1]^	44	U	ug/L	100	44	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	QV-01
Freon 113 [76-13-1]^	**1700**		ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Trichloroethene [79-01-6]^	89	U	ug/L	100	89	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	
Vinyl chloride [75-01-4]^	**610**		ug/L	100	71	200	0F15030	EPA 8260D	06/15/20 13:31	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 16:57*	*KKW*	
4-Bromofluorobenzene	*48*	*1*	*50.0*	*97 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 13:31*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 16:57*	*KKW*	
Dibromofluoromethane	*56*	*1*	*50.0*	*111 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 13:31*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 16:57*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*107 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 13:31*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0030-025.0-20200604 **Lab Sample ID:** AD03465-19 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 11:20 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	2000	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Bromoform [75-25-2]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Chloroform [67-66-3]^	160	U	ug/L	200	160	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**15000**		ug/L	200	110	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Dibromochloromethane [124-48-1]^	88	U	ug/L	200	88	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	QV-01
Freon 113 [76-13-1]^	**17000**		ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Trichloroethene [79-01-6]^	**14000**		ug/L	200	180	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	
Vinyl chloride [75-01-4]^	**3700**		ug/L	200	140	400	0F15030	EPA 8260D	06/15/20 14:02	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*98 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 14:02*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 14:02*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 14:02*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0031-035.0-20200604 **Lab Sample ID:** AD03465-20 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 11:50 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	270	U	ug/L	500	270	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,1-Dichloroethane [75-34-3]^	310	U	ug/L	500	310	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,1-Dichloroethene [75-35-4]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	350	U	ug/L	500	350	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	480	U	ug/L	500	480	5000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,2-Dibromoethane [106-93-4]^	390	U	ug/L	500	390	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,2-Dichlorobenzene [95-50-1]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,2-Dichloroethane [107-06-2]^	320	U	ug/L	500	320	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,2-Dichloropropane [78-87-5]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,3-Dichlorobenzene [541-73-1]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
1,4-Dichlorobenzene [106-46-7]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Bromodichloromethane [75-27-4]^	260	U	ug/L	500	260	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Bromoform [75-25-2]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Bromomethane [74-83-9]^	480	U	ug/L	500	480	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Chlorobenzene [108-90-7]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Chloroethane [75-00-3]^	490	U	ug/L	500	490	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Chloroform [67-66-3]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Chloromethane [74-87-3]^	410	U	ug/L	500	410	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**15000**		ug/L	500	260	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	300	U	ug/L	500	300	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Dibromochloromethane [124-48-1]^	220	U	ug/L	500	220	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Dichlorodifluoromethane [75-71-8]^	370	U	ug/L	500	370	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	QV-01
Freon 113 [76-13-1]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Tetrachloroethene [127-18-4]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
trans-1,2-Dichloroethene [156-60-5]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Trichloroethene [79-01-6]^	**8400**		ug/L	500	440	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Trichlorofluoromethane [75-69-4]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	
Vinyl chloride [75-01-4]^	**41000**		ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 14:33	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 14:33*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 14:33*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 14:33*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0032-042.5-20200604 **Lab Sample ID:** AD03465-21 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 12:20 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	1600	U	ug/L	2000	1600	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	1100	U	ug/L	2000	1100	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,1,2-Trichloroethane [79-00-5]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,1-Dichloroethane [75-34-3]^	1200	U	ug/L	2000	1200	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,1-Dichloroethene [75-35-4]^	1900	U	ug/L	2000	1900	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1400	U	ug/L	2000	1400	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	QB-02
1,2-Dibromo-3-chloropropane [96-12-8]^	1900	U	ug/L	2000	1900	20000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,2-Dibromoethane [106-93-4]^	1600	U	ug/L	2000	1600	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,2-Dichlorobenzene [95-50-1]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,2-Dichloroethane [107-06-2]^	1300	U	ug/L	2000	1300	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,2-Dichloropropane [78-87-5]^	1600	U	ug/L	2000	1600	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,3-Dichlorobenzene [541-73-1]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
1,4-Dichlorobenzene [106-46-7]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Bromodichloromethane [75-27-4]^	1000	U	ug/L	2000	1000	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Bromoform [75-25-2]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Bromomethane [74-83-9]^	1900	U	ug/L	2000	1900	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Carbon Tetrachloride [56-23-5]^	1900	U	ug/L	2000	1900	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Chlorobenzene [108-90-7]^	1400	U	ug/L	2000	1400	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Chloroethane [75-00-3]^	2000	U	ug/L	2000	2000	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Chloroform [67-66-3]^	1600	U	ug/L	2000	1600	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Chloromethane [74-87-3]^	1600	U	ug/L	2000	1600	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**42000**		ug/L	2000	1100	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1200	U	ug/L	2000	1200	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Dibromochloromethane [124-48-1]^	880	U	ug/L	2000	880	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Dichlorodifluoromethane [75-71-8]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	QV-01
Freon 113 [76-13-1]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Tetrachloroethene [127-18-4]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1500	U	ug/L	2000	1500	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Trichloroethene [79-01-6]^	**120000**		ug/L	2000	1800	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Trichlorofluoromethane [75-69-4]^	1900	U	ug/L	2000	1900	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	
Vinyl chloride [75-01-4]^	**1800**	I	ug/L	2000	1400	4000	0F12027	EPA 8260D	06/12/20 18:30	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*48*	*1*	*50.0*	*95 %*	*41-142*	*0F12027*	*EPA 8260D*	*06/12/20 18:30*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*53-146*	*0F12027*	*EPA 8260D*	*06/12/20 18:30*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*100 %*	*41-146*	*0F12027*	*EPA 8260D*	*06/12/20 18:30*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0033-047.5-20200604 **Lab Sample ID:** AD03465-22 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 13:05 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	800	U	ug/L	1000	800	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	540	U	ug/L	1000	540	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	760	U	ug/L	1000	760	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,1-Dichloroethane [75-34-3]^	620	U	ug/L	1000	620	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,1-Dichloroethene [75-35-4]^	940	U	ug/L	1000	940	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	700	U	ug/L	1000	700	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	960	U	ug/L	1000	960	10000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,2-Dibromoethane [106-93-4]^	780	U	ug/L	1000	780	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,2-Dichlorobenzene [95-50-1]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,2-Dichloroethane [107-06-2]^	630	U	ug/L	1000	630	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,2-Dichloropropane [78-87-5]^	800	U	ug/L	1000	800	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,3-Dichlorobenzene [541-73-1]^	770	U	ug/L	1000	770	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
1,4-Dichlorobenzene [106-46-7]^	760	U	ug/L	1000	760	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Bromodichloromethane [75-27-4]^	520	U	ug/L	1000	520	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Bromoform [75-25-2]^	750	U	ug/L	1000	750	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Bromomethane [74-83-9]^	950	U	ug/L	1000	950	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	940	U	ug/L	1000	940	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Chlorobenzene [108-90-7]^	720	U	ug/L	1000	720	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Chloroethane [75-00-3]^	980	U	ug/L	1000	980	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Chloroform [67-66-3]^	800	U	ug/L	1000	800	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Chloromethane [74-87-3]^	820	U	ug/L	1000	820	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**38000**		ug/L	1000	530	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	590	U	ug/L	1000	590	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Dibromochloromethane [124-48-1]^	440	U	ug/L	1000	440	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Dichlorodifluoromethane [75-71-8]^	740	U	ug/L	1000	740	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	QV-01
Freon 113 [76-13-1]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Tetrachloroethene [127-18-4]^	760	U	ug/L	1000	760	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
trans-1,2-Dichloroethene [156-60-5]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Trichloroethene [79-01-6]^	**83000**		ug/L	1000	890	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Trichlorofluoromethane [75-69-4]^	940	U	ug/L	1000	940	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	
Vinyl chloride [75-01-4]^	**1800**	I	ug/L	1000	710	2000	0F15030	EPA 8260D	06/15/20 15:04	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 15:04*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*107 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 15:04*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 15:04*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0024-060.0-20200604 **Lab Sample ID:** AD03465-23 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 14:00 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	10	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Dibromochloromethane [124-48-1]^	0.44	U	ug/L	1	0.44	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Trichloroethene [79-01-6]^	**3.5**		ug/L	1	0.89	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	
Vinyl chloride [75-01-4]^	**0.75**	I	ug/L	1	0.71	2.0	0F15030	EPA 8260D	06/15/20 15:35	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*95 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 15:35*	*KKW*	
Dibromofluoromethane	*49*	*1*	*50.0*	*97 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 15:35*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 15:35*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0002-035.0-20200604 **Lab Sample ID:** AD03465-24 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/04/20 15:00 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	270	U	ug/L	500	270	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,1-Dichloroethane [75-34-3]^	310	U	ug/L	500	310	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,1-Dichloroethene [75-35-4]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	350	U	ug/L	500	350	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	480	U	ug/L	500	480	5000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,2-Dibromoethane [106-93-4]^	390	U	ug/L	500	390	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,2-Dichlorobenzene [95-50-1]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,2-Dichloroethane [107-06-2]^	320	U	ug/L	500	320	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,2-Dichloropropane [78-87-5]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,3-Dichlorobenzene [541-73-1]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
1,4-Dichlorobenzene [106-46-7]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Bromodichloromethane [75-27-4]^	260	U	ug/L	500	260	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Bromoform [75-25-2]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Bromomethane [74-83-9]^	480	U	ug/L	500	480	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Chlorobenzene [108-90-7]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Chloroethane [75-00-3]^	490	U	ug/L	500	490	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Chloroform [67-66-3]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Chloromethane [74-87-3]^	410	U	ug/L	500	410	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**5000**		ug/L	500	260	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	300	U	ug/L	500	300	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Dibromochloromethane [124-48-1]^	220	U	ug/L	500	220	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Dichlorodifluoromethane [75-71-8]^	370	U	ug/L	500	370	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	QV-01
Freon 113 [76-13-1]^	**19000**		ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Tetrachloroethene [127-18-4]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
trans-1,2-Dichloroethene [156-60-5]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Trichloroethene [79-01-6]^	**49000**		ug/L	500	440	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Trichlorofluoromethane [75-69-4]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	
Vinyl chloride [75-01-4]^	**380**	I	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:06	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 16:06*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 16:06*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 16:06*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0027-042.5-20200605 **Lab Sample ID:** AD03465-25 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/05/20 09:30 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	270	U	ug/L	500	270	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,1-Dichloroethane [75-34-3]^	310	U	ug/L	500	310	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,1-Dichloroethene [75-35-4]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	350	U	ug/L	500	350	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	480	U	ug/L	500	480	5000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,2-Dibromoethane [106-93-4]^	390	U	ug/L	500	390	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,2-Dichlorobenzene [95-50-1]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,2-Dichloroethane [107-06-2]^	320	U	ug/L	500	320	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,2-Dichloropropane [78-87-5]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,3-Dichlorobenzene [541-73-1]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
1,4-Dichlorobenzene [106-46-7]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Bromodichloromethane [75-27-4]^	260	U	ug/L	500	260	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Bromoform [75-25-2]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Bromomethane [74-83-9]^	480	U	ug/L	500	480	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Chlorobenzene [108-90-7]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Chloroethane [75-00-3]^	490	U	ug/L	500	490	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Chloroform [67-66-3]^	400	U	ug/L	500	400	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Chloromethane [74-87-3]^	410	U	ug/L	500	410	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**17000**		ug/L	500	260	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	300	U	ug/L	500	300	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Dibromochloromethane [124-48-1]^	220	U	ug/L	500	220	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Dichlorodifluoromethane [75-71-8]^	370	U	ug/L	500	370	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	QV-01
Freon 113 [76-13-1]^	**11000**		ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Tetrachloroethene [127-18-4]^	380	U	ug/L	500	380	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
trans-1,2-Dichloroethene [156-60-5]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	360	U	ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Trichloroethene [79-01-6]^	**160000**		ug/L	5000	4400	10000	0F16021	EPA 8260D	06/16/20 17:36	S1R	
Trichlorofluoromethane [75-69-4]^	470	U	ug/L	500	470	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	
Vinyl chloride [75-01-4]^	**1200**		ug/L	500	360	1000	0F15030	EPA 8260D	06/15/20 16:37	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*95 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 16:37*	*KKW*	
4-Bromofluorobenzene	*44*	*1*	*50.0*	*89 %*	*41-142*	*0F16021*	*EPA 8260D*	*06/16/20 17:36*	*S1R*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 16:37*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*0F16021*	*EPA 8260D*	*06/16/20 17:36*	*S1R*	
Toluene-d8	*54*	*1*	*50.0*	*108 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 16:37*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F16021*	*EPA 8260D*	*06/16/20 17:36*	*S1R*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0028-047.5-20200605 **Lab Sample ID:** AD03465-26 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/05/20 10:00 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	800	U	ug/L	1000	800	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	540	U	ug/L	1000	540	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	760	U	ug/L	1000	760	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,1-Dichloroethane [75-34-3]^	620	U	ug/L	1000	620	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,1-Dichloroethene [75-35-4]^	940	U	ug/L	1000	940	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	700	U	ug/L	1000	700	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	960	U	ug/L	1000	960	10000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,2-Dibromoethane [106-93-4]^	780	U	ug/L	1000	780	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,2-Dichlorobenzene [95-50-1]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,2-Dichloroethane [107-06-2]^	630	U	ug/L	1000	630	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,2-Dichloropropane [78-87-5]^	800	U	ug/L	1000	800	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,3-Dichlorobenzene [541-73-1]^	770	U	ug/L	1000	770	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
1,4-Dichlorobenzene [106-46-7]^	760	U	ug/L	1000	760	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Bromodichloromethane [75-27-4]^	520	U	ug/L	1000	520	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Bromoform [75-25-2]^	750	U	ug/L	1000	750	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Bromomethane [74-83-9]^	950	U	ug/L	1000	950	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	940	U	ug/L	1000	940	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Chlorobenzene [108-90-7]^	720	U	ug/L	1000	720	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Chloroethane [75-00-3]^	980	U	ug/L	1000	980	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Chloroform [67-66-3]^	800	U	ug/L	1000	800	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Chloromethane [74-87-3]^	820	U	ug/L	1000	820	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**11000**		ug/L	1000	530	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	590	U	ug/L	1000	590	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Dibromochloromethane [124-48-1]^	440	U	ug/L	1000	440	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Dichlorodifluoromethane [75-71-8]^	740	U	ug/L	1000	740	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	QV-01
Freon 113 [76-13-1]^	**81000**		ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Tetrachloroethene [127-18-4]^	760	U	ug/L	1000	760	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
trans-1,2-Dichloroethene [156-60-5]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	730	U	ug/L	1000	730	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Trichloroethene [79-01-6]^	**240000**		ug/L	5000	4400	10000	0F16021	EPA 8260D	06/16/20 18:05	S1R	
Trichlorofluoromethane [75-69-4]^	940	U	ug/L	1000	940	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	
Vinyl chloride [75-01-4]^	710	U	ug/L	1000	710	2000	0F15030	EPA 8260D	06/15/20 17:08	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*98 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 17:08*	*KKW*	
4-Bromofluorobenzene	*45*	*1*	*50.0*	*91 %*	*41-142*	*0F16021*	*EPA 8260D*	*06/16/20 18:05*	*S1R*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 17:08*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*0F16021*	*EPA 8260D*	*06/16/20 18:05*	*S1R*	
Toluene-d8	*54*	*1*	*50.0*	*109 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 17:08*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*0F16021*	*EPA 8260D*	*06/16/20 18:05*	*S1R*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0045-030.0-20200605 **Lab Sample ID:** AD03465-27 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/05/20 11:00 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	1000	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**1500**		ug/L	100	53	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Dibromochloromethane [124-48-1]^	44	U	ug/L	100	44	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	QV-01
Freon 113 [76-13-1]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Trichloroethene [79-01-6]^	89	U	ug/L	100	89	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	
Vinyl chloride [75-01-4]^	**9400**		ug/L	100	71	200	0F15030	EPA 8260D	06/15/20 17:38	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 17:38*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 17:38*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 17:38*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-DRUM209857-20200605 **Lab Sample ID:** AD03465-28 **Received:** 06/05/20 14:30

Matrix: Water **Sampled:** 06/05/20 11:15 **Work Order:** AD03465

Project: NASA KSC HMFN **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	A-07
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	1000	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**4500**		ug/L	100	53	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Dibromochloromethane [124-48-1]^	44	U	ug/L	100	44	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	QV-01
Freon 113 [76-13-1]^	**2400**		ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Trichloroethene [79-01-6]^	**9600**		ug/L	500	440	1000	0F16021	EPA 8260D	06/16/20 16:39	S1R	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	
Vinyl chloride [75-01-4]^	**1500**		ug/L	100	71	200	0F15030	EPA 8260D	06/15/20 18:09	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*97 %*	*41-142*	*0F15030*	*EPA 8260D*	*06/15/20 18:09*	*KKW*	
4-Bromofluorobenzene	*45*	*1*	*50.0*	*90 %*	*41-142*	*0F16021*	*EPA 8260D*	*06/16/20 16:39*	*S1R*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*0F15030*	*EPA 8260D*	*06/15/20 18:09*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*0F16021*	*EPA 8260D*	*06/16/20 16:39*	*S1R*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0F15030*	*EPA 8260D*	*06/15/20 18:09*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0F16021*	*EPA 8260D*	*06/16/20 16:39*	*S1R*	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F10034 - EPA 5030B_MS

Blank (0F10034-BLK1) Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 10:46

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.0	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*103*	*41-142*			
Dibromofluoromethane	*48*	*I*		*ug/L*	*50.0*		*97*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

LCS (0F10034-BS1) Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 09:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0		104	57-148			
1,1,2,2-Tetrachloroethane	19		2.0	ug/L	20.0		95	60-139			
1,1,2-Trichloroethane	19		2.0	ug/L	20.0		93	57-141			
1,1-Dichloroethane	18		2.0	ug/L	20.0		92	57-142			
1,1-Dichloroethene	17		2.0	ug/L	20.0		84	47-139			
1,2,4-Trichlorobenzene	25		2.0	ug/L	20.0		124	52-159			
1,2-Dibromo-3-chloropropane	24		10	ug/L	20.0		118	48-150			
1,2-Dibromoethane	18		2.0	ug/L	20.0		89	57-140			
1,2-Dichlorobenzene	20		2.0	ug/L	20.0		102	63-131			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F10034 - EPA 5030B_MS - Continued

LCS (0F10034-BS1) Continued Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 09:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	21		2.0	ug/L	20.0		103	50-156			
1,2-Dichloropropane	19		2.0	ug/L	20.0		93	61-133			
1,3-Dichlorobenzene	20		2.0	ug/L	20.0		99	66-129			
1,4-Dichlorobenzene	21		2.0	ug/L	20.0		103	65-133			
Bromodichloromethane	20		2.0	ug/L	20.0		99	58-135			
Bromoform	18		2.0	ug/L	20.0		90	46-148			
Bromomethane	15		2.0	ug/L	20.0		77	10-173			
Carbon Tetrachloride	21		2.0	ug/L	20.0		105	54-156			
Chlorobenzene	20		2.0	ug/L	20.0		102	51-139			
Chloroethane	19		2.0	ug/L	20.0		94	27-180			
Chloroform	19		2.0	ug/L	20.0		96	58-139			
Chloromethane	15		2.0	ug/L	20.0		75	33-154			
cis-1,2-Dichloroethene	16		2.0	ug/L	20.0		81	56-128			
cis-1,3-Dichloropropene	18		2.0	ug/L	20.0		89	64-128			
Dibromochloromethane	18		2.0	ug/L	20.0		92	50-140			
Dichlorodifluoromethane	17		2.0	ug/L	20.0		87	10-180			
Freon 113	19		2.0	ug/L	20.0		97	47-173			
Tetrachloroethene	22		2.0	ug/L	20.0		108	60-147			
trans-1,2-Dichloroethene	22		2.0	ug/L	20.0		108	54-134			
trans-1,3-Dichloropropene	18		2.0	ug/L	20.0		92	65-149			
Trichloroethene	20		2.0	ug/L	20.0		98	62-135			
Trichlorofluoromethane	18		2.0	ug/L	20.0		92	56-155			
Vinyl chloride	19		2.0	ug/L	20.0		94	20-167			
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*101*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

Matrix Spike (0F10034-MS1) Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 19:39

Source: AD03465-10

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.0	ug/L	20.0	0.80 U	116	57-148			
1,1,2,2-Tetrachloroethane	19		2.0	ug/L	20.0	0.54 U	96	60-139			
1,1,2-Trichloroethane	21		2.0	ug/L	20.0	0.76 U	104	57-141			
1,1-Dichloroethane	21		2.0	ug/L	20.0	0.62 U	104	57-142			
1,1-Dichloroethene	19		2.0	ug/L	20.0	0.94 U	97	47-139			
1,2,4-Trichlorobenzene	19		2.0	ug/L	20.0	0.70 U	93	52-159			
1,2-Dibromo-3-chloropropane	15		10	ug/L	20.0	0.96 U	76	48-150			
1,2-Dibromoethane	19		2.0	ug/L	20.0	0.78 U	93	57-140			
1,2-Dichlorobenzene	22		2.0	ug/L	20.0	0.73 U	110	63-131			
1,2-Dichloroethane	21		2.0	ug/L	20.0	0.63 U	107	50-156			
1,2-Dichloropropane	19		2.0	ug/L	20.0	0.80 U	97	61-133			
1,3-Dichlorobenzene	21		2.0	ug/L	20.0	0.77 U	106	66-129			
1,4-Dichlorobenzene	22		2.0	ug/L	20.0	0.76 U	112	65-133			
Bromodichloromethane	22		2.0	ug/L	20.0	0.52 U	108	58-135			
Bromoform	18		2.0	ug/L	20.0	0.75 U	88	46-148			
Bromomethane	19		2.0	ug/L	20.0	0.95 U	94	10-173			
Carbon Tetrachloride	23		2.0	ug/L	20.0	0.94 U	116	54-156			
Chlorobenzene	24		2.0	ug/L	20.0	0.72 U	121	51-139			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F10034 - EPA 5030B_MS - Continued

Matrix Spike (0F10034-MS1) Continued Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 19:39

Source: AD03465-10

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	23		2.0	ug/L	20.0	0.98 U	114	27-180			
Chloroform	22		2.0	ug/L	20.0	0.80 U	110	58-139			
Chloromethane	15		2.0	ug/L	20.0	0.82 U	76	33-154			
cis-1,2-Dichloroethene	25		2.0	ug/L	20.0	5.8	98	56-128			
cis-1,3-Dichloropropene	18		2.0	ug/L	20.0	0.59 U	90	64-128			
Dibromochloromethane	19		2.0	ug/L	20.0	0.44 U	95	50-140			
Dichlorodifluoromethane	21		2.0	ug/L	20.0	0.74 U	105	10-180			
Freon 113	21		2.0	ug/L	20.0	0.73 U	107	47-173			
Tetrachloroethene	23		2.0	ug/L	20.0	0.76 U	115	60-147			
trans-1,2-Dichloroethene	22		2.0	ug/L	20.0	0.73 U	110	54-134			
trans-1,3-Dichloropropene	19		2.0	ug/L	20.0	0.73 U	93	65-149			
Trichloroethene	24		2.0	ug/L	20.0	1.0	116	62-135			
Trichlorofluoromethane	21		2.0	ug/L	20.0	0.94 U	105	56-155			
Vinyl chloride	33		2.0	ug/L	20.0	15	92	20-167			
4-Bromofluorobenzene	*54*			*ug/L*	*50.0*		*108*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*105*	*53-146*			
Toluene-d8	*53*			*ug/L*	*50.0*		*106*	*41-146*			

Matrix Spike Dup (0F10034-MSD1) Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 20:09

Source: AD03465-10

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.0	ug/L	20.0	0.80 U	111	57-148	5	25	
1,1,2,2-Tetrachloroethane	20		2.0	ug/L	20.0	0.54 U	99	60-139	3	17	
1,1,2-Trichloroethane	20		2.0	ug/L	20.0	0.76 U	98	57-141	6	16	
1,1-Dichloroethane	20		2.0	ug/L	20.0	0.62 U	99	57-142	5	24	
1,1-Dichloroethene	17		2.0	ug/L	20.0	0.94 U	85	47-139	14	16	
1,2,4-Trichlorobenzene	23		2.0	ug/L	20.0	0.70 U	117	52-159	23	24	
1,2-Dibromo-3-chloropropane	18		10	ug/L	20.0	0.96 U	92	48-150	19	21	
1,2-Dibromoethane	19		2.0	ug/L	20.0	0.78 U	94	57-140	2	16	
1,2-Dichlorobenzene	22		2.0	ug/L	20.0	0.73 U	110	63-131	0.2	25	
1,2-Dichloroethane	21		2.0	ug/L	20.0	0.63 U	106	50-156	0.9	18	
1,2-Dichloropropane	19		2.0	ug/L	20.0	0.80 U	97	61-133	0.2	26	
1,3-Dichlorobenzene	20		2.0	ug/L	20.0	0.77 U	102	66-129	4	23	
1,4-Dichlorobenzene	21		2.0	ug/L	20.0	0.76 U	107	65-133	5	23	
Bromodichloromethane	22		2.0	ug/L	20.0	0.52 U	108	58-135	0.6	19	
Bromoform	19		2.0	ug/L	20.0	0.75 U	95	46-148	8	18	
Bromomethane	17		2.0	ug/L	20.0	0.95 U	85	10-173	10	29	
Carbon Tetrachloride	23		2.0	ug/L	20.0	0.94 U	114	54-156	2	27	
Chlorobenzene	22		2.0	ug/L	20.0	0.72 U	109	51-139	10	13	
Chloroethane	22		2.0	ug/L	20.0	0.98 U	110	27-180	3	22	
Chloroform	20		2.0	ug/L	20.0	0.80 U	100	58-139	10	17	
Chloromethane	15		2.0	ug/L	20.0	0.82 U	77	33-154	0.9	31	
cis-1,2-Dichloroethene	23		2.0	ug/L	20.0	5.8	85	56-128	11	17	
cis-1,3-Dichloropropene	18		2.0	ug/L	20.0	0.59 U	90	64-128	0.3	20	
Dibromochloromethane	18		2.0	ug/L	20.0	0.44 U	92	50-140	3	18	
Dichlorodifluoromethane	18		2.0	ug/L	20.0	0.74 U	91	10-180	15	26	
Freon 113	20		2.0	ug/L	20.0	0.73 U	102	47-173	5	30	
Tetrachloroethene	19		2.0	ug/L	20.0	0.76 U	94	60-147	21	21	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F10034 - EPA 5030B_MS - Continued

Matrix Spike Dup (0F10034-MSD1) Continued Prepared: 06/10/2020 00:00 Analyzed: 06/10/2020 20:09

Source: AD03465-10

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	22		2.0	ug/L	20.0	0.73 U	111	54-134	1	20	
trans-1,3-Dichloropropene	18		2.0	ug/L	20.0	0.73 U	88	65-149	5	17	
Trichloroethene	22		2.0	ug/L	20.0	1.0	103	62-135	11	20	
Trichlorofluoromethane	21		2.0	ug/L	20.0	0.94 U	103	56-155	1	22	
Vinyl chloride	32		2.0	ug/L	20.0	15	85	20-167	4	24	
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*104*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Batch 0F11029 - EPA 5030B_MS

Blank (0F11029-BLK1) Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 09:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.0	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*106*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F11029 - EPA 5030B_MS - Continued

Blank (0F11029-BLK1) Continued Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 09:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

LCS (0F11029-BS1) Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 08:41

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0		106	57-148			
1,1,2,2-Tetrachloroethane	16		2.0	ug/L	20.0		81	60-139			
1,1,2-Trichloroethane	17		2.0	ug/L	20.0		83	57-141			
1,1-Dichloroethane	19		2.0	ug/L	20.0		96	57-142			
1,1-Dichloroethene	16		2.0	ug/L	20.0		82	47-139			
1,2,4-Trichlorobenzene	22		2.0	ug/L	20.0		109	52-159			
1,2-Dibromo-3-chloropropane	18		10	ug/L	20.0		90	48-150			
1,2-Dibromoethane	16		2.0	ug/L	20.0		80	57-140			
1,2-Dichlorobenzene	21		2.0	ug/L	20.0		104	63-131			
1,2-Dichloroethane	19		2.0	ug/L	20.0		93	50-156			
1,2-Dichloropropane	18		2.0	ug/L	20.0		92	61-133			
1,3-Dichlorobenzene	18		2.0	ug/L	20.0		92	66-129			
1,4-Dichlorobenzene	20		2.0	ug/L	20.0		98	65-133			
Bromodichloromethane	20		2.0	ug/L	20.0		100	58-135			
Bromoform	15		2.0	ug/L	20.0		76	46-148			
Bromomethane	16		2.0	ug/L	20.0		81	10-173			
Carbon Tetrachloride	22		2.0	ug/L	20.0		112	54-156			
Chlorobenzene	20		2.0	ug/L	20.0		100	51-139			
Chloroethane	22		2.0	ug/L	20.0		108	27-180			
Chloroform	19		2.0	ug/L	20.0		97	58-139			
Chloromethane	14		2.0	ug/L	20.0		71	33-154			
cis-1,2-Dichloroethene	17		2.0	ug/L	20.0		85	56-128			
cis-1,3-Dichloropropene	17		2.0	ug/L	20.0		86	64-128			
Dibromochloromethane	16		2.0	ug/L	20.0		80	50-140			
Dichlorodifluoromethane	19		2.0	ug/L	20.0		94	10-180			
Freon 113	19		2.0	ug/L	20.0		95	47-173			
Tetrachloroethene	21		2.0	ug/L	20.0		103	60-147			
trans-1,2-Dichloroethene	20		2.0	ug/L	20.0		100	54-134			
trans-1,3-Dichloropropene	16		2.0	ug/L	20.0		81	65-149			
Trichloroethene	19		2.0	ug/L	20.0		96	62-135			
Trichlorofluoromethane	19		2.0	ug/L	20.0		95	56-155			
Vinyl chloride	17		2.0	ug/L	20.0		86	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*100*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

Matrix Spike (0F11029-MS1) Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 19:11

Source: AD03465-12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1200		100	ug/L	1000	40 U	116	57-148			
1,1,2,2-Tetrachloroethane	900		100	ug/L	1000	27 U	90	60-139			
1,1,2-Trichloroethane	920		100	ug/L	1000	38 U	92	57-141			
1,1-Dichloroethane	1100		100	ug/L	1000	31 U	108	57-142			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F11029 - EPA 5030B_MS - Continued

Matrix Spike (0F11029-MS1) Continued Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 19:11

Source: AD03465-12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	950		100	ug/L	1000	47 U	95	47-139			
1,2,4-Trichlorobenzene	850		100	ug/L	1000	35 U	85	52-159			
1,2-Dibromo-3-chloropropane	700		500	ug/L	1000	48 U	70	48-150			
1,2-Dibromoethane	820		100	ug/L	1000	39 U	82	57-140			
1,2-Dichlorobenzene	1000		100	ug/L	1000	36 U	102	63-131			
1,2-Dichloroethane	1100		100	ug/L	1000	32 U	105	50-156			
1,2-Dichloropropane	890		100	ug/L	1000	40 U	89	61-133			
1,3-Dichlorobenzene	980		100	ug/L	1000	38 U	98	66-129			
1,4-Dichlorobenzene	1100		100	ug/L	1000	38 U	107	65-133			
Bromodichloromethane	1000		100	ug/L	1000	26 U	103	58-135			
Bromoform	840		100	ug/L	1000	38 U	84	46-148			
Bromomethane	980		100	ug/L	1000	48 U	98	10-173			
Carbon Tetrachloride	1100		100	ug/L	1000	47 U	113	54-156			
Chlorobenzene	1100		100	ug/L	1000	36 U	105	51-139			
Chloroethane	1200		100	ug/L	1000	49 U	117	27-180			
Chloroform	1100		100	ug/L	1000	40 U	111	58-139			
Chloromethane	820		100	ug/L	1000	41 U	82	33-154			
cis-1,2-Dichloroethene	3400		100	ug/L	1000	2300	110	56-128			
cis-1,3-Dichloropropene	950		100	ug/L	1000	30 U	95	64-128			
Dibromochloromethane	850		100	ug/L	1000	22 U	85	50-140			
Dichlorodifluoromethane	1000		100	ug/L	1000	37 U	100	10-180			
Freon 113	1100		100	ug/L	1000	36 U	110	47-173			
Tetrachloroethene	890		100	ug/L	1000	38 U	89	60-147			
trans-1,2-Dichloroethene	1100		100	ug/L	1000	36 U	114	54-134			
trans-1,3-Dichloropropene	860		100	ug/L	1000	36 U	86	65-149			
Trichloroethene	1000		100	ug/L	1000	44 U	104	62-135			
Trichlorofluoromethane	1100		100	ug/L	1000	47 U	111	56-155			
Vinyl chloride	4300		100	ug/L	1000	3400	93	20-167			
4-Bromofluorobenzene	*2600*			*ug/L*	*2500*		*103*	*41-142*			
Dibromofluoromethane	*2700*			*ug/L*	*2500*		*108*	*53-146*			
Toluene-d8	*2600*			*ug/L*	*2500*		*105*	*41-146*			

Matrix Spike Dup (0F11029-MSD1) Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 19:42

Source: AD03465-12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1100		100	ug/L	1000	40 U	109	57-148	6	25	
1,1,2,2-Tetrachloroethane	870		100	ug/L	1000	27 U	87	60-139	4	17	
1,1,2-Trichloroethane	880		100	ug/L	1000	38 U	88	57-141	4	16	
1,1-Dichloroethane	980		100	ug/L	1000	31 U	98	57-142	9	24	
1,1-Dichloroethene	860		100	ug/L	1000	47 U	86	47-139	9	16	
1,2,4-Trichlorobenzene	990		100	ug/L	1000	35 U	99	52-159	16	24	
1,2-Dibromo-3-chloropropane	740		500	ug/L	1000	48 U	74	48-150	5	21	
1,2-Dibromoethane	860		100	ug/L	1000	39 U	86	57-140	4	16	
1,2-Dichlorobenzene	970		100	ug/L	1000	36 U	97	63-131	5	25	
1,2-Dichloroethane	970		100	ug/L	1000	32 U	97	50-156	8	18	
1,2-Dichloropropane	900		100	ug/L	1000	40 U	90	61-133	1	26	
1,3-Dichlorobenzene	980		100	ug/L	1000	38 U	98	66-129	0.3	23	
1,4-Dichlorobenzene	980		100	ug/L	1000	38 U	98	65-133	8	23	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F11029 - EPA 5030B_MS - Continued

Matrix Spike Dup (0F11029-MSD1) Continued Prepared: 06/11/2020 00:00 Analyzed: 06/11/2020 19:42

Source: AD03465-12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	1000		100	ug/L	1000	26 U	103	58-135	0.4	19	
Bromoform	820		100	ug/L	1000	38 U	82	46-148	3	18	
Bromomethane	990		100	ug/L	1000	48 U	99	10-173	0.7	29	
Carbon Tetrachloride	1100		100	ug/L	1000	47 U	110	54-156	3	27	
Chlorobenzene	1000		100	ug/L	1000	36 U	102	51-139	3	13	
Chloroethane	1100		100	ug/L	1000	49 U	108	27-180	7	22	
Chloroform	1000		100	ug/L	1000	40 U	102	58-139	9	17	
Chloromethane	760		100	ug/L	1000	41 U	76	33-154	6	31	
cis-1,2-Dichloroethene	3200		100	ug/L	1000	2300	94	56-128	5	17	
cis-1,3-Dichloropropene	860		100	ug/L	1000	30 U	86	64-128	10	20	
Dibromochloromethane	840		100	ug/L	1000	22 U	84	50-140	2	18	
Dichlorodifluoromethane	950		100	ug/L	1000	37 U	95	10-180	5	26	
Freon 113	980		100	ug/L	1000	36 U	98	47-173	11	30	
Tetrachloroethene	850		100	ug/L	1000	38 U	85	60-147	5	21	
trans-1,2-Dichloroethene	1000		100	ug/L	1000	36 U	102	54-134	11	20	
trans-1,3-Dichloropropene	850		100	ug/L	1000	36 U	85	65-149	1	17	
Trichloroethene	1000		100	ug/L	1000	44 U	104	62-135	0	20	
Trichlorofluoromethane	1000		100	ug/L	1000	47 U	104	56-155	6	22	
Vinyl chloride	4000		100	ug/L	1000	3400	61	20-167	8	24	
4-Bromofluorobenzene	*2500*			*ug/L*	*2500*		*101*	*41-142*			
Dibromofluoromethane	*2700*			*ug/L*	*2500*		*107*	*53-146*			
Toluene-d8	*2600*			*ug/L*	*2500*		*104*	*41-146*			

Batch 0F12027 - EPA 5030B_MS

Blank (0F12027-BLK1) Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 11:13

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	**1.4**	**I**	2.0	ug/L							QB-02
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F12027 - EPA 5030B_MS - Continued

Blank (0F12027-BLK1) Continued Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 11:13

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*100*	*41-142*			
Dibromofluoromethane	*50*			*ug/L*	*50.0*		*100*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

LCS (0F12027-BS1) Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 10:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0		104	57-148			
1,1,2,2-Tetrachloroethane	14		2.0	ug/L	20.0		72	60-139			
1,1,2-Trichloroethane	15		2.0	ug/L	20.0		75	57-141			
1,1-Dichloroethane	18		2.0	ug/L	20.0		92	57-142			
1,1-Dichloroethene	17		2.0	ug/L	20.0		84	47-139			
1,2,4-Trichlorobenzene	21		2.0	ug/L	20.0		105	52-159			
1,2-Dibromo-3-chloropropane	10		10	ug/L	20.0		52	48-150			
1,2-Dibromoethane	16		2.0	ug/L	20.0		82	57-140			
1,2-Dichlorobenzene	20		2.0	ug/L	20.0		100	63-131			
1,2-Dichloroethane	18		2.0	ug/L	20.0		89	50-156			
1,2-Dichloropropane	18		2.0	ug/L	20.0		90	61-133			
1,3-Dichlorobenzene	19		2.0	ug/L	20.0		95	66-129			
1,4-Dichlorobenzene	20		2.0	ug/L	20.0		102	65-133			
Bromodichloromethane	20		2.0	ug/L	20.0		100	58-135			
Bromoform	15		2.0	ug/L	20.0		77	46-148			
Bromomethane	20		2.0	ug/L	20.0		99	10-173			
Carbon Tetrachloride	21		2.0	ug/L	20.0		107	54-156			
Chlorobenzene	20		2.0	ug/L	20.0		100	51-139			
Chloroethane	23		2.0	ug/L	20.0		114	27-180			
Chloroform	20		2.0	ug/L	20.0		100	58-139			
Chloromethane	14		2.0	ug/L	20.0		72	33-154			
cis-1,2-Dichloroethene	16		2.0	ug/L	20.0		81	56-128			
cis-1,3-Dichloropropene	18		2.0	ug/L	20.0		88	64-128			
Dibromochloromethane	15		2.0	ug/L	20.0		76	50-140			
Dichlorodifluoromethane	19		2.0	ug/L	20.0		97	10-180			
Freon 113	19		2.0	ug/L	20.0		95	47-173			
Tetrachloroethene	25		2.0	ug/L	20.0		125	60-147			
trans-1,2-Dichloroethene	20		2.0	ug/L	20.0		102	54-134			
trans-1,3-Dichloropropene	17		2.0	ug/L	20.0		83	65-149			
Trichloroethene	18		2.0	ug/L	20.0		92	62-135			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F12027 - EPA 5030B_MS - Continued

LCS (0F12027-BS1) Continued Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 10:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichlorofluoromethane	20		2.0	ug/L	20.0		98	56-155			
Vinyl chloride	18		2.0	ug/L	20.0		92	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*100*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*109*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

Matrix Spike (0F12027-MS1) Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 20:34

Source: AD03465-15

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2400		200	ug/L	2000	80 U	118	57-148			
1,1,2,2-Tetrachloroethane	1000		200	ug/L	2000	54 U	52	60-139			QM-07
1,1,2-Trichloroethane	1300		200	ug/L	2000	76 U	65	57-141			
1,1-Dichloroethane	1900		200	ug/L	2000	62 U	95	57-142			
1,1-Dichloroethene	1700		200	ug/L	2000	94 U	85	47-139			
1,2,4-Trichlorobenzene	880		200	ug/L	2000	70 U	44	52-159			QM-07
1,2-Dibromo-3-chloropropane	790	I	1000	ug/L	2000	96 U	40	48-150			QM-07
1,2-Dibromoethane	1200		200	ug/L	2000	78 U	58	57-140			
1,2-Dichlorobenzene	1800		200	ug/L	2000	73 U	91	63-131			
1,2-Dichloroethane	1700		200	ug/L	2000	63 U	83	50-156			
1,2-Dichloropropane	1900		200	ug/L	2000	80 U	95	61-133			
1,3-Dichlorobenzene	1900		200	ug/L	2000	77 U	93	66-129			
1,4-Dichlorobenzene	2100		200	ug/L	2000	76 U	103	65-133			
Bromodichloromethane	1800		200	ug/L	2000	52 U	90	58-135			
Bromoform	1100		200	ug/L	2000	75 U	56	46-148			
Bromomethane	2100		200	ug/L	2000	95 U	103	10-173			
Carbon Tetrachloride	2300		200	ug/L	2000	94 U	113	54-156			
Chlorobenzene	2100		200	ug/L	2000	72 U	104	51-139			
Chloroethane	2300		200	ug/L	2000	98 U	113	27-180			
Chloroform	2100		200	ug/L	2000	80 U	105	58-139			
Chloromethane	1500		200	ug/L	2000	82 U	76	33-154			
cis-1,2-Dichloroethene	3800		200	ug/L	2000	2000	92	56-128			
cis-1,3-Dichloropropene	1600		200	ug/L	2000	59 U	78	64-128			
Dibromochloromethane	1400		200	ug/L	2000	44 U	72	50-140			
Dichlorodifluoromethane	2100		200	ug/L	2000	74 U	105	10-180			
Freon 113	2000		200	ug/L	2000	73 U	101	47-173			
Tetrachloroethene	1900		200	ug/L	2000	76 U	97	60-147			
trans-1,2-Dichloroethene	2100		200	ug/L	2000	73 U	107	54-134			
trans-1,3-Dichloropropene	1300		200	ug/L	2000	73 U	65	65-149			
Trichloroethene	2200		200	ug/L	2000	89 U	109	62-135			
Trichlorofluoromethane	2200		200	ug/L	2000	94 U	108	56-155			
Vinyl chloride	2200		200	ug/L	2000	220	97	20-167			
4-Bromofluorobenzene	*5000*			*ug/L*	*5000*		*99*	*41-142*			
Dibromofluoromethane	*5200*			*ug/L*	*5000*		*103*	*53-146*			
Toluene-d8	*5400*			*ug/L*	*5000*		*107*	*41-146*			

Matrix Spike Dup (0F12027-MSD1) Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 21:05

Source: AD03465-15

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F12027 - EPA 5030B_MS - Continued

Matrix Spike Dup (0F12027-MSD1) Continued Prepared: 06/12/2020 00:00 Analyzed: 06/12/2020 21:05

Source: AD03465-15

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2100		200	ug/L	2000	80 U	103	57-148	14	25	
1,1,2,2-Tetrachloroethane	1200		200	ug/L	2000	54 U	61	60-139	16	17	
1,1,2-Trichloroethane	1400		200	ug/L	2000	76 U	68	57-141	5	16	
1,1-Dichloroethane	1900		200	ug/L	2000	62 U	96	57-142	1	24	
1,1-Dichloroethene	1600		200	ug/L	2000	94 U	78	47-139	8	16	
1,2,4-Trichlorobenzene	1100		200	ug/L	2000	70 U	55	52-159	23	24	
1,2-Dibromo-3-chloropropane	800	I	1000	ug/L	2000	96 U	40	48-150	0.6	21	QM-07
1,2-Dibromoethane	1200		200	ug/L	2000	78 U	59	57-140	0.7	16	
1,2-Dichlorobenzene	1800		200	ug/L	2000	73 U	89	63-131	2	25	
1,2-Dichloroethane	1700		200	ug/L	2000	63 U	85	50-156	3	18	
1,2-Dichloropropane	1800		200	ug/L	2000	80 U	91	61-133	5	26	
1,3-Dichlorobenzene	2000		200	ug/L	2000	77 U	99	66-129	7	23	
1,4-Dichlorobenzene	2000		200	ug/L	2000	76 U	102	65-133	1	23	
Bromodichloromethane	1900		200	ug/L	2000	52 U	95	58-135	6	19	
Bromoform	1100		200	ug/L	2000	75 U	55	46-148	2	18	
Bromomethane	2100		200	ug/L	2000	95 U	103	10-173	0.4	29	
Carbon Tetrachloride	2200		200	ug/L	2000	94 U	112	54-156	0.7	27	
Chlorobenzene	2100		200	ug/L	2000	72 U	107	51-139	3	13	
Chloroethane	2200		200	ug/L	2000	98 U	109	27-180	4	22	
Chloroform	2000		200	ug/L	2000	80 U	100	58-139	5	17	
Chloromethane	1600		200	ug/L	2000	82 U	81	33-154	6	31	
cis-1,2-Dichloroethene	3600		200	ug/L	2000	2000	82	56-128	5	17	
cis-1,3-Dichloropropene	1500		200	ug/L	2000	59 U	73	64-128	6	20	
Dibromochloromethane	1400		200	ug/L	2000	44 U	68	50-140	6	18	
Dichlorodifluoromethane	1900		200	ug/L	2000	74 U	95	10-180	10	26	
Freon 113	1800		200	ug/L	2000	73 U	90	47-173	12	30	
Tetrachloroethene	1900		200	ug/L	2000	76 U	96	60-147	2	21	
trans-1,2-Dichloroethene	2100		200	ug/L	2000	73 U	104	54-134	3	20	
trans-1,3-Dichloropropene	1200		200	ug/L	2000	73 U	61	65-149	7	17	QM-07
Trichloroethene	2000		200	ug/L	2000	89 U	99	62-135	10	20	
Trichlorofluoromethane	2000		200	ug/L	2000	94 U	100	56-155	8	22	
Vinyl chloride	2100		200	ug/L	2000	220	94	20-167	2	24	
4-Bromofluorobenzene	*4800*	*I*		*ug/L*	*5000*		*95*	*41-142*			
Dibromofluoromethane	*5100*			*ug/L*	*5000*		*101*	*53-146*			
Toluene-d8	*5300*			*ug/L*	*5000*		*106*	*41-146*			

Batch 0F15030 - EPA 5030B_MS

Blank (0F15030-BLK1) Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 10:51

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.0	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F15030 - EPA 5030B_MS - Continued

Blank (0F15030-BLK1) Continued Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 10:51

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*95*	*41-142*			
Dibromofluoromethane	*49*	*I*		*ug/L*	*50.0*		*99*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

LCS (0F15030-BS1) Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 09:47

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.0	ug/L	20.0		115	57-148			
1,1,2,2-Tetrachloroethane	12		2.0	ug/L	20.0		59	60-139			A-07
1,1,2-Trichloroethane	14		2.0	ug/L	20.0		72	57-141			
1,1-Dichloroethane	21		2.0	ug/L	20.0		105	57-142			
1,1-Dichloroethene	18		2.0	ug/L	20.0		89	47-139			
1,2,4-Trichlorobenzene	22		2.0	ug/L	20.0		112	52-159			
1,2-Dibromo-3-chloropropane	14		10	ug/L	20.0		70	48-150			
1,2-Dibromoethane	12		2.0	ug/L	20.0		59	57-140			
1,2-Dichlorobenzene	22		2.0	ug/L	20.0		108	63-131			
1,2-Dichloroethane	16		2.0	ug/L	20.0		82	50-156			
1,2-Dichloropropane	19		2.0	ug/L	20.0		94	61-133			
1,3-Dichlorobenzene	22		2.0	ug/L	20.0		109	66-129			
1,4-Dichlorobenzene	23		2.0	ug/L	20.0		116	65-133			
Bromodichloromethane	19		2.0	ug/L	20.0		96	58-135			
Bromoform	13		2.0	ug/L	20.0		65	46-148			
Bromomethane	21		2.0	ug/L	20.0		103	10-173			
Carbon Tetrachloride	24		2.0	ug/L	20.0		118	54-156			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F15030 - EPA 5030B_MS - Continued

LCS (0F15030-BS1) Continued Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 09:47

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	22		2.0	ug/L	20.0		108	51-139			
Chloroethane	27		2.0	ug/L	20.0		134	27-180			
Chloroform	22		2.0	ug/L	20.0		110	58-139			
Chloromethane	18		2.0	ug/L	20.0		90	33-154			
cis-1,2-Dichloroethene	19		2.0	ug/L	20.0		93	56-128			
cis-1,3-Dichloropropene	18		2.0	ug/L	20.0		88	64-128			
Dibromochloromethane	14		2.0	ug/L	20.0		69	50-140			
Dichlorodifluoromethane	20		2.0	ug/L	20.0		98	10-180			
Freon 113	19		2.0	ug/L	20.0		93	47-173			
Tetrachloroethene	19		2.0	ug/L	20.0		97	60-147			
trans-1,2-Dichloroethene	22		2.0	ug/L	20.0		111	54-134			
trans-1,3-Dichloropropene	14		2.0	ug/L	20.0		71	65-149			
Trichloroethene	21		2.0	ug/L	20.0		104	62-135			
Trichlorofluoromethane	24		2.0	ug/L	20.0		119	56-155			
Vinyl chloride	23		2.0	ug/L	20.0		114	20-167			
4-Bromofluorobenzene	*46*	*I*		*ug/L*	*50.0*		*92*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*103*	*53-146*			
Toluene-d8	*53*			*ug/L*	*50.0*		*105*	*41-146*			

Matrix Spike (0F15030-MS1) Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 20:13

Source: AD03728-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	24		2.0	ug/L	20.0	0.80 U	119	57-148			
1,1,2,2-Tetrachloroethane	10		2.0	ug/L	20.0	0.54 U	51	60-139			QM-19
1,1,2-Trichloroethane	14		2.0	ug/L	20.0	0.76 U	69	57-141			
1,1-Dichloroethane	21		2.0	ug/L	20.0	0.62 U	104	57-142			
1,1-Dichloroethene	18		2.0	ug/L	20.0	0.94 U	90	47-139			
1,2,4-Trichlorobenzene	7.2		2.0	ug/L	20.0	0.70 U	36	52-159			QM-07, QM-11
1,2-Dibromo-3-chloropropane	6.3	I	10	ug/L	20.0	0.96 U	31	48-150			QM-07
1,2-Dibromoethane	12		2.0	ug/L	20.0	0.78 U	58	57-140			
1,2-Dichlorobenzene	19		2.0	ug/L	20.0	0.73 U	95	63-131			
1,2-Dichloroethane	15		2.0	ug/L	20.0	0.63 U	74	50-156			
1,2-Dichloropropane	18		2.0	ug/L	20.0	0.80 U	92	61-133			
1,3-Dichlorobenzene	21		2.0	ug/L	20.0	0.77 U	106	66-129			
1,4-Dichlorobenzene	22		2.0	ug/L	20.0	0.76 U	108	65-133			
Bromodichloromethane	18		2.0	ug/L	20.0	0.52 U	91	58-135			
Bromoform	10		2.0	ug/L	20.0	0.75 U	51	46-148			
Bromomethane	24		2.0	ug/L	20.0	0.95 U	120	10-173			
Carbon Tetrachloride	29		2.0	ug/L	20.0	0.94 U	144	54-156			
Chlorobenzene	23		2.0	ug/L	20.0	0.72 U	115	51-139			
Chloroethane	27		2.0	ug/L	20.0	0.98 U	133	27-180			
Chloroform	21		2.0	ug/L	20.0	0.80 U	107	58-139			
Chloromethane	20		2.0	ug/L	20.0	0.82 U	100	33-154			
cis-1,2-Dichloroethene	19		2.0	ug/L	20.0	0.53 U	95	56-128			
cis-1,3-Dichloropropene	15		2.0	ug/L	20.0	0.59 U	75	64-128			
Dibromochloromethane	13		2.0	ug/L	20.0	0.44 U	66	50-140			
Dichlorodifluoromethane	21		2.0	ug/L	20.0	0.74 U	103	10-180			
Freon 113	20		2.0	ug/L	20.0	0.73 U	101	47-173			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F15030 - EPA 5030B_MS - Continued

Matrix Spike (0F15030-MS1) Continued Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 20:13

Source: AD03728-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Tetrachloroethene	24		2.0	ug/L	20.0	0.76 U	119	60-147			
trans-1,2-Dichloroethene	21		2.0	ug/L	20.0	0.73 U	105	54-134			
trans-1,3-Dichloropropene	13		2.0	ug/L	20.0	0.73 U	67	65-149			
Trichloroethene	24		2.0	ug/L	20.0	0.89 U	118	62-135			
Trichlorofluoromethane	25		2.0	ug/L	20.0	0.94 U	126	56-155			
Vinyl chloride	24		2.0	ug/L	20.0	0.71 U	122	20-167			
4-Bromofluorobenzene	*48*	*I*		*ug/L*	*50.0*		*97*	*41-142*			
Dibromofluoromethane	*50*			*ug/L*	*50.0*		*100*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Matrix Spike Dup (0F15030-MSD1) Prepared: 06/15/2020 00:00 Analyzed: 06/15/2020 20:44

Source: AD03728-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	24		2.0	ug/L	20.0	0.80 U	122	57-148	3	25	
1,1,2,2-Tetrachloroethane	11		2.0	ug/L	20.0	0.54 U	54	60-139	6	17	QM-19
1,1,2-Trichloroethane	14		2.0	ug/L	20.0	0.76 U	68	57-141	1	16	
1,1-Dichloroethane	22		2.0	ug/L	20.0	0.62 U	108	57-142	3	24	
1,1-Dichloroethene	17		2.0	ug/L	20.0	0.94 U	86	47-139	4	16	
1,2,4-Trichlorobenzene	13		2.0	ug/L	20.0	0.70 U	63	52-159	55	24	QM-11
1,2-Dibromo-3-chloropropane	7.7	I	10	ug/L	20.0	0.96 U	39	48-150	21	21	QM-07
1,2-Dibromoethane	12		2.0	ug/L	20.0	0.78 U	59	57-140	3	16	
1,2-Dichlorobenzene	19		2.0	ug/L	20.0	0.73 U	94	63-131	1	25	
1,2-Dichloroethane	15		2.0	ug/L	20.0	0.63 U	77	50-156	4	18	
1,2-Dichloropropane	17		2.0	ug/L	20.0	0.80 U	86	61-133	7	26	
1,3-Dichlorobenzene	21		2.0	ug/L	20.0	0.77 U	105	66-129	0.8	23	
1,4-Dichlorobenzene	21		2.0	ug/L	20.0	0.76 U	105	65-133	3	23	
Bromodichloromethane	19		2.0	ug/L	20.0	0.52 U	96	58-135	5	19	
Bromoform	9.8		2.0	ug/L	20.0	0.75 U	49	46-148	4	18	
Bromomethane	23		2.0	ug/L	20.0	0.95 U	116	10-173	3	29	
Carbon Tetrachloride	24		2.0	ug/L	20.0	0.94 U	119	54-156	19	27	
Chlorobenzene	22		2.0	ug/L	20.0	0.72 U	110	51-139	5	13	
Chloroethane	27		2.0	ug/L	20.0	0.98 U	137	27-180	3	22	
Chloroform	23		2.0	ug/L	20.0	0.80 U	113	58-139	6	17	
Chloromethane	19		2.0	ug/L	20.0	0.82 U	95	33-154	5	31	
cis-1,2-Dichloroethene	18		2.0	ug/L	20.0	0.53 U	92	56-128	3	17	
cis-1,3-Dichloropropene	13		2.0	ug/L	20.0	0.59 U	66	64-128	11	20	
Dibromochloromethane	14		2.0	ug/L	20.0	0.44 U	69	50-140	4	18	
Dichlorodifluoromethane	21		2.0	ug/L	20.0	0.74 U	105	10-180	2	26	
Freon 113	19		2.0	ug/L	20.0	0.73 U	95	47-173	6	30	
Tetrachloroethene	23		2.0	ug/L	20.0	0.76 U	115	60-147	3	21	
trans-1,2-Dichloroethene	22		2.0	ug/L	20.0	0.73 U	111	54-134	6	20	
trans-1,3-Dichloropropene	12		2.0	ug/L	20.0	0.73 U	62	65-149	9	17	QM-07
Trichloroethene	22		2.0	ug/L	20.0	0.89 U	111	62-135	6	20	
Trichlorofluoromethane	25		2.0	ug/L	20.0	0.94 U	125	56-155	0.7	22	
Vinyl chloride	23		2.0	ug/L	20.0	0.71 U	114	20-167	7	24	
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*94*	*41-142*			
Dibromofluoromethane	*47*	*I*		*ug/L*	*50.0*		*95*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F16021 - EPA 5030B_MS

Blank (0F16021-BLK1) Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 12:48

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.0	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.0	ug/L							
1,1,2-Trichloroethane	0.76	U	2.0	ug/L							
1,1-Dichloroethane	0.62	U	2.0	ug/L							
1,1-Dichloroethene	0.94	U	2.0	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.0	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	10	ug/L							
1,2-Dibromoethane	0.78	U	2.0	ug/L							
1,2-Dichlorobenzene	0.73	U	2.0	ug/L							
1,2-Dichloroethane	0.63	U	2.0	ug/L							
1,2-Dichloropropane	0.80	U	2.0	ug/L							
1,3-Dichlorobenzene	0.77	U	2.0	ug/L							
1,4-Dichlorobenzene	0.76	U	2.0	ug/L							
Bromodichloromethane	0.52	U	2.0	ug/L							
Bromoform	0.75	U	2.0	ug/L							
Bromomethane	0.95	U	2.0	ug/L							
Carbon Tetrachloride	0.94	U	2.0	ug/L							
Chlorobenzene	0.72	U	2.0	ug/L							
Chloroethane	0.98	U	2.0	ug/L							
Chloroform	0.80	U	2.0	ug/L							
Chloromethane	0.82	U	2.0	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.0	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.0	ug/L							
Dibromochloromethane	0.44	U	2.0	ug/L							
Dichlorodifluoromethane	0.74	U	2.0	ug/L							
Freon 113	0.73	U	2.0	ug/L							
Tetrachloroethene	0.76	U	2.0	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.0	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.0	ug/L							
Trichloroethene	0.89	U	2.0	ug/L							
Trichlorofluoromethane	0.94	U	2.0	ug/L							
Vinyl chloride	0.71	U	2.0	ug/L							
4-Bromofluorobenzene	*45*	*I*		*ug/L*	*50.0*		*91*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*110*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

LCS (0F16021-BS1) Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 10:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.0	ug/L	20.0		99	57-148			
1,1,2,2-Tetrachloroethane	22		2.0	ug/L	20.0		109	60-139			
1,1,2-Trichloroethane	21		2.0	ug/L	20.0		104	57-141			
1,1-Dichloroethane	19		2.0	ug/L	20.0		95	57-142			
1,1-Dichloroethene	16		2.0	ug/L	20.0		79	47-139			
1,2,4-Trichlorobenzene	20		2.0	ug/L	20.0		101	52-159			
1,2-Dibromo-3-chloropropane	16		10	ug/L	20.0		81	48-150			
1,2-Dibromoethane	19		2.0	ug/L	20.0		96	57-140			
1,2-Dichlorobenzene	22		2.0	ug/L	20.0		109	63-131			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F16021 - EPA 5030B_MS - Continued

LCS (0F16021-BS1) Continued Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 10:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	17		2.0	ug/L	20.0		85	50-156			
1,2-Dichloropropane	21		2.0	ug/L	20.0		103	61-133			
1,3-Dichlorobenzene	22		2.0	ug/L	20.0		112	66-129			
1,4-Dichlorobenzene	21		2.0	ug/L	20.0		107	65-133			
Bromodichloromethane	19		2.0	ug/L	20.0		96	58-135			
Bromoform	19		2.0	ug/L	20.0		94	46-148			
Bromomethane	7.2		2.0	ug/L	20.0		36	10-173			
Carbon Tetrachloride	19		2.0	ug/L	20.0		94	54-156			
Chlorobenzene	20		2.0	ug/L	20.0		101	51-139			
Chloroethane	19		2.0	ug/L	20.0		93	27-180			
Chloroform	20		2.0	ug/L	20.0		98	58-139			
Chloromethane	13		2.0	ug/L	20.0		65	33-154			
cis-1,2-Dichloroethene	20		2.0	ug/L	20.0		100	56-128			
cis-1,3-Dichloropropene	20		2.0	ug/L	20.0		98	64-128			
Dibromochloromethane	20		2.0	ug/L	20.0		98	50-140			
Dichlorodifluoromethane	8.6		2.0	ug/L	20.0		43	10-180			
Freon 113	16		2.0	ug/L	20.0		80	47-173			
Tetrachloroethene	19		2.0	ug/L	20.0		96	60-147			
trans-1,2-Dichloroethene	20		2.0	ug/L	20.0		98	54-134			
trans-1,3-Dichloropropene	20		2.0	ug/L	20.0		101	65-149			
Trichloroethene	19		2.0	ug/L	20.0		94	62-135			
Trichlorofluoromethane	19		2.0	ug/L	20.0		96	56-155			
Vinyl chloride	17		2.0	ug/L	20.0		87	20-167			
4-Bromofluorobenzene	*48*	*I*		*ug/L*	*50.0*		*95*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*110*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Matrix Spike (0F16021-MS1) Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 20:57

Source: AD03804-11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0	0.80 U	106	57-148			
1,1,2,2-Tetrachloroethane	23		2.0	ug/L	20.0	0.54 U	116	60-139			
1,1,2-Trichloroethane	20		2.0	ug/L	20.0	0.76 U	102	57-141			
1,1-Dichloroethane	20		2.0	ug/L	20.0	0.62 U	100	57-142			
1,1-Dichloroethene	17		2.0	ug/L	20.0	0.94 U	87	47-139			
1,2,4-Trichlorobenzene	19		2.0	ug/L	20.0	0.70 U	95	52-159			
1,2-Dibromo-3-chloropropane	16		10	ug/L	20.0	0.96 U	78	48-150			
1,2-Dibromoethane	20		2.0	ug/L	20.0	0.78 U	102	57-140			
1,2-Dichlorobenzene	23		2.0	ug/L	20.0	0.73 U	116	63-131			
1,2-Dichloroethane	18		2.0	ug/L	20.0	0.63 U	88	50-156			
1,2-Dichloropropane	22		2.0	ug/L	20.0	0.80 U	108	61-133			
1,3-Dichlorobenzene	23		2.0	ug/L	20.0	0.77 U	115	66-129			
1,4-Dichlorobenzene	22		2.0	ug/L	20.0	0.76 U	109	65-133			
Bromodichloromethane	20		2.0	ug/L	20.0	0.52 U	100	58-135			
Bromoform	20		2.0	ug/L	20.0	0.75 U	99	46-148			
Bromomethane	10		2.0	ug/L	20.0	0.95 U	50	10-173			
Carbon Tetrachloride	21		2.0	ug/L	20.0	0.94 U	104	54-156			
Chlorobenzene	22		2.0	ug/L	20.0	0.72 U	109	51-139			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F16021 - EPA 5030B_MS - Continued

Matrix Spike (0F16021-MS1) Continued Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 20:57

Source: AD03804-11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	22		2.0	ug/L	20.0	0.98 U	109	27-180			
Chloroform	21		2.0	ug/L	20.0	0.80 U	104	58-139			
Chloromethane	16		2.0	ug/L	20.0	0.82 U	79	33-154			
cis-1,2-Dichloroethene	21		2.0	ug/L	20.0	0.53 U	107	56-128			
cis-1,3-Dichloropropene	20		2.0	ug/L	20.0	0.59 U	100	64-128			
Dibromochloromethane	20		2.0	ug/L	20.0	0.44 U	98	50-140			
Dichlorodifluoromethane	9.3		2.0	ug/L	20.0	0.74 U	46	10-180			
Freon 113	18		2.0	ug/L	20.0	0.73 U	88	47-173			
Tetrachloroethene	17		2.0	ug/L	20.0	0.76 U	86	60-147			
trans-1,2-Dichloroethene	20		2.0	ug/L	20.0	0.73 U	101	54-134			
trans-1,3-Dichloropropene	20		2.0	ug/L	20.0	0.73 U	101	65-149			
Trichloroethene	20		2.0	ug/L	20.0	0.89 U	102	62-135			
Trichlorofluoromethane	22		2.0	ug/L	20.0	0.94 U	110	56-155			
Vinyl chloride	19		2.0	ug/L	20.0	0.71 U	96	20-167			
4-Bromofluorobenzene	*46*	*I*		*ug/L*	*50.0*		*92*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*109*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

Matrix Spike Dup (0F16021-MSD1) Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 21:26

Source: AD03804-11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.0	ug/L	20.0	0.80 U	106	57-148	0.1	25	
1,1,2,2-Tetrachloroethane	23		2.0	ug/L	20.0	0.54 U	113	60-139	3	17	
1,1,2-Trichloroethane	21		2.0	ug/L	20.0	0.76 U	104	57-141	2	16	
1,1-Dichloroethane	20		2.0	ug/L	20.0	0.62 U	101	57-142	0.7	24	
1,1-Dichloroethene	17		2.0	ug/L	20.0	0.94 U	86	47-139	2	16	
1,2,4-Trichlorobenzene	20		2.0	ug/L	20.0	0.70 U	99	52-159	4	24	
1,2-Dibromo-3-chloropropane	16		10	ug/L	20.0	0.96 U	79	48-150	2	21	
1,2-Dibromoethane	20		2.0	ug/L	20.0	0.78 U	100	57-140	3	16	
1,2-Dichlorobenzene	23		2.0	ug/L	20.0	0.73 U	114	63-131	2	25	
1,2-Dichloroethane	17		2.0	ug/L	20.0	0.63 U	87	50-156	1	18	
1,2-Dichloropropane	21		2.0	ug/L	20.0	0.80 U	105	61-133	2	26	
1,3-Dichlorobenzene	23		2.0	ug/L	20.0	0.77 U	116	66-129	0.9	23	
1,4-Dichlorobenzene	23		2.0	ug/L	20.0	0.76 U	113	65-133	3	23	
Bromodichloromethane	20		2.0	ug/L	20.0	0.52 U	99	58-135	0.4	19	
Bromoform	20		2.0	ug/L	20.0	0.75 U	100	46-148	0.9	18	
Bromomethane	12		2.0	ug/L	20.0	0.95 U	58	10-173	14	29	
Carbon Tetrachloride	21		2.0	ug/L	20.0	0.94 U	104	54-156	0.5	27	
Chlorobenzene	22		2.0	ug/L	20.0	0.72 U	108	51-139	0.5	13	
Chloroethane	22		2.0	ug/L	20.0	0.98 U	108	27-180	0.7	22	
Chloroform	21		2.0	ug/L	20.0	0.80 U	103	58-139	1	17	
Chloromethane	17		2.0	ug/L	20.0	0.82 U	84	33-154	6	31	
cis-1,2-Dichloroethene	21		2.0	ug/L	20.0	0.53 U	107	56-128	0.7	17	
cis-1,3-Dichloropropene	20		2.0	ug/L	20.0	0.59 U	100	64-128	0.5	20	
Dibromochloromethane	20		2.0	ug/L	20.0	0.44 U	102	50-140	3	18	
Dichlorodifluoromethane	9.9		2.0	ug/L	20.0	0.74 U	50	10-180	7	26	
Freon 113	18		2.0	ug/L	20.0	0.73 U	89	47-173	0.6	30	
Tetrachloroethene	17		2.0	ug/L	20.0	0.76 U	86	60-147	0.3	21	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0F16021 - EPA 5030B_MS - Continued

Matrix Spike Dup (0F16021-MSD1) Continued Prepared: 06/16/2020 00:00 Analyzed: 06/16/2020 21:26

Source: AD03804-11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	21		2.0	ug/L	20.0	0.73 U	104	54-134	3	20	
trans-1,3-Dichloropropene	20		2.0	ug/L	20.0	0.73 U	101	65-149	0.05	17	
Trichloroethene	20		2.0	ug/L	20.0	0.89 U	101	62-135	0.05	20	
Trichlorofluoromethane	22		2.0	ug/L	20.0	0.94 U	111	56-155	0.5	22	
Vinyl chloride	20		2.0	ug/L	20.0	0.71 U	100	20-167	4	24	
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*93*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*107*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
A-07	Analyte biased low in LCS but detected in the reporting limit standard. Since the analyte in the associated sample was not detected, there is no impact on data quality.
QB-02	The method blank contains analyte at a concentration above the MDL and/or greater than one-half the MRL. The analyte was not detected in the sample.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-19	The spike recovery was outside acceptance limits for the MS and/or MSD.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

WO=AD03465

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1303 | PAGE 1 OF 3

PROJECT NO: 112G08982	FACILITY: KSC-HMFN	PROJECT MANAGER: Chris Hook	PHONE NUMBER: 412-921-8790	LABORATORY NAME AND CONTACT: ENCD, Kaitlin
SAMPLERS (SIGNATURE): Melissa Bennett		FIELD OPERATIONS LEADER: Melissa Bennett	PHONE NUMBER: 321-914-9394	ADDRESS: 10775 Central Port Dr
		CARRIER/WAYBILL NUMBER:		CITY, STATE: Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2020)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: 8260B								COMMENTS
06/02	1105	HMFN-MW0038-020.0-20200602	MW38	15	25	GW	G	3	X										
06/02	1155	HMFN-MW0037-010.0-20200602	MW37	5	15	GW	G	3	X										
06/02	1245	HMFN-MW0046-015.0-20200602	MW46	10	20	GW	G	3	X										
06/02	1325	HMFN-MW0047-025.0-20200602	MW47	20	30	GW	G	3	X										
06/02	1430	HMFN-MW0004-010.0-20200602	MW004	5	15	GW	G	3	X										
06/02	1530	HMFN-MW0039-035.0-20200602	MW39	30	40	GW	G	3	X										
06/02	1600	HMFN-MW0040-042.5-20200602	MW40	40	45	GW	G	3	X										
06/02	1645	HMFN-MW0043-035.0-20200602	MW43	30	40	GW	G	3	X										
06/03	0940	HMFN-MW0044-042.5-20200603	MW44	40	45	GW	G	3	X										
06/03	1035	HMFN-MW0041-035.0-20200603	MW41	30	40	GW	G	3	X										
06/03	1125	HMFN-MW0042-042.5-20200603	MW42	40	45	GW	G	3	X										
06/03	1225	HMFN-MW0011-025.0-20200603	MW11	20	30	GW	G	3	X										
06/03	1310	HMFN-MW0036-015.0-20200603	MW36	10	20	GW	G	3	X										

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	6-5-2020	1430	1. RECEIVED BY	6/5/20	1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: LG-420 1.2°C

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FORM NO. TtNUS-001

WO = AD03465

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1304 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	KSC-HMFN	Chris Hook	412-921-8790	ENCO, Kaitlin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Melissa Bennett		Melissa Bennett	321-914-9394	10775 Central Port Dr
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCL	TYPE OF ANALYSIS: 8260 B	COMMENTS
06/03	1415	HMFN-MW0009-010.0-20200603	MW9	5	15	GW	G	3	X			
06/03	1725	HMFN-MW0034-015.0-20200603	MW34	10	20	GW	G	3	X			
06/04	0920	HMFN-MW0035-035.0-~~20200603~~ 20200604 ms/msd	MW35	30	40	GW	G	3	X			
06/04	1000	HMFN-MW0008-025.0-20200604	MW08	20	30	GW	G	3	X			
06/04	1045	HMFN-MW0029-015.0-20200604	MW29	10	20	GW	G	3	X			Hot spot
06/04	1120	HMFN-MW0030-025.0-20200604	MW30	~~30~~ 25	~~40~~ 30	GW	G	3	X			Hot spot
06/04	1150	HMFN-MW0031-035.0-20200604	MW31	30	40	GW	G	3	X			Hot spot
06/04	1220	HMFN-MW0032-042.5-20200604	MW32	40	45	GW	G	3	X			Hot spot
06/04	1305	HMFN-MW0033-047.5-20200604	MW33	45	50	GW	G	3	X			Hot spot
06/04	1400	HMFN-MW0024-060.0-20200604	MW24	53	65	GW	G	3	X			Hot spot
06/04	1500	HMFN-MW0002-035.0-20200604	MW02	30	40	GW	G	3	X			Hot spot
06/05	0930	HMFN-MW0027-042.5-20200605	MW27	40	45	GW	G	3	X			Hot spot
06/05	1000	HMFN-MW0028-047.5-20200605	MW28	45	50	GW	G	3	X			Hot spot

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Melissa Bennett	~~6/3~~ 6-5-20	1430	1. RECEIVED BY: Cameron Gregory	6/5/20	1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: LG-420 1.2°C

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FORM NO. TtNUS-001

WO = AD03465

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 1305 | PAGE 3 OF 3

PROJECT NO: 112G08982	FACILITY: KSC-HMFN	PROJECT MANAGER Chris Hook	PHONE NUMBER 412-921-8790	LABORATORY NAME AND CONTACT: ENCO, Kaitlin
SAMPLERS (SIGNATURE) Melissa Bennett		FIELD OPERATIONS LEADER Melissa Bennett	PHONE NUMBER 321-914-9394	ADDRESS 10775 Central Port D.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2020)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260 B								COMMENTS
										HCl	G								
06/05	1100	HMFN-MW0045-030.0-20200605	MW45	25	35	GW	G	3	X										Hot Spot
06/05	1115	HMFN-DRUM209857-20200605	DRUM	—	—	GW	G	3	X										IDW

1. RELINQUISHED BY	DATE 6-5-2020	TIME 1430	1. RECEIVED BY James W Driggers	DATE 6/6/20	TIME 1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS LG-420 1.2°C

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Wednesday, November 11, 2020
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AD07357

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, October 30, 2020.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0002-035.0-20201029 **Lab ID: AD07357-01RE1** **Sampled: 10/29/20 12:00** **Received: 10/30/20 14:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/12/20	11/09/20 00:00	11/09/20 17:57

Client ID: HMFN-MW0028-047.5-20201029 **Lab ID: AD07357-02** **Sampled: 10/29/20 13:00** **Received: 10/30/20 14:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/12/20	11/09/20 00:00	11/09/20 12:16

Client ID: HMFN-MW0028-047.5-20201029 **Lab ID: AD07357-02RE1** **Sampled: 10/29/20 13:00** **Received: 10/30/20 14:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/12/20	11/09/20 00:00	11/09/20 18:27

Client ID: HMFN-DRUM220284-20201029 **Lab ID: AD07357-03** **Sampled: 10/29/20 14:00** **Received: 10/30/20 14:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/12/20	11/09/20 00:00	11/09/20 12:47

Client ID: HMFN-DRUM220284-20201029 **Lab ID: AD07357-03RE1** **Sampled: 10/29/20 14:00** **Received: 10/30/20 14:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/12/20	11/10/20 00:00	11/10/20 11:43

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0002-035.0-20201029 **Lab ID:** AD07357-01RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	440		13	62	ug/L	EPA 8260D	
Freon 113	2200		18	62	ug/L	EPA 8260D	
Trichloroethene	2000		22	62	ug/L	EPA 8260D	

Client ID: HMFN-MW0028-047.5-20201029 **Lab ID:** AD07357-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	9800		1100	5000	ug/L	EPA 8260D	
Freon 113	120000		1500	5000	ug/L	EPA 8260D	

Client ID: HMFN-MW0028-047.5-20201029 **Lab ID:** AD07357-02RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	400000		18000	50000	ug/L	EPA 8260D	

Client ID: HMFN-DRUM220284-20201029 **Lab ID:** AD07357-03

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	990		53	250	ug/L	EPA 8260D	
Freon 113	3500		73	250	ug/L	EPA 8260D	

Client ID: HMFN-DRUM220284-20201029 **Lab ID:** AD07357-03RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	14000		440	1200	ug/L	EPA 8260D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0002-035.0-20201029 **Lab Sample ID:** AD07357-01 **Received:** 10/30/20 14:25

Matrix: Ground Water **Sampled:** 10/29/20 12:00 **Work Order:** AD07357

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	20	U	ug/L	25	20	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	14	U	ug/L	25	14	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,1,2-Trichloroethane [79-00-5]^	19	U	ug/L	25	19	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,1-Dichloroethane [75-34-3]^	16	U	ug/L	25	16	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,1-Dichloroethene [75-35-4]^	24	U	ug/L	25	24	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	24	U	ug/L	25	24	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,2-Dibromoethane [106-93-4]^	20	U	ug/L	25	20	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,2-Dichlorobenzene [95-50-1]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,2-Dichloroethane [107-06-2]^	16	U	ug/L	25	16	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	20	U	ug/L	25	20	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,3-Dichlorobenzene [541-73-1]^	19	U	ug/L	25	19	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
1,4-Dichlorobenzene [106-46-7]^	19	U	ug/L	25	19	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Bromodichloromethane [75-27-4]^	13	U	ug/L	25	13	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Bromoform [75-25-2]^	19	U	ug/L	25	19	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Bromomethane [74-83-9]^	24	U	ug/L	25	24	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Carbon Tetrachloride [56-23-5]^	24	U	ug/L	25	24	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Chlorobenzene [108-90-7]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Chloroethane [75-00-3]^	24	U	ug/L	25	24	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Chloroform [67-66-3]^	20	U	ug/L	25	20	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Chloromethane [74-87-3]^	20	U	ug/L	25	20	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**440**		ug/L	25	13	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	15	U	ug/L	25	15	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Dibromochloromethane [124-48-1]^	12	U	ug/L	25	12	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Dichlorodifluoromethane [75-71-8]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	QV-01
Freon 113 [76-13-1]^	**2200**		ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Tetrachloroethene [127-18-4]^	19	U	ug/L	25	19	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
trans-1,2-Dichloroethene [156-60-5]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Trichloroethene [79-01-6]^	**2000**		ug/L	25	22	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Trichlorofluoromethane [75-69-4]^	24	U	ug/L	25	24	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	
Vinyl chloride [75-01-4]^	18	U	ug/L	25	18	62	0K09026	EPA 8260D	11/09/20 17:57	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*0K09026*	*EPA 8260D*	*11/09/20 17:57*	*KKW*	
Dibromofluoromethane	*60*	*1*	*50.0*	*119 %*	*53-146*	*0K09026*	*EPA 8260D*	*11/09/20 17:57*	*KKW*	
Toluene-d8	*54*	*1*	*50.0*	*107 %*	*41-146*	*0K09026*	*EPA 8260D*	*11/09/20 17:57*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0028-047.5-20201029 **Lab Sample ID:** AD07357-02 **Received:** 10/30/20 14:25

Matrix: Ground Water **Sampled:** 10/29/20 13:00 **Work Order:** AD07357

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	1600	U	ug/L	2000	1600	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	1100	U	ug/L	2000	1100	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,1,2-Trichloroethane [79-00-5]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,1-Dichloroethane [75-34-3]^	1200	U	ug/L	2000	1200	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,1-Dichloroethene [75-35-4]^	1900	U	ug/L	2000	1900	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1400	U	ug/L	2000	1400	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	1900	U	ug/L	2000	1900	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,2-Dibromoethane [106-93-4]^	1600	U	ug/L	2000	1600	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,2-Dichlorobenzene [95-50-1]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,2-Dichloroethane [107-06-2]^	1300	U	ug/L	2000	1300	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	1600	U	ug/L	2000	1600	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,3-Dichlorobenzene [541-73-1]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
1,4-Dichlorobenzene [106-46-7]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Bromodichloromethane [75-27-4]^	1000	U	ug/L	2000	1000	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Bromoform [75-25-2]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Bromomethane [74-83-9]^	1900	U	ug/L	2000	1900	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Carbon Tetrachloride [56-23-5]^	1900	U	ug/L	2000	1900	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Chlorobenzene [108-90-7]^	1400	U	ug/L	2000	1400	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Chloroethane [75-00-3]^	2000	U	ug/L	2000	2000	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Chloroform [67-66-3]^	1600	U	ug/L	2000	1600	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Chloromethane [74-87-3]^	1600	U	ug/L	2000	1600	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**9800**		ug/L	2000	1100	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1200	U	ug/L	2000	1200	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Dibromochloromethane [124-48-1]^	1000	U	ug/L	2000	1000	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Dichlorodifluoromethane [75-71-8]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	QV-01
Freon 113 [76-13-1]^	**120000**		ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Tetrachloroethene [127-18-4]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1500	U	ug/L	2000	1500	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Trichloroethene [79-01-6]^	**400000**		ug/L	20000	18000	50000	0K09026	EPA 8260D	11/09/20 18:27	KKW	
Trichlorofluoromethane [75-69-4]^	1900	U	ug/L	2000	1900	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	
Vinyl chloride [75-01-4]^	1400	U	ug/L	2000	1400	5000	0K09026	EPA 8260D	11/09/20 12:16	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*0K09026*	*EPA 8260D*	*11/09/20 12:16*	*KKW*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*0K09026*	*EPA 8260D*	*11/09/20 18:27*	*KKW*	
Dibromofluoromethane	*61*	*1*	*50.0*	*121 %*	*53-146*	*0K09026*	*EPA 8260D*	*11/09/20 12:16*	*KKW*	
Dibromofluoromethane	*61*	*1*	*50.0*	*122 %*	*53-146*	*0K09026*	*EPA 8260D*	*11/09/20 18:27*	*KKW*	
Toluene-d8	*55*	*1*	*50.0*	*109 %*	*41-146*	*0K09026*	*EPA 8260D*	*11/09/20 12:16*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0K09026*	*EPA 8260D*	*11/09/20 18:27*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-DRUM220284-20201029 **Lab Sample ID:** AD07357-03 **Received:** 10/30/20 14:25

Matrix: Ground Water **Sampled:** 10/29/20 14:00 **Work Order:** AD07357

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	QM-11
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**990**		ug/L	100	53	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Dibromochloromethane [124-48-1]^	50	U	ug/L	100	50	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	QV-01
Freon 113 [76-13-1]^	**3500**		ug/L	100	73	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Trichloroethene [79-01-6]^	**14000**		ug/L	500	440	1200	0K10012	EPA 8260D	11/10/20 11:43	KKW	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	
Vinyl chloride [75-01-4]^	71	U	ug/L	100	71	250	0K09026	EPA 8260D	11/09/20 12:47	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*0K09026*	*EPA 8260D*	*11/09/20 12:47*	*KKW*	
4-Bromofluorobenzene	*46*	*1*	*50.0*	*91 %*	*41-142*	*0K10012*	*EPA 8260D*	*11/10/20 11:43*	*KKW*	
Dibromofluoromethane	*58*	*1*	*50.0*	*116 %*	*53-146*	*0K09026*	*EPA 8260D*	*11/09/20 12:47*	*KKW*	
Dibromofluoromethane	*59*	*1*	*50.0*	*118 %*	*53-146*	*0K10012*	*EPA 8260D*	*11/10/20 11:43*	*KKW*	
Toluene-d8	*54*	*1*	*50.0*	*108 %*	*41-146*	*0K09026*	*EPA 8260D*	*11/09/20 12:47*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0K10012*	*EPA 8260D*	*11/10/20 11:43*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS

Blank (0K09026-BLK1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 10:39

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*106*	*41-142*			
Dibromofluoromethane	*57*			*ug/L*	*50.0*		*114*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

LCS (0K09026-BS1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 09:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0		114	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0		96	60-139			
1,1,2-Trichloroethane	19		2.5	ug/L	20.0		96	57-141			
1,1-Dichloroethane	19		2.5	ug/L	20.0		93	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		103	47-139			
1,2,4-Trichlorobenzene	30		2.5	ug/L	20.0		150	52-159			
1,2-Dibromo-3-chloropropane	21		2.5	ug/L	20.0		107	48-150			
1,2-Dibromoethane	20		2.5	ug/L	20.0		98	57-140			
1,2-Dichlorobenzene	22		2.5	ug/L	20.0		111	63-131			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS - Continued

LCS (0K09026-BS1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 09:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	25		2.5	ug/L	20.0		125	50-156			
1,2-Dichloropropane	18		2.5	ug/L	20.0		88	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0		106	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		107	65-133			
Bromodichloromethane	22		2.5	ug/L	20.0		109	58-135			
Bromoform	21		2.5	ug/L	20.0		105	46-148			
Bromomethane	18		2.5	ug/L	20.0		88	10-173			
Carbon Tetrachloride	24		2.5	ug/L	20.0		121	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		101	51-139			
Chloroethane	19		2.5	ug/L	20.0		93	27-180			
Chloroform	21		2.5	ug/L	20.0		104	58-139			
Chloromethane	15		2.5	ug/L	20.0		76	33-154			
cis-1,2-Dichloroethene	19		2.5	ug/L	20.0		93	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		98	64-128			
Dibromochloromethane	20		2.5	ug/L	20.0		100	50-140			
Dichlorodifluoromethane	20		2.5	ug/L	20.0		98	10-180			
Freon 113	22		2.5	ug/L	20.0		108	47-173			
Tetrachloroethene	18		2.5	ug/L	20.0		92	60-147			
trans-1,2-Dichloroethene	19		2.5	ug/L	20.0		96	54-134			
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0		110	65-149			
Trichloroethene	20		2.5	ug/L	20.0		99	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0		101	56-155			
Vinyl chloride	17		2.5	ug/L	20.0		85	20-167			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*111*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*112*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

Matrix Spike (0K09026-MS1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:18

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2700		250	ug/L	2000	80 U	133	57-148			
1,1,2,2-Tetrachloroethane	1900		250	ug/L	2000	54 U	97	60-139			
1,1,2-Trichloroethane	1800		250	ug/L	2000	76 U	91	57-141			
1,1-Dichloroethane	2200		250	ug/L	2000	62 U	111	57-142			
1,1-Dichloroethene	2500		250	ug/L	2000	94 U	123	47-139			
1,2,4-Trichlorobenzene	2600		250	ug/L	2000	70 U	128	52-159			
1,2-Dibromo-3-chloropropane	2000		250	ug/L	2000	96 U	100	48-150			QM-11
1,2-Dibromoethane	2000		250	ug/L	2000	78 U	99	57-140			
1,2-Dichlorobenzene	2200		250	ug/L	2000	73 U	112	63-131			
1,2-Dichloroethane	2800		250	ug/L	2000	63 U	139	50-156			
1,2-Dichloropropane	1800		250	ug/L	2000	80 U	89	61-133			
1,3-Dichlorobenzene	2300		250	ug/L	2000	77 U	114	66-129			
1,4-Dichlorobenzene	2300		250	ug/L	2000	76 U	113	65-133			
Bromodichloromethane	2500		250	ug/L	2000	52 U	126	58-135			
Bromoform	2300		250	ug/L	2000	75 U	116	46-148			
Bromomethane	2100		250	ug/L	2000	95 U	103	10-173			
Carbon Tetrachloride	2700		250	ug/L	2000	94 U	134	54-156			
Chlorobenzene	2100		250	ug/L	2000	72 U	106	51-139			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS - Continued

Matrix Spike (0K09026-MS1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:18

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	2300		250	ug/L	2000	98 U	116	27-180			
Chloroform	2500		250	ug/L	2000	80 U	125	58-139			
Chloromethane	1500		250	ug/L	2000	82 U	77	33-154			
cis-1,2-Dichloroethene	3200		250	ug/L	2000	990	113	56-128			
cis-1,3-Dichloropropene	2300		250	ug/L	2000	59 U	114	64-128			
Dibromochloromethane	2000		250	ug/L	2000	50 U	100	50-140			
Dichlorodifluoromethane	2200		250	ug/L	2000	74 U	111	10-180			
Freon 113	6000		250	ug/L	2000	3500	126	47-173			
Tetrachloroethene	2000		250	ug/L	2000	76 U	102	60-147			
trans-1,2-Dichloroethene	2200		250	ug/L	2000	73 U	110	54-134			
trans-1,3-Dichloropropene	2300		250	ug/L	2000	73 U	113	65-149			
Trichloroethene	17000	L	250	ug/L	2000	15000	101	62-135			
Trichlorofluoromethane	2600		250	ug/L	2000	94 U	128	56-155			
Vinyl chloride	1900		250	ug/L	2000	71 U	96	20-167			
4-Bromofluorobenzene	*5500*			*ug/L*	*5000*		*109*	*41-142*			
Dibromofluoromethane	*6000*			*ug/L*	*5000*		*120*	*53-146*			
Toluene-d8	*5400*			*ug/L*	*5000*		*108*	*41-146*			

Matrix Spike Dup (0K09026-MSD1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:49

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2700		250	ug/L	2000	80 U	135	57-148	2	25	
1,1,2,2-Tetrachloroethane	2100		250	ug/L	2000	54 U	103	60-139	6	17	
1,1,2-Trichloroethane	1900		250	ug/L	2000	76 U	96	57-141	5	16	
1,1-Dichloroethane	2000		250	ug/L	2000	62 U	102	57-142	8	24	
1,1-Dichloroethene	2500		250	ug/L	2000	94 U	123	47-139	0	16	
1,2,4-Trichlorobenzene	3100		250	ug/L	2000	70 U	154	52-159	18	24	
1,2-Dibromo-3-chloropropane	2600		250	ug/L	2000	96 U	129	48-150	25	21	QM-11
1,2-Dibromoethane	1900		250	ug/L	2000	78 U	97	57-140	2	16	
1,2-Dichlorobenzene	2400		250	ug/L	2000	73 U	119	63-131	6	25	
1,2-Dichloroethane	2700		250	ug/L	2000	63 U	135	50-156	3	18	
1,2-Dichloropropane	1900		250	ug/L	2000	80 U	95	61-133	7	26	
1,3-Dichlorobenzene	2300		250	ug/L	2000	77 U	114	66-129	0.04	23	
1,4-Dichlorobenzene	2300		250	ug/L	2000	76 U	113	65-133	0.4	23	
Bromodichloromethane	2600		250	ug/L	2000	52 U	130	58-135	4	19	
Bromoform	2100		250	ug/L	2000	75 U	103	46-148	12	18	
Bromomethane	2200		250	ug/L	2000	95 U	111	10-173	8	29	
Carbon Tetrachloride	2600		250	ug/L	2000	94 U	130	54-156	3	27	
Chlorobenzene	2200		250	ug/L	2000	72 U	108	51-139	2	13	
Chloroethane	2300		250	ug/L	2000	98 U	113	27-180	3	22	
Chloroform	2400		250	ug/L	2000	80 U	120	58-139	4	17	
Chloromethane	1500		250	ug/L	2000	82 U	74	33-154	4	31	
cis-1,2-Dichloroethene	3200		250	ug/L	2000	990	112	56-128	0.4	17	
cis-1,3-Dichloropropene	2300		250	ug/L	2000	59 U	115	64-128	1	20	
Dibromochloromethane	2000		250	ug/L	2000	50 U	100	50-140	0.4	18	
Dichlorodifluoromethane	2300		250	ug/L	2000	74 U	113	10-180	2	26	
Freon 113	5900		250	ug/L	2000	3500	118	47-173	3	30	
Tetrachloroethene	2100		250	ug/L	2000	76 U	105	60-147	3	21	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K09026-MSD1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:49

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	2200		250	ug/L	2000	73 U	109	54-134	0.9	20	
trans-1,3-Dichloropropene	2400		250	ug/L	2000	73 U	121	65-149	7	17	
Trichloroethene	17000	L	250	ug/L	2000	15000	121	62-135	2	20	
Trichlorofluoromethane	2600		250	ug/L	2000	94 U	128	56-155	0.2	22	
Vinyl chloride	2000		250	ug/L	2000	71 U	99	20-167	3	24	
4-Bromofluorobenzene	*5500*			*ug/L*	*5000*		*110*	*41-142*			
Dibromofluoromethane	*5800*			*ug/L*	*5000*		*115*	*53-146*			
Toluene-d8	*5500*			*ug/L*	*5000*		*111*	*41-146*			

Batch 0K10012 - EPA 5030B_MS

Blank (0K10012-BLK1) Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 10:33

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*94*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*115*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K10012 - EPA 5030B_MS - Continued

Blank (0K10012-BLK1) Continued Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 10:33

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

LCS (0K10012-BS1) Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 08:56

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	27		2.5	ug/L	20.0		133	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0		94	60-139			
1,1,2-Trichloroethane	17		2.5	ug/L	20.0		85	57-141			
1,1-Dichloroethane	22		2.5	ug/L	20.0		109	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		107	47-139			
1,2,4-Trichlorobenzene	20		2.5	ug/L	20.0		98	52-159			
1,2-Dibromo-3-chloropropane	20		2.5	ug/L	20.0		102	48-150			
1,2-Dibromoethane	17		2.5	ug/L	20.0		85	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0		98	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0		95	50-156			
1,2-Dichloropropane	19		2.5	ug/L	20.0		96	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		102	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		106	65-133			
Bromodichloromethane	20		2.5	ug/L	20.0		102	58-135			
Bromoform	17		2.5	ug/L	20.0		84	46-148			
Bromomethane	20		2.5	ug/L	20.0		102	10-173			
Carbon Tetrachloride	23		2.5	ug/L	20.0		117	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		99	51-139			
Chloroethane	42		2.5	ug/L	20.0		212	27-180			QL-02
Chloroform	24		2.5	ug/L	20.0		118	58-139			
Chloromethane	23		2.5	ug/L	20.0		116	33-154			
cis-1,2-Dichloroethene	23		2.5	ug/L	20.0		116	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0		94	64-128			
Dibromochloromethane	16		2.5	ug/L	20.0		80	50-140			
Dichlorodifluoromethane	23		2.5	ug/L	20.0		115	10-180			
Freon 113	23		2.5	ug/L	20.0		116	47-173			
Tetrachloroethene	17		2.5	ug/L	20.0		87	60-147			
trans-1,2-Dichloroethene	24		2.5	ug/L	20.0		118	54-134			
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0		89	65-149			
Trichloroethene	21		2.5	ug/L	20.0		104	62-135			
Trichlorofluoromethane	50		2.5	ug/L	20.0		250	56-155			QL-02
Vinyl chloride	35		2.5	ug/L	20.0		175	20-167			QL-02
4-Bromofluorobenzene	*41*	*I*		*ug/L*	*50.0*		*82*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*117*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*107*	*41-146*			

Matrix Spike (0K10012-MS1) Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 18:53

Source: AD07226-08

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	28		2.5	ug/L	20.0	0.80 U	140	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0	0.54 U	97	60-139			
1,1,2-Trichloroethane	18		2.5	ug/L	20.0	0.76 U	91	57-141			
1,1-Dichloroethane	23		2.5	ug/L	20.0	0.62 U	116	57-142			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K10012 - EPA 5030B_MS - Continued

Matrix Spike (0K10012-MS1) Continued Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 18:53

Source: AD07226-08

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	22		2.5	ug/L	20.0	0.94 U	111	47-139			
1,2,4-Trichlorobenzene	17		2.5	ug/L	20.0	0.70 U	83	52-159			
1,2-Dibromo-3-chloropropane	16		2.5	ug/L	20.0	0.96 U	82	48-150			
1,2-Dibromoethane	18		2.5	ug/L	20.0	0.78 U	89	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0	0.73 U	97	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	95	50-156			
1,2-Dichloropropane	19		2.5	ug/L	20.0	0.80 U	97	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0	0.77 U	102	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	106	65-133			
Bromodichloromethane	20		2.5	ug/L	20.0	0.52 U	102	58-135			
Bromoform	15		2.5	ug/L	20.0	0.75 U	77	46-148			
Bromomethane	22		2.5	ug/L	20.0	0.95 U	108	10-173			
Carbon Tetrachloride	24		2.5	ug/L	20.0	0.94 U	120	54-156			
Chlorobenzene	21		2.5	ug/L	20.0	0.72 U	103	51-139			
Chloroethane	49		2.5	ug/L	20.0	0.98 U	247	27-180			QM-19
Chloroform	24		2.5	ug/L	20.0	0.80 U	120	58-139			
Chloromethane	24		2.5	ug/L	20.0	0.82 U	122	33-154			
cis-1,2-Dichloroethene	24		2.5	ug/L	20.0	0.53 U	119	56-128			
cis-1,3-Dichloropropene	17		2.5	ug/L	20.0	0.59 U	86	64-128			
Dibromochloromethane	17		2.5	ug/L	20.0	0.50 U	83	50-140			
Dichlorodifluoromethane	24		2.5	ug/L	20.0	0.74 U	118	10-180			
Freon 113	24		2.5	ug/L	20.0	0.73 U	121	47-173			
Tetrachloroethene	18		2.5	ug/L	20.0	0.76 U	89	60-147			
trans-1,2-Dichloroethene	23		2.5	ug/L	20.0	0.73 U	117	54-134			
trans-1,3-Dichloropropene	17		2.5	ug/L	20.0	0.73 U	85	65-149			
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	110	62-135			
Trichlorofluoromethane	56		2.5	ug/L	20.0	0.94 U	281	56-155			QM-19
Vinyl chloride	33		2.5	ug/L	20.0	0.71 U	167	20-167			
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*85*	*41-142*			
Dibromofluoromethane	*59*			*ug/L*	*50.0*		*117*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Matrix Spike Dup (0K10012-MSD1) Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 19:22

Source: AD07226-08

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	28		2.5	ug/L	20.0	0.80 U	139	57-148	0.8	25	
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0	0.54 U	94	60-139	4	17	
1,1,2-Trichloroethane	18		2.5	ug/L	20.0	0.76 U	88	57-141	3	16	
1,1-Dichloroethane	23		2.5	ug/L	20.0	0.62 U	114	57-142	2	24	
1,1-Dichloroethene	23		2.5	ug/L	20.0	0.94 U	115	47-139	4	16	
1,2,4-Trichlorobenzene	18		2.5	ug/L	20.0	0.70 U	90	52-159	7	24	
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0	0.96 U	87	48-150	5	21	
1,2-Dibromoethane	17		2.5	ug/L	20.0	0.78 U	86	57-140	3	16	
1,2-Dichlorobenzene	20		2.5	ug/L	20.0	0.73 U	101	63-131	4	25	
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	97	50-156	3	18	
1,2-Dichloropropane	19		2.5	ug/L	20.0	0.80 U	97	61-133	0.6	26	
1,3-Dichlorobenzene	21		2.5	ug/L	20.0	0.77 U	103	66-129	0.5	23	
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	106	65-133	0.09	23	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K10012 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K10012-MSD1) Continued Prepared: 11/10/2020 00:00 Analyzed: 11/10/2020 19:22

Source: AD07226-08

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	20		2.5	ug/L	20.0	0.52 U	102	58-135	0.7	19	
Bromoform	15		2.5	ug/L	20.0	0.75 U	75	46-148	3	18	
Bromomethane	25		2.5	ug/L	20.0	0.95 U	126	10-173	15	29	
Carbon Tetrachloride	24		2.5	ug/L	20.0	0.94 U	120	54-156	0.2	27	
Chlorobenzene	20		2.5	ug/L	20.0	0.72 U	101	51-139	2	13	
Chloroethane	56		2.5	ug/L	20.0	0.98 U	282	27-180	13	22	QM-19
Chloroform	24		2.5	ug/L	20.0	0.80 U	120	58-139	0.6	17	
Chloromethane	24		2.5	ug/L	20.0	0.82 U	121	33-154	0.7	31	
cis-1,2-Dichloroethene	24		2.5	ug/L	20.0	0.53 U	121	56-128	2	17	
cis-1,3-Dichloropropene	17		2.5	ug/L	20.0	0.59 U	87	64-128	2	20	
Dibromochloromethane	16		2.5	ug/L	20.0	0.50 U	81	50-140	3	18	
Dichlorodifluoromethane	24		2.5	ug/L	20.0	0.74 U	119	10-180	0.2	26	
Freon 113	24		2.5	ug/L	20.0	0.73 U	121	47-173	0.6	30	
Tetrachloroethene	17		2.5	ug/L	20.0	0.76 U	86	60-147	3	21	
trans-1,2-Dichloroethene	24		2.5	ug/L	20.0	0.73 U	118	54-134	0.8	20	
trans-1,3-Dichloropropene	16		2.5	ug/L	20.0	0.73 U	82	65-149	3	17	
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	111	62-135	0.4	20	
Trichlorofluoromethane	55		2.5	ug/L	20.0	0.94 U	274	56-155	3	22	QM-19
Vinyl chloride	34		2.5	ug/L	20.0	0.71 U	172	20-167	3	24	QM-19
4-Bromofluorobenzene	*42*	*I*		*ug/L*	*50.0*		*84*	*41-142*			
Dibromofluoromethane	*59*			*ug/L*	*50.0*		*118*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

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FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
A-07	Analyte biased low in LCS but detected in the reporting limit standard. Since the analyte in the associated sample was not detected, there is no impact on data quality.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-19	The spike recovery was outside acceptance limits for the MS and/or MSD.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

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AD07357

Tetra Tech, Inc.

CHAIN OF CUSTODY | **NUMBER** No. 2146 | **PAGE** 1 **OF** 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	KSC-HMFN	Hook, Chris	912-926-8790	ENCO, Kaitlin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
		Bennett, Melissa	321-914-9394	
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☒ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: VOC	COMMENTS
									G	HCl		
10/28	1200	HMFN-MW0002-035.0-20201029	2	30	40	GW	G	3			X	
10/28	1300	HMFN-MW0028-047.5-20201029	28	45	50	GW	G	3			X	
10/28	1400	HMFN-DRUM220281-20201029	220281	—	—	GW	G	3			X	

1. RELINQUISHED BY		DATE 10-30-20	TIME 1425	1. RECEIVED BY		DATE 10/30/20	TIME 1425
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY		DATE	TIME
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY		DATE	TIME
COMMENTS							

Med-330 0.0°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Tuesday, November 10, 2020
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AD06931

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, October 28, 2020.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0040-042.5-20201026 **Lab ID: AD06931-01RE1** **Sampled: 10/26/20 13:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/03/20 13:49	11/04/20 01:47

Client ID: HMFN-MW0039-035.0-20201026 **Lab ID: AD06931-02RE1** **Sampled: 10/26/20 14:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/03/20 13:49	11/04/20 02:18

Client ID: HMFN-MW0043-035.0-20201026 **Lab ID: AD06931-03RE1** **Sampled: 10/26/20 14:35** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/04/20 14:52	11/04/20 23:16

Client ID: HMFN-MW0043-035.0-20201026 **Lab ID: AD06931-03RE2** **Sampled: 10/26/20 14:35** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/05/20 00:00	11/05/20 15:06

Client ID: HMFN-MW0044-042.5-20201026 **Lab ID: AD06931-04** **Sampled: 10/26/20 15:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/02/20 13:33	11/02/20 22:28

Client ID: HMFN-MW0044-042.5-20201026 **Lab ID: AD06931-04RE1** **Sampled: 10/26/20 15:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/03/20 13:49	11/04/20 02:49

Client ID: HMFN-MW0034-015.0-20201026 **Lab ID: AD06931-05RE1** **Sampled: 10/26/20 15:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/03/20 13:49	11/04/20 03:20

Client ID: HMFN-MW0034-015.0-20201026 **Lab ID: AD06931-05RE2** **Sampled: 10/26/20 15:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/04/20 14:52	11/04/20 23:47

Client ID: HMFN-MW0035-035.0-20201026 **Lab ID: AD06931-06RE1** **Sampled: 10/26/20 16:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/03/20 13:49	11/04/20 03:51

Client ID: HMFN-MW0035-035.0-20201026 **Lab ID: AD06931-06RE2** **Sampled: 10/26/20 16:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/09/20	11/04/20 14:52	11/05/20 00:18

Client ID: HMFN-MW0046-015.0-20201027 **Lab ID: AD06931-07RE1** **Sampled: 10/27/20 09:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/03/20 13:49	11/04/20 04:22

Client ID: HMFN-MW0047-025.0-20201027 **Lab ID: AD06931-08** **Sampled: 10/27/20 09:30** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/02/20 13:33	11/03/20 00:32

Client ID: HMFN-MW0037-010.0-20201027 **Lab ID: AD06931-09RE1** **Sampled: 10/27/20 10:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/03/20 13:49	11/04/20 04:53

Client ID: HMFN-MW0038-020.0-20201027 **Lab ID: AD06931-10RE1** **Sampled: 10/27/20 10:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/03/20 13:49	11/04/20 05:24

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0029-015.0-20201027 **Lab ID: AD06931-11RE1** **Sampled: 10/27/20 11:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/03/20 13:49	11/04/20 05:55

Client ID: HMFN-MW0030-025.0-20201027 **Lab ID: AD06931-12RE1** **Sampled: 10/27/20 11:50** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/04/20 14:52	11/05/20 00:49

Client ID: HMFN-MW0031-035.0-20201027 **Lab ID: AD06931-13RE1** **Sampled: 10/27/20 12:30** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/04/20 14:52	11/05/20 01:20

Client ID: HMFN-MW0032-042.5-20201027 **Lab ID: AD06931-14RE1** **Sampled: 10/27/20 13:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/05/20 00:00	11/05/20 15:35

Client ID: HMFN-MW0032-042.5-20201027 **Lab ID: AD06931-14RE2** **Sampled: 10/27/20 13:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/09/20 00:00	11/09/20 10:23

Client ID: HMFN-MW0033-047.5-20201027 **Lab ID: AD06931-15** **Sampled: 10/27/20 13:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/02/20 13:33	11/03/20 04:08

Client ID: HMFN-MW0033-047.5-20201027 **Lab ID: AD06931-15RE1** **Sampled: 10/27/20 13:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/09/20 00:00	11/09/20 11:14

Client ID: HMFN-MW0009-010.0-20201027 **Lab ID: AD06931-16RE1** **Sampled: 10/27/20 14:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/04/20 14:52	11/05/20 01:51

Client ID: HMFN-MW0008-025.0-20201027 **Lab ID: AD06931-17** **Sampled: 10/27/20 15:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/04/20 14:52	11/05/20 02:22

Client ID: HMFN-MW0008-025.0-20201027 **Lab ID: AD06931-17RE1** **Sampled: 10/27/20 15:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/10/20	11/05/20 00:00	11/05/20 16:04

Client ID: HMFN-MW0045-030.0-20201028 **Lab ID: AD06931-18** **Sampled: 10/28/20 08:45** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 02:52

Client ID: HMFN-MW0027-042.5-20201028 **Lab ID: AD06931-19** **Sampled: 10/28/20 09:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 03:23

Client ID: HMFN-MW0004-010.0-20201028 **Lab ID: AD06931-20** **Sampled: 10/28/20 10:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 03:54

Client ID: HMFN-MW0016-010.0-20201028 **Lab ID: AD06931-21** **Sampled: 10/28/20 10:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 04:25

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMFN-MW0016-010.0-20201028 **Lab ID: AD06931-21RE1** **Sampled: 10/28/20 10:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/05/20 00:00	11/05/20 16:33

Client ID: HMFN-MW0041-035.0-20201028 **Lab ID: AD06931-22** **Sampled: 10/28/20 11:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 04:56

Client ID: HMFN-MW0042-042.5-20201028. **Lab ID: AD06931-23** **Sampled: 10/28/20 12:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/04/20 22:45

Client ID: HMFN-MW0042-042.5-20201028. **Lab ID: AD06931-23RE1** **Sampled: 10/28/20 12:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/05/20 00:00	11/05/20 17:02

Client ID: HMFN-MW0036-015.0-20201028 **Lab ID: AD06931-24** **Sampled: 10/28/20 13:00** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 05:27

Client ID: HMFN-MW0011-025.0-20201028 **Lab ID: AD06931-25** **Sampled: 10/28/20 13:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 05:57

Client ID: HMFN-MW0011-025.0-20201028 **Lab ID: AD06931-25RE1** **Sampled: 10/28/20 13:40** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/05/20 00:00	11/05/20 17:30

Client ID: HMFN-MW0024-060.0-20201028 **Lab ID: AD06931-26** **Sampled: 10/28/20 14:20** **Received: 10/28/20 15:00**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	11/11/20	11/04/20 14:52	11/05/20 06:28

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SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0040-042.5-20201026 **Lab ID: AD06931-01RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	83		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.8	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	7.5		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	20		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0039-035.0-20201026 **Lab ID: AD06931-02RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	3300		26	120	ug/L	EPA 8260D	
Trichloroethene	290		44	120	ug/L	EPA 8260D	
Vinyl chloride	250		36	120	ug/L	EPA 8260D	

Client ID: HMFN-MW0043-035.0-20201026 **Lab ID: AD06931-03RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	85		1.1	5.0	ug/L	EPA 8260D	

Client ID: HMFN-MW0043-035.0-20201026 **Lab ID: AD06931-03RE2**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	26		0.73	2.5	ug/L	EPA 8260D	QV-01
Trichloroethene	29		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0044-042.5-20201026 **Lab ID: AD06931-04**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	15000		730	2500	ug/L	EPA 8260D	

Client ID: HMFN-MW0044-042.5-20201026 **Lab ID: AD06931-04RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	780		110	500	ug/L	EPA 8260D	
Trichloroethene	510		180	500	ug/L	EPA 8260D	

Client ID: HMFN-MW0034-015.0-20201026 **Lab ID: AD06931-05RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	74		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.4	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	13		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	8.9		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0034-015.0-20201026 **Lab ID: AD06931-05RE2**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	3.0		0.73	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0035-035.0-20201026 **Lab ID: AD06931-06RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	240		2.6	12	ug/L	EPA 8260D	

Client ID: HMFN-MW0035-035.0-20201026 **Lab ID: AD06931-06RE2**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	1.2	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	6.5		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	14		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0046-015.0-20201027 **Lab ID: AD06931-07RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	6.8		0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	51		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	37		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0047-025.0-20201027 **Lab ID: AD06931-08**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	15		1.6	6.2	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	17		1.3	6.2	ug/L	EPA 8260D	
Vinyl chloride	150		1.8	6.2	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0037-010.0-20201027 **Lab ID:** AD06931-09RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	18		0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	5.4		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.4	I	0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	23		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0038-020.0-20201027 **Lab ID:** AD06931-10RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	23		0.62	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.7	I	0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	74		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0029-015.0-20201027 **Lab ID:** AD06931-11RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	310		2.6	12	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	5.1	I	3.6	12	ug/L	EPA 8260D	
Trichloroethene	66		4.4	12	ug/L	EPA 8260D	
Vinyl chloride	22		3.6	12	ug/L	EPA 8260D	

Client ID: HMFN-MW0030-025.0-20201027 **Lab ID:** AD06931-12RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	450		2.6	12	ug/L	EPA 8260D	
Freon 113	15		3.6	12	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	4.0	I	3.6	12	ug/L	EPA 8260D	
Trichloroethene	180		4.4	12	ug/L	EPA 8260D	
Vinyl chloride	18		3.6	12	ug/L	EPA 8260D	

Client ID: HMFN-MW0031-035.0-20201027 **Lab ID:** AD06931-13RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	1600		11	50	ug/L	EPA 8260D	
Trichloroethene	1100		18	50	ug/L	EPA 8260D	
Vinyl chloride	54		14	50	ug/L	EPA 8260D	

Client ID: HMFN-MW0032-042.5-20201027 **Lab ID:** AD06931-14RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	12000		110	500	ug/L	EPA 8260D	
Trichloroethene	14000		180	500	ug/L	EPA 8260D	

Client ID: HMFN-MW0032-042.5-20201027 **Lab ID:** AD06931-14RE2

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	430	I	140	500	ug/L	EPA 8260D	

Client ID: HMFN-MW0033-047.5-20201027 **Lab ID:** AD06931-15

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	22000		890	2500	ug/L	EPA 8260D	

Client ID: HMFN-MW0033-047.5-20201027 **Lab ID:** AD06931-15RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	24000		130	620	ug/L	EPA 8260D	
Vinyl chloride	950		180	620	ug/L	EPA 8260D	

Client ID: HMFN-MW0009-010.0-20201027 **Lab ID:** AD06931-16RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	640		5.3	25	ug/L	EPA 8260D	
Trichloroethene	190		8.9	25	ug/L	EPA 8260D	
Vinyl chloride	88		7.1	25	ug/L	EPA 8260D	

Client ID: HMFN-MW0008-025.0-20201027 **Lab ID:** AD06931-17

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	12		0.73	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	2.9		0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	60		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	12		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0008-025.0-20201027 **Lab ID:** AD06931-17RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	330		5.3	25	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMFN-MW0045-030.0-20201028 **Lab ID: AD06931-18**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	34		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.7	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	2.3	I	0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	23		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0027-042.5-20201028 **Lab ID: AD06931-19**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2100	I	530	2500	ug/L	EPA 8260D	
Freon 113	23000		730	2500	ug/L	EPA 8260D	
Trichloroethene	65000		890	2500	ug/L	EPA 8260D	

Client ID: HMFN-MW0004-010.0-20201028 **Lab ID: AD06931-20**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	36		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	2.7		0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	46		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.9	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0016-010.0-20201028 **Lab ID: AD06931-21**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	6.9		0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	17		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0016-010.0-20201028 **Lab ID: AD06931-21RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	190		2.6	12	ug/L	EPA 8260D	

Client ID: HMFN-MW0041-035.0-20201028 **Lab ID: AD06931-22**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	55		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	0.75	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	26		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	17		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0042-042.5-20201028. **Lab ID: AD06931-23**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2100		26	120	ug/L	EPA 8260D	
Vinyl chloride	550		36	120	ug/L	EPA 8260D	

Client ID: HMFN-MW0042-042.5-20201028. **Lab ID: AD06931-23RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	600		18	50	ug/L	EPA 8260D	

Client ID: HMFN-MW0036-015.0-20201028 **Lab ID: AD06931-24**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	2.4	I	0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	56		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	3.3		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMFN-MW0011-025.0-20201028 **Lab ID: AD06931-25**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	430		5.3	25	ug/L	EPA 8260D	
Vinyl chloride	140		7.1	25	ug/L	EPA 8260D	

Client ID: HMFN-MW0011-025.0-20201028 **Lab ID: AD06931-25RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	25		3.1	12	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	6.8	I	3.6	12	ug/L	EPA 8260D	

Client ID: HMFN-MW0024-060.0-20201028 **Lab ID: AD06931-26**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	0.76	I	0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	1.1	I	0.89	2.5	ug/L	EPA 8260D	

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ANALYTICAL RESULTS

Description: HMFN-MW0040-042.5-20201026 **Lab Sample ID:** AD06931-01 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/26/20 13:40 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	QV-01
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**83**		ug/L	1	0.53	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.8**	I	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Trichloroethene [79-01-6]^	**7.5**		ug/L	1	0.89	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	QV-01
Vinyl chloride [75-01-4]^	**20**		ug/L	1	0.71	2.5	0K03050	EPA 8260D	11/04/20 01:47	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*111 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 01:47*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*101 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 01:47*	*KKW*	
Toluene-d8	*49*	*1*	*50.0*	*99 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 01:47*	*KKW*	

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ANALYTICAL RESULTS

Description: HMFN-MW0039-035.0-20201026 **Lab Sample ID:** AD06931-02 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/26/20 14:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Bromoform [75-25-2]^	38	U	ug/L	50	38	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	QV-01
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Chloroform [67-66-3]^	40	U	ug/L	50	40	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**3300**		ug/L	50	26	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Dibromochloromethane [124-48-1]^	25	U	ug/L	50	25	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	QV-01
Freon 113 [76-13-1]^	36	U	ug/L	50	36	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Trichloroethene [79-01-6]^	**290**		ug/L	50	44	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	QV-01
Vinyl chloride [75-01-4]^	**250**		ug/L	50	36	120	0K03050	EPA 8260D	11/04/20 02:18	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*56*	*1*	*50.0*	*111 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 02:18*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 02:18*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 02:18*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0043-035.0-20201026 **Lab Sample ID:** AD06931-03 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/26/20 14:35 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	QV-01
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	QL-02, QV-01
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**85**		ug/L	2	1.1	5.0	0K04062	EPA 8260D	11/04/20 23:16	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Freon 113 [76-13-1]^	**26**		ug/L	1	0.73	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Trichloroethene [79-01-6]^	**29**		ug/L	1	0.89	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	QL-02, QV-01
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	0K05012	EPA 8260D	11/05/20 15:06	KKW	QV-01

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*45*	*1*	*50.0*	*90 %*	*41-142*	*0K05012*	*EPA 8260D*	*11/05/20 15:06*	*KKW*	
Dibromofluoromethane	*58*	*1*	*50.0*	*115 %*	*53-146*	*0K05012*	*EPA 8260D*	*11/05/20 15:06*	*KKW*	
Toluene-d8	*57*	*1*	*50.0*	*113 %*	*41-146*	*0K05012*	*EPA 8260D*	*11/05/20 15:06*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0044-042.5-20201026 **Lab Sample ID:** AD06931-04 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/26/20 15:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Bromoform [75-25-2]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	QV-01
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Chloroform [67-66-3]^	160	U	ug/L	200	160	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**780**		ug/L	200	110	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Dibromochloromethane [124-48-1]^	100	U	ug/L	200	100	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	QV-01
Freon 113 [76-13-1]^	**15000**		ug/L	1000	730	2500	0K02036	EPA 8260D	11/02/20 22:28	KKW	
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Trichloroethene [79-01-6]^	**510**		ug/L	200	180	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	QV-01
Vinyl chloride [75-01-4]^	140	U	ug/L	200	140	500	0K03050	EPA 8260D	11/04/20 02:49	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*0K02036*	*EPA 8260D*	*11/02/20 22:28*	*KKW*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 02:49*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*0K02036*	*EPA 8260D*	*11/02/20 22:28*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 02:49*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*107 %*	*41-146*	*0K02036*	*EPA 8260D*	*11/02/20 22:28*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 02:49*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0034-015.0-20201026 **Lab Sample ID:** AD06931-05 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/26/20 15:40 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	QV-01
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**74**		ug/L	1	0.53	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	QV-01
Freon 113 [76-13-1]^	**3.0**		ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/04/20 23:47	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.4**	I	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Trichloroethene [79-01-6]^	**13**		ug/L	1	0.89	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	QV-01
Vinyl chloride [75-01-4]^	**8.9**		ug/L	1	0.71	2.5	0K03050	EPA 8260D	11/04/20 03:20	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*111 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 03:20*	*KKW*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/04/20 23:47*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 03:20*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/04/20 23:47*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 03:20*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/04/20 23:47*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0035-035.0-20201026 **Lab Sample ID:** AD06931-06 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/26/20 16:20 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**240**		ug/L	5	2.6	12	0K03050	EPA 8260D	11/04/20 03:51	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.2**	I	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Trichloroethene [79-01-6]^	**6.5**		ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	
Vinyl chloride [75-01-4]^	**14**		ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 00:18	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 03:51*	*KKW*	
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 00:18*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 03:51*	*KKW*	
Dibromofluoromethane	*56*	*1*	*50.0*	*112 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 00:18*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*101 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 03:51*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 00:18*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0046-015.0-20201027 **Lab Sample ID:** AD06931-07 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 09:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,1-Dichloroethane [75-34-3]^	**6.8**		ug/L	1	0.62	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	QV-01
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**51**		ug/L	1	0.53	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	QV-01
Vinyl chloride [75-01-4]^	**37**		ug/L	1	0.71	2.5	0K03050	EPA 8260D	11/04/20 04:22	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 04:22*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 04:22*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 04:22*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0047-025.0-20201027 **Lab Sample ID:** AD06931-08 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 09:30 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.0	U	ug/L	2.5	2.0	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	QV-01
1,1,2,2-Tetrachloroethane [79-34-5]^	1.4	U	ug/L	2.5	1.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,1,2-Trichloroethane [79-00-5]^	1.9	U	ug/L	2.5	1.9	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,1-Dichloroethane [75-34-3]^	**15**		ug/L	2.5	1.6	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,1-Dichloroethene [75-35-4]^	2.4	U	ug/L	2.5	2.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	2.4	U	ug/L	2.5	2.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,2-Dibromoethane [106-93-4]^	2.0	U	ug/L	2.5	2.0	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,2-Dichlorobenzene [95-50-1]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,2-Dichloroethane [107-06-2]^	1.6	U	ug/L	2.5	1.6	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	2.0	U	ug/L	2.5	2.0	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,3-Dichlorobenzene [541-73-1]^	1.9	U	ug/L	2.5	1.9	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
1,4-Dichlorobenzene [106-46-7]^	1.9	U	ug/L	2.5	1.9	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Bromodichloromethane [75-27-4]^	1.3	U	ug/L	2.5	1.3	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	QV-01
Bromoform [75-25-2]^	1.9	U	ug/L	2.5	1.9	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Bromomethane [74-83-9]^	2.4	U	ug/L	2.5	2.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Carbon Tetrachloride [56-23-5]^	2.4	U	ug/L	2.5	2.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Chlorobenzene [108-90-7]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Chloroethane [75-00-3]^	2.4	U	ug/L	2.5	2.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Chloroform [67-66-3]^	2.0	U	ug/L	2.5	2.0	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Chloromethane [74-87-3]^	2.0	U	ug/L	2.5	2.0	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**17**		ug/L	2.5	1.3	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1.5	U	ug/L	2.5	1.5	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Dibromochloromethane [124-48-1]^	1.2	U	ug/L	2.5	1.2	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Dichlorodifluoromethane [75-71-8]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	QV-01
Freon 113 [76-13-1]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Tetrachloroethene [127-18-4]^	1.9	U	ug/L	2.5	1.9	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1.8	U	ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Trichloroethene [79-01-6]^	2.2	U	ug/L	2.5	2.2	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Trichlorofluoromethane [75-69-4]^	2.4	U	ug/L	2.5	2.4	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	
Vinyl chloride [75-01-4]^	**150**		ug/L	2.5	1.8	6.2	0K02036	EPA 8260D	11/03/20 00:32	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*0K02036*	*EPA 8260D*	*11/03/20 00:32*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*0K02036*	*EPA 8260D*	*11/03/20 00:32*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*0K02036*	*EPA 8260D*	*11/03/20 00:32*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0037-010.0-20201027 **Lab Sample ID:** AD06931-09 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 10:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,1-Dichloroethane [75-34-3]^	**18**		ug/L	1	0.62	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	QV-01
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**5.4**		ug/L	1	0.53	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.4**	I	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	QV-01
Vinyl chloride [75-01-4]^	**23**		ug/L	1	0.71	2.5	0K03050	EPA 8260D	11/04/20 04:53	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*107 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 04:53*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 04:53*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 04:53*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0038-020.0-20201027 **Lab Sample ID:** AD06931-10 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 10:40 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,1-Dichloroethane [75-34-3]^	**23**		ug/L	1	0.62	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	QV-01
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.7**	I	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	QV-01
Vinyl chloride [75-01-4]^	**74**		ug/L	1	0.71	2.5	0K03050	EPA 8260D	11/04/20 05:24	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 05:24*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 05:24*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 05:24*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0029-015.0-20201027 **Lab Sample ID:** AD06931-11 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 11:20 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,1-Dichloroethane [75-34-3]^	3.1	U	ug/L	5	3.1	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	QV-01
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**310**		ug/L	5	2.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Dibromochloromethane [124-48-1]^	2.5	U	ug/L	5	2.5	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	QV-01
Freon 113 [76-13-1]^	3.6	U	ug/L	5	3.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**5.1**	I	ug/L	5	3.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Trichloroethene [79-01-6]^	**66**		ug/L	5	4.4	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	QV-01
Vinyl chloride [75-01-4]^	**22**		ug/L	5	3.6	12	0K03050	EPA 8260D	11/04/20 05:55	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*110*	*1*	*100*	*110 %*	*41-142*	*0K03050*	*EPA 8260D*	*11/04/20 05:55*	*KKW*	
Dibromofluoromethane	*110*	*1*	*100*	*111 %*	*53-146*	*0K03050*	*EPA 8260D*	*11/04/20 05:55*	*KKW*	
Toluene-d8	*110*	*1*	*100*	*106 %*	*41-146*	*0K03050*	*EPA 8260D*	*11/04/20 05:55*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0030-025.0-20201027 **Lab Sample ID:** AD06931-12 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 11:50 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,1-Dichloroethane [75-34-3]^	3.1	U	ug/L	5	3.1	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**450**		ug/L	5	2.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Dibromochloromethane [124-48-1]^	2.5	U	ug/L	5	2.5	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	QV-01
Freon 113 [76-13-1]^	**15**		ug/L	5	3.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**4.0**	I	ug/L	5	3.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Trichloroethene [79-01-6]^	**180**		ug/L	5	4.4	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	
Vinyl chloride [75-01-4]^	**18**		ug/L	5	3.6	12	0K04062	EPA 8260D	11/05/20 00:49	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 00:49*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 00:49*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 00:49*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0031-035.0-20201027 **Lab Sample ID:** AD06931-13 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 12:30 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	16	U	ug/L	20	16	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	11	U	ug/L	20	11	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,1,2-Trichloroethane [79-00-5]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,1-Dichloroethane [75-34-3]^	12	U	ug/L	20	12	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,1-Dichloroethene [75-35-4]^	19	U	ug/L	20	19	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	14	U	ug/L	20	14	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	19	U	ug/L	20	19	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,2-Dibromoethane [106-93-4]^	16	U	ug/L	20	16	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,2-Dichlorobenzene [95-50-1]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,2-Dichloroethane [107-06-2]^	13	U	ug/L	20	13	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	16	U	ug/L	20	16	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,3-Dichlorobenzene [541-73-1]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
1,4-Dichlorobenzene [106-46-7]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Bromodichloromethane [75-27-4]^	10	U	ug/L	20	10	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Bromoform [75-25-2]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Bromomethane [74-83-9]^	19	U	ug/L	20	19	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	19	U	ug/L	20	19	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Chlorobenzene [108-90-7]^	14	U	ug/L	20	14	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Chloroethane [75-00-3]^	20	U	ug/L	20	20	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Chloroform [67-66-3]^	16	U	ug/L	20	16	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Chloromethane [74-87-3]^	16	U	ug/L	20	16	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**1600**		ug/L	20	11	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	12	U	ug/L	20	12	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Dibromochloromethane [124-48-1]^	10	U	ug/L	20	10	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Dichlorodifluoromethane [75-71-8]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	QV-01
Freon 113 [76-13-1]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Tetrachloroethene [127-18-4]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
trans-1,2-Dichloroethene [156-60-5]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	15	U	ug/L	20	15	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Trichloroethene [79-01-6]^	**1100**		ug/L	20	18	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Trichlorofluoromethane [75-69-4]^	19	U	ug/L	20	19	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	
Vinyl chloride [75-01-4]^	**54**		ug/L	20	14	50	0K04062	EPA 8260D	11/05/20 01:20	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*52*	*1*	*50.0*	*105 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 01:20*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 01:20*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 01:20*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0032-042.5-20201027 **Lab Sample ID:** AD06931-14 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 13:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	QV-01
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Bromoform [75-25-2]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	QL-02, QV-01
Chloroform [67-66-3]^	160	U	ug/L	200	160	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**12000**		ug/L	200	110	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Dibromochloromethane [124-48-1]^	100	U	ug/L	200	100	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Freon 113 [76-13-1]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	QV-01
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Trichloroethene [79-01-6]^	**14000**		ug/L	200	180	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	500	0K05012	EPA 8260D	11/05/20 15:35	KKW	QL-02, QV-01
Vinyl chloride [75-01-4]^	**430**	I	ug/L	200	140	500	0K09025	EPA 8260D	11/09/20 10:23	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*45*	*1*	*50.0*	*89 %*	*41-142*	*0K05012*	*EPA 8260D*	*11/05/20 15:35*	*KKW*	
4-Bromofluorobenzene	*46*	*1*	*50.0*	*92 %*	*41-142*	*0K09025*	*EPA 8260D*	*11/09/20 10:23*	*KKW*	
Dibromofluoromethane	*60*	*1*	*50.0*	*119 %*	*53-146*	*0K05012*	*EPA 8260D*	*11/05/20 15:35*	*KKW*	
Dibromofluoromethane	*56*	*1*	*50.0*	*112 %*	*53-146*	*0K09025*	*EPA 8260D*	*11/09/20 10:23*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*105 %*	*41-146*	*0K05012*	*EPA 8260D*	*11/05/20 15:35*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*105 %*	*41-146*	*0K09025*	*EPA 8260D*	*11/09/20 10:23*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0033-047.5-20201027 **Lab Sample ID:** AD06931-15 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 13:40 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	200	U	ug/L	250	200	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	140	U	ug/L	250	140	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,1,2-Trichloroethane [79-00-5]^	190	U	ug/L	250	190	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,1-Dichloroethane [75-34-3]^	160	U	ug/L	250	160	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,1-Dichloroethene [75-35-4]^	240	U	ug/L	250	240	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	240	U	ug/L	250	240	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,2-Dibromoethane [106-93-4]^	200	U	ug/L	250	200	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,2-Dichlorobenzene [95-50-1]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,2-Dichloroethane [107-06-2]^	160	U	ug/L	250	160	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	200	U	ug/L	250	200	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,3-Dichlorobenzene [541-73-1]^	190	U	ug/L	250	190	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
1,4-Dichlorobenzene [106-46-7]^	190	U	ug/L	250	190	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Bromodichloromethane [75-27-4]^	130	U	ug/L	250	130	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Bromoform [75-25-2]^	190	U	ug/L	250	190	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Bromomethane [74-83-9]^	240	U	ug/L	250	240	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Carbon Tetrachloride [56-23-5]^	240	U	ug/L	250	240	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Chlorobenzene [108-90-7]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Chloroethane [75-00-3]^	240	U	ug/L	250	240	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Chloroform [67-66-3]^	200	U	ug/L	250	200	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Chloromethane [74-87-3]^	200	U	ug/L	250	200	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**24000**		ug/L	250	130	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	150	U	ug/L	250	150	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Dibromochloromethane [124-48-1]^	120	U	ug/L	250	120	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Dichlorodifluoromethane [75-71-8]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	QV-01
Freon 113 [76-13-1]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Tetrachloroethene [127-18-4]^	190	U	ug/L	250	190	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
trans-1,2-Dichloroethene [156-60-5]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	180	U	ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Trichloroethene [79-01-6]^	**22000**		ug/L	1000	890	2500	0K02036	EPA 8260D	11/03/20 04:08	KKW	
Trichlorofluoromethane [75-69-4]^	240	U	ug/L	250	240	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	
Vinyl chloride [75-01-4]^	**950**		ug/L	250	180	620	0K09026	EPA 8260D	11/09/20 11:14	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*56*	*1*	*50.0*	*112 %*	*41-142*	*0K02036*	*EPA 8260D*	*11/03/20 04:08*	*KKW*	
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*0K09026*	*EPA 8260D*	*11/09/20 11:14*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*0K02036*	*EPA 8260D*	*11/03/20 04:08*	*KKW*	
Dibromofluoromethane	*57*	*1*	*50.0*	*113 %*	*53-146*	*0K09026*	*EPA 8260D*	*11/09/20 11:14*	*KKW*	
Toluene-d8	*54*	*1*	*50.0*	*108 %*	*41-146*	*0K02036*	*EPA 8260D*	*11/03/20 04:08*	*KKW*	
Toluene-d8	*55*	*1*	*50.0*	*110 %*	*41-146*	*0K09026*	*EPA 8260D*	*11/09/20 11:14*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0009-010.0-20201027 **Lab Sample ID:** AD06931-16 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 14:20 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**640**		ug/L	10	5.3	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	QV-01
Freon 113 [76-13-1]^	7.3	U	ug/L	10	7.3	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Trichloroethene [79-01-6]^	**190**		ug/L	10	8.9	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	
Vinyl chloride [75-01-4]^	**88**		ug/L	10	7.1	25	0K04062	EPA 8260D	11/05/20 01:51	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 01:51*	*KKW*	
Dibromofluoromethane	*58*	*1*	*50.0*	*115 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 01:51*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 01:51*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0008-025.0-20201027 **Lab Sample ID:** AD06931-17 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/27/20 15:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**330**		ug/L	10	5.3	25	0K05012	EPA 8260D	11/05/20 16:04	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	QV-01
Freon 113 [76-13-1]^	**12**		ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**2.9**		ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Trichloroethene [79-01-6]^	**60**		ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	
Vinyl chloride [75-01-4]^	**12**		ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 02:22	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 02:22*	*KKW*	
4-Bromofluorobenzene	*46*	*1*	*50.0*	*91 %*	*41-142*	*0K05012*	*EPA 8260D*	*11/05/20 16:04*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 02:22*	*KKW*	
Dibromofluoromethane	*59*	*1*	*50.0*	*118 %*	*53-146*	*0K05012*	*EPA 8260D*	*11/05/20 16:04*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*105 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 02:22*	*KKW*	
Toluene-d8	*54*	*1*	*50.0*	*107 %*	*41-146*	*0K05012*	*EPA 8260D*	*11/05/20 16:04*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0045-030.0-20201028 **Lab Sample ID:** AD06931-18 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 08:45 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**34**		ug/L	1	0.53	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.7**	I	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Trichloroethene [79-01-6]^	**2.3**	I	ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	
Vinyl chloride [75-01-4]^	**23**		ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 02:52	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 02:52*	*KKW*	
Dibromofluoromethane	*58*	*1*	*50.0*	*115 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 02:52*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 02:52*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0027-042.5-20201028 **Lab Sample ID:** AD06931-19 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 09:20 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	800	U	ug/L	1000	800	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	540	U	ug/L	1000	540	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,1,2-Trichloroethane [79-00-5]^	760	U	ug/L	1000	760	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,1-Dichloroethane [75-34-3]^	620	U	ug/L	1000	620	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,1-Dichloroethene [75-35-4]^	940	U	ug/L	1000	940	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	700	U	ug/L	1000	700	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	960	U	ug/L	1000	960	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,2-Dibromoethane [106-93-4]^	780	U	ug/L	1000	780	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,2-Dichlorobenzene [95-50-1]^	730	U	ug/L	1000	730	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,2-Dichloroethane [107-06-2]^	630	U	ug/L	1000	630	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	800	U	ug/L	1000	800	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,3-Dichlorobenzene [541-73-1]^	770	U	ug/L	1000	770	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
1,4-Dichlorobenzene [106-46-7]^	760	U	ug/L	1000	760	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Bromodichloromethane [75-27-4]^	520	U	ug/L	1000	520	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Bromoform [75-25-2]^	750	U	ug/L	1000	750	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Bromomethane [74-83-9]^	950	U	ug/L	1000	950	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	940	U	ug/L	1000	940	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Chlorobenzene [108-90-7]^	720	U	ug/L	1000	720	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Chloroethane [75-00-3]^	980	U	ug/L	1000	980	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Chloroform [67-66-3]^	800	U	ug/L	1000	800	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Chloromethane [74-87-3]^	820	U	ug/L	1000	820	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2100**	I	ug/L	1000	530	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	590	U	ug/L	1000	590	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Dibromochloromethane [124-48-1]^	500	U	ug/L	1000	500	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Dichlorodifluoromethane [75-71-8]^	740	U	ug/L	1000	740	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	QV-01
Freon 113 [76-13-1]^	**23000**		ug/L	1000	730	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Tetrachloroethene [127-18-4]^	760	U	ug/L	1000	760	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
trans-1,2-Dichloroethene [156-60-5]^	730	U	ug/L	1000	730	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	730	U	ug/L	1000	730	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Trichloroethene [79-01-6]^	**65000**		ug/L	1000	890	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Trichlorofluoromethane [75-69-4]^	940	U	ug/L	1000	940	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	
Vinyl chloride [75-01-4]^	710	U	ug/L	1000	710	2500	0K04062	EPA 8260D	11/05/20 03:23	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 03:23*	*KKW*	
Dibromofluoromethane	*57*	*1*	*50.0*	*114 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 03:23*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 03:23*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0004-010.0-20201028 **Lab Sample ID:** AD06931-20 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 10:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**36**		ug/L	1	0.53	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**2.7**		ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Trichloroethene [79-01-6]^	**46**		ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	
Vinyl chloride [75-01-4]^	**1.9**	I	ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 03:54	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 03:54*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 03:54*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 03:54*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0016-010.0-20201028 **Lab Sample ID:** AD06931-21 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 10:40 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**190**		ug/L	5	2.6	12	0K05012	EPA 8260D	11/05/20 16:33	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**6.9**		ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	
Vinyl chloride [75-01-4]^	**17**		ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 04:25	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 04:25*	*KKW*	
4-Bromofluorobenzene	*46*	*1*	*50.0*	*93 %*	*41-142*	*0K05012*	*EPA 8260D*	*11/05/20 16:33*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*111 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 04:25*	*KKW*	
Dibromofluoromethane	*60*	*1*	*50.0*	*119 %*	*53-146*	*0K05012*	*EPA 8260D*	*11/05/20 16:33*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 04:25*	*KKW*	
Toluene-d8	*56*	*1*	*50.0*	*113 %*	*41-146*	*0K05012*	*EPA 8260D*	*11/05/20 16:33*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0041-035.0-20201028 **Lab Sample ID:** AD06931-22 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 11:20 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**55**		ug/L	1	0.53	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**0.75**	I	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Trichloroethene [79-01-6]^	**26**		ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	
Vinyl chloride [75-01-4]^	**17**		ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 04:56	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*107 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 04:56*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 04:56*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 04:56*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0042-042.5-20201028. **Lab Sample ID:** AD06931-23 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 12:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	16	U	ug/L	20	16	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	QV-01
1,1,2,2-Tetrachloroethane [79-34-5]^	11	U	ug/L	20	11	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,1,2-Trichloroethane [79-00-5]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,1-Dichloroethane [75-34-3]^	12	U	ug/L	20	12	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,1-Dichloroethene [75-35-4]^	19	U	ug/L	20	19	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	14	U	ug/L	20	14	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	19	U	ug/L	20	19	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,2-Dibromoethane [106-93-4]^	16	U	ug/L	20	16	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,2-Dichlorobenzene [95-50-1]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,2-Dichloroethane [107-06-2]^	13	U	ug/L	20	13	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,2-Dichloropropane [78-87-5]^	16	U	ug/L	20	16	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,3-Dichlorobenzene [541-73-1]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
1,4-Dichlorobenzene [106-46-7]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Bromodichloromethane [75-27-4]^	10	U	ug/L	20	10	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Bromoform [75-25-2]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Bromomethane [74-83-9]^	19	U	ug/L	20	19	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	19	U	ug/L	20	19	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Chlorobenzene [108-90-7]^	14	U	ug/L	20	14	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Chloroethane [75-00-3]^	20	U	ug/L	20	20	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	QL-02, QV-01
Chloroform [67-66-3]^	16	U	ug/L	20	16	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Chloromethane [74-87-3]^	16	U	ug/L	20	16	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2100**		ug/L	50	26	120	0K04062	EPA 8260D	11/04/20 22:45	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	12	U	ug/L	20	12	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Dibromochloromethane [124-48-1]^	10	U	ug/L	20	10	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Dichlorodifluoromethane [75-71-8]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Freon 113 [76-13-1]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	QV-01
Tetrachloroethene [127-18-4]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
trans-1,2-Dichloroethene [156-60-5]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	15	U	ug/L	20	15	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Trichloroethene [79-01-6]^	**600**		ug/L	20	18	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	
Trichlorofluoromethane [75-69-4]^	19	U	ug/L	20	19	50	0K05012	EPA 8260D	11/05/20 17:02	KKW	QL-02, QV-01
Vinyl chloride [75-01-4]^	**550**		ug/L	50	36	120	0K04062	EPA 8260D	11/04/20 22:45	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*107 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/04/20 22:45*	*KKW*	
4-Bromofluorobenzene	*44*	*1*	*50.0*	*89 %*	*41-142*	*0K05012*	*EPA 8260D*	*11/05/20 17:02*	*KKW*	
Dibromofluoromethane	*56*	*1*	*50.0*	*113 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/04/20 22:45*	*KKW*	
Dibromofluoromethane	*59*	*1*	*50.0*	*119 %*	*53-146*	*0K05012*	*EPA 8260D*	*11/05/20 17:02*	*KKW*	
Toluene-d8	*54*	*1*	*50.0*	*107 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/04/20 22:45*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0K05012*	*EPA 8260D*	*11/05/20 17:02*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0036-015.0-20201028 **Lab Sample ID:** AD06931-24 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 13:00 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,1-Dichloroethane [75-34-3]^	**2.4**	I	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**56**		ug/L	1	0.53	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	
Vinyl chloride [75-01-4]^	**3.3**		ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 05:27	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 05:27*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 05:27*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 05:27*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0011-025.0-20201028 **Lab Sample ID:** AD06931-25 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 13:40 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	QV-01
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,1-Dichloroethane [75-34-3]^	**25**		ug/L	5	3.1	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	QL-02, QV-01
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**430**		ug/L	10	5.3	25	0K04062	EPA 8260D	11/05/20 05:57	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Dibromochloromethane [124-48-1]^	2.5	U	ug/L	5	2.5	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Freon 113 [76-13-1]^	3.6	U	ug/L	5	3.6	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	QV-01
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**6.8**	I	ug/L	5	3.6	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Trichloroethene [79-01-6]^	4.4	U	ug/L	5	4.4	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	12	0K05012	EPA 8260D	11/05/20 17:30	KKW	QL-02, QV-01
Vinyl chloride [75-01-4]^	**140**		ug/L	10	7.1	25	0K04062	EPA 8260D	11/05/20 05:57	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*107 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 05:57*	*KKW*	
4-Bromofluorobenzene	*44*	*1*	*50.0*	*87 %*	*41-142*	*0K05012*	*EPA 8260D*	*11/05/20 17:30*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 05:57*	*KKW*	
Dibromofluoromethane	*57*	*1*	*50.0*	*115 %*	*53-146*	*0K05012*	*EPA 8260D*	*11/05/20 17:30*	*KKW*	
Toluene-d8	*54*	*1*	*50.0*	*107 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 05:57*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*107 %*	*41-146*	*0K05012*	*EPA 8260D*	*11/05/20 17:30*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMFN-MW0024-060.0-20201028 **Lab Sample ID:** AD06931-26 **Received:** 10/28/20 15:00

Matrix: Ground Water **Sampled:** 10/28/20 14:20 **Work Order:** AD06931

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	QV-01
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	QV-01
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**0.76**	I	ug/L	1	0.53	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Trichloroethene [79-01-6]^	**1.1**	I	ug/L	1	0.89	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	0K04062	EPA 8260D	11/05/20 06:28	KKW	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*0K04062*	*EPA 8260D*	*11/05/20 06:28*	*KKW*	
Dibromofluoromethane	*56*	*1*	*50.0*	*112 %*	*53-146*	*0K04062*	*EPA 8260D*	*11/05/20 06:28*	*KKW*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*0K04062*	*EPA 8260D*	*11/05/20 06:28*	*KKW*	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K02036 - EPA 5030B_MS

Blank (0K02036-BLK1) Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 19:53

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*109*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*111*	*53-146*			
Toluene-d8	*53*			*ug/L*	*50.0*		*105*	*41-146*			

LCS (0K02036-BS1) Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 17:49

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0		117	57-148			
1,1,2,2-Tetrachloroethane	18		2.5	ug/L	20.0		88	60-139			
1,1,2-Trichloroethane	17		2.5	ug/L	20.0		87	57-141			
1,1-Dichloroethane	19		2.5	ug/L	20.0		97	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		106	47-139			
1,2,4-Trichlorobenzene	28		2.5	ug/L	20.0		139	52-159			
1,2-Dibromo-3-chloropropane	24		2.5	ug/L	20.0		121	48-150			
1,2-Dibromoethane	18		2.5	ug/L	20.0		91	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		106	63-131			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K02036 - EPA 5030B_MS - Continued

LCS (0K02036-BS1) Continued Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 17:49

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	26		2.5	ug/L	20.0		129	50-156			
1,2-Dichloropropane	16		2.5	ug/L	20.0		81	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		102	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		98	65-133			
Bromodichloromethane	22		2.5	ug/L	20.0		111	58-135			
Bromoform	21		2.5	ug/L	20.0		106	46-148			
Bromomethane	17		2.5	ug/L	20.0		87	10-173			
Carbon Tetrachloride	24		2.5	ug/L	20.0		119	54-156			
Chlorobenzene	19		2.5	ug/L	20.0		95	51-139			
Chloroethane	20		2.5	ug/L	20.0		100	27-180			
Chloroform	20		2.5	ug/L	20.0		102	58-139			
Chloromethane	16		2.5	ug/L	20.0		78	33-154			
cis-1,2-Dichloroethene	20		2.5	ug/L	20.0		98	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0		96	64-128			
Dibromochloromethane	18		2.5	ug/L	20.0		88	50-140			
Dichlorodifluoromethane	30		2.5	ug/L	20.0		152	10-180			
Freon 113	21		2.5	ug/L	20.0		106	47-173			
Tetrachloroethene	18		2.5	ug/L	20.0		88	60-147			
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0		98	54-134			
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0		100	65-149			
Trichloroethene	19		2.5	ug/L	20.0		96	62-135			
Trichlorofluoromethane	23		2.5	ug/L	20.0		114	56-155			
Vinyl chloride	19		2.5	ug/L	20.0		96	20-167			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*111*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*115*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

Matrix Spike (0K02036-MS1) Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 18:20

Source: AD06931-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2700		250	ug/L	2000	80 U	133	57-148			
1,1,2,2-Tetrachloroethane	1900		250	ug/L	2000	54 U	97	60-139			
1,1,2-Trichloroethane	1900		250	ug/L	2000	76 U	96	57-141			
1,1-Dichloroethane	2200		250	ug/L	2000	62 U	109	57-142			
1,1-Dichloroethene	2500		250	ug/L	2000	94 U	125	47-139			
1,2,4-Trichlorobenzene	3200		250	ug/L	2000	70 U	158	52-159			
1,2-Dibromo-3-chloropropane	2600		250	ug/L	2000	96 U	130	48-150			
1,2-Dibromoethane	2000		250	ug/L	2000	78 U	98	57-140			
1,2-Dichlorobenzene	2300		250	ug/L	2000	73 U	113	63-131			
1,2-Dichloroethane	2700		250	ug/L	2000	63 U	136	50-156			
1,2-Dichloropropane	1900		250	ug/L	2000	80 U	97	61-133			
1,3-Dichlorobenzene	2300		250	ug/L	2000	77 U	117	66-129			
1,4-Dichlorobenzene	2200		250	ug/L	2000	76 U	109	65-133			
Bromodichloromethane	2400		250	ug/L	2000	52 U	120	58-135			
Bromoform	2300		250	ug/L	2000	75 U	114	46-148			
Bromomethane	2500		250	ug/L	2000	95 U	125	10-173			
Carbon Tetrachloride	2700		250	ug/L	2000	94 U	134	54-156			
Chlorobenzene	2200		250	ug/L	2000	72 U	108	51-139			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K02036 - EPA 5030B_MS - Continued

Matrix Spike (0K02036-MS1) Continued Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 18:20

Source: AD06931-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	2500		250	ug/L	2000	98 U	126	27-180			
Chloroform	2500		250	ug/L	2000	80 U	123	58-139			
Chloromethane	1900		250	ug/L	2000	82 U	93	33-154			
cis-1,2-Dichloroethene	2200		250	ug/L	2000	62	109	56-128			
cis-1,3-Dichloropropene	2200		250	ug/L	2000	59 U	108	64-128			
Dibromochloromethane	1900		250	ug/L	2000	50 U	97	50-140			
Dichlorodifluoromethane	3900		250	ug/L	2000	74 U	194	10-180			QM-07
Freon 113	2600		250	ug/L	2000	73 U	131	47-173			
Tetrachloroethene	2100		250	ug/L	2000	76 U	103	60-147			
trans-1,2-Dichloroethene	2300		250	ug/L	2000	73 U	114	54-134			
trans-1,3-Dichloropropene	2300		250	ug/L	2000	73 U	115	65-149			
Trichloroethene	2400		250	ug/L	2000	89 U	122	62-135			
Trichlorofluoromethane	2700		250	ug/L	2000	94 U	133	56-155			
Vinyl chloride	2600		250	ug/L	2000	71 U	131	20-167			
4-Bromofluorobenzene	*5400*			*ug/L*	*5000*		*108*	*41-142*			
Dibromofluoromethane	*5800*			*ug/L*	*5000*		*115*	*53-146*			
Toluene-d8	*5300*			*ug/L*	*5000*		*107*	*41-146*			

Matrix Spike Dup (0K02036-MSD1) Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 18:51

Source: AD06931-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2600		250	ug/L	2000	80 U	129	57-148	3	25	
1,1,2,2-Tetrachloroethane	2100		250	ug/L	2000	54 U	106	60-139	9	17	
1,1,2-Trichloroethane	1900		250	ug/L	2000	76 U	97	57-141	0.5	16	
1,1-Dichloroethane	2200		250	ug/L	2000	62 U	108	57-142	0.6	24	
1,1-Dichloroethene	2400		250	ug/L	2000	94 U	122	47-139	2	16	
1,2,4-Trichlorobenzene	3000		250	ug/L	2000	70 U	151	52-159	4	24	
1,2-Dibromo-3-chloropropane	2200		250	ug/L	2000	96 U	110	48-150	17	21	
1,2-Dibromoethane	2100		250	ug/L	2000	78 U	103	57-140	4	16	
1,2-Dichlorobenzene	2200		250	ug/L	2000	73 U	109	63-131	4	25	
1,2-Dichloroethane	2500		250	ug/L	2000	63 U	127	50-156	7	18	
1,2-Dichloropropane	1900		250	ug/L	2000	80 U	93	61-133	4	26	
1,3-Dichlorobenzene	2100		250	ug/L	2000	77 U	105	66-129	11	23	
1,4-Dichlorobenzene	2100		250	ug/L	2000	76 U	106	65-133	3	23	
Bromodichloromethane	2400		250	ug/L	2000	52 U	120	58-135	0.3	19	
Bromoform	2400		250	ug/L	2000	75 U	121	46-148	6	18	
Bromomethane	2400		250	ug/L	2000	95 U	121	10-173	4	29	
Carbon Tetrachloride	2700		250	ug/L	2000	94 U	133	54-156	1	27	
Chlorobenzene	2100		250	ug/L	2000	72 U	105	51-139	3	13	
Chloroethane	2200		250	ug/L	2000	98 U	112	27-180	11	22	
Chloroform	2400		250	ug/L	2000	80 U	122	58-139	0.7	17	
Chloromethane	1800		250	ug/L	2000	82 U	90	33-154	3	31	
cis-1,2-Dichloroethene	2200		250	ug/L	2000	62	107	56-128	2	17	
cis-1,3-Dichloropropene	2200		250	ug/L	2000	59 U	109	64-128	0.6	20	
Dibromochloromethane	2000		250	ug/L	2000	50 U	99	50-140	2	18	
Dichlorodifluoromethane	3700		250	ug/L	2000	74 U	184	10-180	5	26	QM-07
Freon 113	2400		250	ug/L	2000	73 U	119	47-173	9	30	
Tetrachloroethene	2000		250	ug/L	2000	76 U	98	60-147	5	21	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K02036 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K02036-MSD1) Continued Prepared: 11/02/2020 00:00 Analyzed: 11/02/2020 18:51

Source: AD06931-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	2400		250	ug/L	2000	73 U	119	54-134	4	20	
trans-1,3-Dichloropropene	2200		250	ug/L	2000	73 U	111	65-149	4	17	
Trichloroethene	2300		250	ug/L	2000	89 U	114	62-135	7	20	
Trichlorofluoromethane	2600		250	ug/L	2000	94 U	128	56-155	3	22	
Vinyl chloride	2500		250	ug/L	2000	71 U	126	20-167	4	24	
4-Bromofluorobenzene	*5600*			*ug/L*	*5000*		*113*	*41-142*			
Dibromofluoromethane	*5900*			*ug/L*	*5000*		*117*	*53-146*			
Toluene-d8	*5500*			*ug/L*	*5000*		*110*	*41-146*			

Batch 0K03050 - EPA 5030B_MS

Blank (0K03050-BLK1) Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 21:09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*109*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*107*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K03050 - EPA 5030B_MS - Continued

Blank (0K03050-BLK1) Continued Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 21:09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

LCS (0K03050-BS1) Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 19:06

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	24		2.5	ug/L	20.0		119	57-148			
1,1,2,2-Tetrachloroethane	17		2.5	ug/L	20.0		84	60-139			
1,1,2-Trichloroethane	18		2.5	ug/L	20.0		88	57-141			
1,1-Dichloroethane	19		2.5	ug/L	20.0		93	57-142			
1,1-Dichloroethene	18		2.5	ug/L	20.0		92	47-139			
1,2,4-Trichlorobenzene	26		2.5	ug/L	20.0		130	52-159			
1,2-Dibromo-3-chloropropane	21		2.5	ug/L	20.0		104	48-150			
1,2-Dibromoethane	17		2.5	ug/L	20.0		86	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0		93	63-131			
1,2-Dichloroethane	24		2.5	ug/L	20.0		121	50-156			
1,2-Dichloropropane	16		2.5	ug/L	20.0		80	61-133			
1,3-Dichlorobenzene	19		2.5	ug/L	20.0		94	66-129			
1,4-Dichlorobenzene	18		2.5	ug/L	20.0		92	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0		107	58-135			
Bromoform	18		2.5	ug/L	20.0		90	46-148			
Bromomethane	19		2.5	ug/L	20.0		93	10-173			
Carbon Tetrachloride	24		2.5	ug/L	20.0		120	54-156			
Chlorobenzene	19		2.5	ug/L	20.0		96	51-139			
Chloroethane	21		2.5	ug/L	20.0		107	27-180			
Chloroform	21		2.5	ug/L	20.0		105	58-139			
Chloromethane	15		2.5	ug/L	20.0		76	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0		103	56-128			
cis-1,3-Dichloropropene	17		2.5	ug/L	20.0		87	64-128			
Dibromochloromethane	18		2.5	ug/L	20.0		89	50-140			
Dichlorodifluoromethane	31		2.5	ug/L	20.0		157	10-180			
Freon 113	20		2.5	ug/L	20.0		99	47-173			
Tetrachloroethene	18		2.5	ug/L	20.0		90	60-147			
trans-1,2-Dichloroethene	19		2.5	ug/L	20.0		93	54-134			
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0		98	65-149			
Trichloroethene	21		2.5	ug/L	20.0		103	62-135			
Trichlorofluoromethane	24		2.5	ug/L	20.0		118	56-155			
Vinyl chloride	20		2.5	ug/L	20.0		99	20-167			
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*107*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*108*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Matrix Spike (0K03050-MS1) Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 19:36

Source: AD07290-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	25		2.5	ug/L	20.0	0.80 U	126	57-148			
1,1,2,2-Tetrachloroethane	18		2.5	ug/L	20.0	0.54 U	91	60-139			
1,1,2-Trichloroethane	19		2.5	ug/L	20.0	0.76 U	93	57-141			
1,1-Dichloroethane	20		2.5	ug/L	20.0	0.62 U	100	57-142			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K03050 - EPA 5030B_MS - Continued

Matrix Spike (0K03050-MS1) Continued Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 19:36

Source: AD07290-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	23		2.5	ug/L	20.0	0.94 U	117	47-139			
1,2,4-Trichlorobenzene	27		2.5	ug/L	20.0	0.70 U	134	52-159			
1,2-Dibromo-3-chloropropane	20		2.5	ug/L	20.0	0.96 U	102	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	93	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	106	63-131			
1,2-Dichloroethane	27		2.5	ug/L	20.0	0.63 U	135	50-156			
1,2-Dichloropropane	18		2.5	ug/L	20.0	0.80 U	89	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	110	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	106	65-133			
Bromodichloromethane	24		2.5	ug/L	20.0	0.52 U	122	58-135			
Bromoform	21		2.5	ug/L	20.0	0.75 U	105	46-148			
Bromomethane	23		2.5	ug/L	20.0	0.95 U	115	10-173			
Carbon Tetrachloride	26		2.5	ug/L	20.0	0.94 U	131	54-156			
Chlorobenzene	20		2.5	ug/L	20.0	0.72 U	102	51-139			
Chloroethane	22		2.5	ug/L	20.0	0.98 U	112	27-180			
Chloroform	22		2.5	ug/L	20.0	0.80 U	111	58-139			
Chloromethane	17		2.5	ug/L	20.0	0.82 U	83	33-154			
cis-1,2-Dichloroethene	20		2.5	ug/L	20.0	0.53 U	102	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.59 U	101	64-128			
Dibromochloromethane	19		2.5	ug/L	20.0	0.50 U	94	50-140			
Dichlorodifluoromethane	32		2.5	ug/L	20.0	0.74 U	161	10-180			
Freon 113	22		2.5	ug/L	20.0	0.73 U	112	47-173			
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	105	60-147			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	1.0	105	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	107	65-149			
Trichloroethene	23		2.5	ug/L	20.0	0.89 U	116	62-135			
Trichlorofluoromethane	25		2.5	ug/L	20.0	0.94 U	124	56-155			
Vinyl chloride	40		2.5	ug/L	20.0	20	102	20-167			
4-Bromofluorobenzene	*54*			*ug/L*	*50.0*		*107*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*103*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

Matrix Spike Dup (0K03050-MSD1) Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 20:07

Source: AD07290-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	26		2.5	ug/L	20.0	0.80 U	128	57-148	1	25	
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0	0.54 U	100	60-139	9	17	
1,1,2-Trichloroethane	19		2.5	ug/L	20.0	0.76 U	97	57-141	4	16	
1,1-Dichloroethane	20		2.5	ug/L	20.0	0.62 U	98	57-142	3	24	
1,1-Dichloroethene	22		2.5	ug/L	20.0	0.94 U	112	47-139	4	16	
1,2,4-Trichlorobenzene	28		2.5	ug/L	20.0	0.70 U	141	52-159	5	24	
1,2-Dibromo-3-chloropropane	24		2.5	ug/L	20.0	0.96 U	120	48-150	16	21	
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	94	57-140	0.7	16	
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	107	63-131	0.9	25	
1,2-Dichloroethane	29		2.5	ug/L	20.0	0.63 U	143	50-156	6	18	
1,2-Dichloropropane	19		2.5	ug/L	20.0	0.80 U	96	61-133	8	26	
1,3-Dichlorobenzene	20		2.5	ug/L	20.0	0.77 U	102	66-129	8	23	
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	100	65-133	6	23	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K03050 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K03050-MSD1) Continued Prepared: 11/03/2020 13:49 Analyzed: 11/03/2020 20:07

Source: AD07290-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	26		2.5	ug/L	20.0	0.52 U	129	58-135	6	19	
Bromoform	22		2.5	ug/L	20.0	0.75 U	110	46-148	4	18	
Bromomethane	24		2.5	ug/L	20.0	0.95 U	121	10-173	5	29	
Carbon Tetrachloride	26		2.5	ug/L	20.0	0.94 U	128	54-156	2	27	
Chlorobenzene	20		2.5	ug/L	20.0	0.72 U	102	51-139	0.2	13	
Chloroethane	24		2.5	ug/L	20.0	0.98 U	118	27-180	5	22	
Chloroform	22		2.5	ug/L	20.0	0.80 U	110	58-139	0.4	17	
Chloromethane	15		2.5	ug/L	20.0	0.82 U	77	33-154	8	31	
cis-1,2-Dichloroethene	20		2.5	ug/L	20.0	0.53 U	98	56-128	4	17	
cis-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.59 U	106	64-128	4	20	
Dibromochloromethane	21		2.5	ug/L	20.0	0.50 U	103	50-140	9	18	
Dichlorodifluoromethane	31		2.5	ug/L	20.0	0.74 U	157	10-180	3	26	
Freon 113	23		2.5	ug/L	20.0	0.73 U	113	47-173	0.3	30	
Tetrachloroethene	20		2.5	ug/L	20.0	0.76 U	100	60-147	4	21	
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	1.0	105	54-134	0.05	20	
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0	0.73 U	111	65-149	4	17	
Trichloroethene	23		2.5	ug/L	20.0	0.89 U	114	62-135	1	20	
Trichlorofluoromethane	23		2.5	ug/L	20.0	0.94 U	116	56-155	6	22	
Vinyl chloride	39		2.5	ug/L	20.0	20	97	20-167	2	24	
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*109*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*103*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Batch 0K04062 - EPA 5030B_MS

Blank (0K04062-BLK1) Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 21:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K04062 - EPA 5030B_MS - Continued

Blank (0K04062-BLK1) Continued Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 21:44

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*105*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*109*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

LCS (0K04062-BS1) Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 19:40

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0		113	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0		93	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		98	57-141			
1,1-Dichloroethane	17		2.5	ug/L	20.0		87	57-142			
1,1-Dichloroethene	18		2.5	ug/L	20.0		91	47-139			
1,2,4-Trichlorobenzene	28		2.5	ug/L	20.0		140	52-159			
1,2-Dibromo-3-chloropropane	22		2.5	ug/L	20.0		111	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0		96	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		105	63-131			
1,2-Dichloroethane	24		2.5	ug/L	20.0		119	50-156			
1,2-Dichloropropane	16		2.5	ug/L	20.0		78	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		98	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		100	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0		104	58-135			
Bromoform	21		2.5	ug/L	20.0		103	46-148			
Bromomethane	20		2.5	ug/L	20.0		98	10-173			
Carbon Tetrachloride	23		2.5	ug/L	20.0		114	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		102	51-139			
Chloroethane	21		2.5	ug/L	20.0		104	27-180			
Chloroform	21		2.5	ug/L	20.0		103	58-139			
Chloromethane	15		2.5	ug/L	20.0		73	33-154			
cis-1,2-Dichloroethene	18		2.5	ug/L	20.0		89	56-128			
cis-1,3-Dichloropropene	18		2.5	ug/L	20.0		92	64-128			
Dibromochloromethane	18		2.5	ug/L	20.0		91	50-140			
Dichlorodifluoromethane	27		2.5	ug/L	20.0		134	10-180			
Freon 113	21		2.5	ug/L	20.0		104	47-173			
Tetrachloroethene	18		2.5	ug/L	20.0		89	60-147			
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0		98	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0		106	65-149			
Trichloroethene	19		2.5	ug/L	20.0		93	62-135			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K04062 - EPA 5030B_MS - Continued

LCS (0K04062-BS1) Continued Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 19:40

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichlorofluoromethane	22		2.5	ug/L	20.0		112	56-155			
Vinyl chloride	19		2.5	ug/L	20.0		93	20-167			
4-Bromofluorobenzene	*54*			*ug/L*	*50.0*		*108*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*112*	*53-146*			
Toluene-d8	*53*			*ug/L*	*50.0*		*106*	*41-146*			

Matrix Spike (0K04062-MS1) Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 20:11

Source: AD06931-23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1400		120	ug/L	1000	40 U	141	57-148			
1,1,2,2-Tetrachloroethane	1100		120	ug/L	1000	27 U	108	60-139			
1,1,2-Trichloroethane	1000		120	ug/L	1000	38 U	104	57-141			
1,1-Dichloroethane	1200		120	ug/L	1000	31 U	117	57-142			
1,1-Dichloroethene	1300		120	ug/L	1000	47 U	129	47-139			
1,2,4-Trichlorobenzene	1500		120	ug/L	1000	35 U	152	52-159			
1,2-Dibromo-3-chloropropane	1400		120	ug/L	1000	48 U	136	48-150			
1,2-Dibromoethane	1100		120	ug/L	1000	39 U	107	57-140			
1,2-Dichlorobenzene	1200		120	ug/L	1000	36 U	122	63-131			
1,2-Dichloroethane	1500		120	ug/L	1000	32 U	148	50-156			
1,2-Dichloropropane	990		120	ug/L	1000	40 U	99	61-133			
1,3-Dichlorobenzene	1300		120	ug/L	1000	38 U	127	66-129			
1,4-Dichlorobenzene	1200		120	ug/L	1000	38 U	124	65-133			
Bromodichloromethane	1300		120	ug/L	1000	26 U	128	58-135			
Bromoform	1200		120	ug/L	1000	38 U	121	46-148			
Bromomethane	1300		120	ug/L	1000	48 U	129	10-173			
Carbon Tetrachloride	1500		120	ug/L	1000	47 U	151	54-156			
Chlorobenzene	1200		120	ug/L	1000	36 U	122	51-139			
Chloroethane	1100		120	ug/L	1000	49 U	110	27-180			
Chloroform	1300		120	ug/L	1000	40 U	126	58-139			
Chloromethane	860		120	ug/L	1000	41 U	86	33-154			
cis-1,2-Dichloroethene	3200		120	ug/L	1000	2100	114	56-128			
cis-1,3-Dichloropropene	1100		120	ug/L	1000	30 U	111	64-128			
Dibromochloromethane	1100		120	ug/L	1000	25 U	107	50-140			
Dichlorodifluoromethane	1600		120	ug/L	1000	37 U	161	10-180			
Freon 113	1300		120	ug/L	1000	36 U	133	47-173			
Tetrachloroethene	1200		120	ug/L	1000	38 U	115	60-147			
trans-1,2-Dichloroethene	1100		120	ug/L	1000	36 U	114	54-134			
trans-1,3-Dichloropropene	1200		120	ug/L	1000	36 U	125	65-149			
Trichloroethene	2100		120	ug/L	1000	820	127	62-135			
Trichlorofluoromethane	1300		120	ug/L	1000	47 U	128	56-155			
Vinyl chloride	1500		120	ug/L	1000	550	98	20-167			
4-Bromofluorobenzene	*2700*			*ug/L*	*2500*		*109*	*41-142*			
Dibromofluoromethane	*2800*			*ug/L*	*2500*		*111*	*53-146*			
Toluene-d8	*2700*			*ug/L*	*2500*		*106*	*41-146*			

Matrix Spike Dup (0K04062-MSD1) Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 20:42

Source: AD06931-23

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K04062 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K04062-MSD1) Continued Prepared: 11/04/2020 14:52 Analyzed: 11/04/2020 20:42

Source: AD06931-23

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1300		120	ug/L	1000	40 U	134	57-148	5	25	
1,1,2,2-Tetrachloroethane	1200		120	ug/L	1000	27 U	116	60-139	8	17	
1,1,2-Trichloroethane	1000		120	ug/L	1000	38 U	102	57-141	2	16	
1,1-Dichloroethane	1100		120	ug/L	1000	31 U	107	57-142	10	24	
1,1-Dichloroethene	1300		120	ug/L	1000	47 U	126	47-139	2	16	
1,2,4-Trichlorobenzene	1600		120	ug/L	1000	35 U	160	52-159	5	24	QM-07
1,2-Dibromo-3-chloropropane	1300		120	ug/L	1000	48 U	127	48-150	7	21	
1,2-Dibromoethane	1100		120	ug/L	1000	39 U	109	57-140	2	16	
1,2-Dichlorobenzene	1200		120	ug/L	1000	36 U	118	63-131	4	25	
1,2-Dichloroethane	1500		120	ug/L	1000	32 U	150	50-156	1	18	
1,2-Dichloropropane	960		120	ug/L	1000	40 U	96	61-133	3	26	
1,3-Dichlorobenzene	1200		120	ug/L	1000	38 U	121	66-129	5	23	
1,4-Dichlorobenzene	1200		120	ug/L	1000	38 U	120	65-133	3	23	
Bromodichloromethane	1300		120	ug/L	1000	26 U	133	58-135	4	19	
Bromoform	1300		120	ug/L	1000	38 U	132	46-148	9	18	
Bromomethane	1400		120	ug/L	1000	48 U	139	10-173	8	29	
Carbon Tetrachloride	1500		120	ug/L	1000	47 U	153	54-156	1	27	
Chlorobenzene	1200		120	ug/L	1000	36 U	120	51-139	1	13	
Chloroethane	1200		120	ug/L	1000	49 U	116	27-180	6	22	
Chloroform	1300		120	ug/L	1000	40 U	127	58-139	0.8	17	
Chloromethane	780		120	ug/L	1000	41 U	78	33-154	11	31	
cis-1,2-Dichloroethene	3100		120	ug/L	1000	2100	102	56-128	4	17	
cis-1,3-Dichloropropene	1200		120	ug/L	1000	30 U	116	64-128	4	20	
Dibromochloromethane	1100		120	ug/L	1000	25 U	113	50-140	6	18	
Dichlorodifluoromethane	1500		120	ug/L	1000	37 U	146	10-180	10	26	
Freon 113	1200		120	ug/L	1000	36 U	121	47-173	10	30	
Tetrachloroethene	1100		120	ug/L	1000	38 U	111	60-147	4	21	
trans-1,2-Dichloroethene	1100		120	ug/L	1000	36 U	108	54-134	6	20	
trans-1,3-Dichloropropene	1300		120	ug/L	1000	36 U	128	65-149	3	17	
Trichloroethene	2100		120	ug/L	1000	820	127	62-135	0.02	20	
Trichlorofluoromethane	1200		120	ug/L	1000	47 U	118	56-155	8	22	
Vinyl chloride	1400		120	ug/L	1000	550	89	20-167	6	24	
4-Bromofluorobenzene	*2800*			*ug/L*	*2500*		*112*	*41-142*			
Dibromofluoromethane	*2800*			*ug/L*	*2500*		*112*	*53-146*			
Toluene-d8	*2700*			*ug/L*	*2500*		*109*	*41-146*			

Batch 0K05012 - EPA 5030B_MS

Blank (0K05012-BLK1) Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 10:19

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K05012 - EPA 5030B_MS - Continued

Blank (0K05012-BLK1) Continued Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 10:19

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*45*	*I*		*ug/L*	*50.0*		*90*	*41-142*			
Dibromofluoromethane	*59*			*ug/L*	*50.0*		*118*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

LCS (0K05012-BS1) Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 09:21

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	26		2.5	ug/L	20.0		131	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0		95	60-139			
1,1,2-Trichloroethane	18		2.5	ug/L	20.0		89	57-141			
1,1-Dichloroethane	23		2.5	ug/L	20.0		113	57-142			
1,1-Dichloroethene	22		2.5	ug/L	20.0		110	47-139			
1,2,4-Trichlorobenzene	18		2.5	ug/L	20.0		90	52-159			
1,2-Dibromo-3-chloropropane	18		2.5	ug/L	20.0		91	48-150			
1,2-Dibromoethane	18		2.5	ug/L	20.0		89	57-140			
1,2-Dichlorobenzene	18		2.5	ug/L	20.0		92	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0		93	50-156			
1,2-Dichloropropane	19		2.5	ug/L	20.0		96	61-133			
1,3-Dichlorobenzene	19		2.5	ug/L	20.0		93	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		101	65-133			
Bromodichloromethane	20		2.5	ug/L	20.0		102	58-135			
Bromoform	17		2.5	ug/L	20.0		85	46-148			
Bromomethane	29		2.5	ug/L	20.0		147	10-173			
Carbon Tetrachloride	23		2.5	ug/L	20.0		115	54-156			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K05012 - EPA 5030B_MS - Continued

LCS (0K05012-BS1) Continued Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 09:21

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	20		2.5	ug/L	20.0		98	51-139			
Chloroethane	42		2.5	ug/L	20.0		211	27-180			QL-02
Chloroform	24		2.5	ug/L	20.0		119	58-139			
Chloromethane	22		2.5	ug/L	20.0		108	33-154			
cis-1,2-Dichloroethene	23		2.5	ug/L	20.0		116	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		99	64-128			
Dibromochloromethane	17		2.5	ug/L	20.0		85	50-140			
Dichlorodifluoromethane	17		2.5	ug/L	20.0		84	10-180			
Freon 113	23		2.5	ug/L	20.0		116	47-173			
Tetrachloroethene	17		2.5	ug/L	20.0		87	60-147			
trans-1,2-Dichloroethene	23		2.5	ug/L	20.0		116	54-134			
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0		95	65-149			
Trichloroethene	20		2.5	ug/L	20.0		99	62-135			
Trichlorofluoromethane	49		2.5	ug/L	20.0		246	56-155			QL-02
Vinyl chloride	30		2.5	ug/L	20.0		150	20-167			
4-Bromofluorobenzene	*42*	*I*		*ug/L*	*50.0*		*84*	*41-142*			
Dibromofluoromethane	*60*			*ug/L*	*50.0*		*119*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

Matrix Spike (0K05012-MS1) Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 17:59

Source: AD07347-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2800		250	ug/L	2000	80 U	139	57-148			
1,1,2,2-Tetrachloroethane	1800		250	ug/L	2000	54 U	90	60-139			
1,1,2-Trichloroethane	1800		250	ug/L	2000	76 U	89	57-141			
1,1-Dichloroethane	2300		250	ug/L	2000	62 U	116	57-142			
1,1-Dichloroethene	2300		250	ug/L	2000	94 U	115	47-139			
1,2,4-Trichlorobenzene	1700		250	ug/L	2000	70 U	87	52-159			
1,2-Dibromo-3-chloropropane	1800		250	ug/L	2000	96 U	89	48-150			
1,2-Dibromoethane	1700		250	ug/L	2000	78 U	87	57-140			
1,2-Dichlorobenzene	1900		250	ug/L	2000	73 U	96	63-131			
1,2-Dichloroethane	1900		250	ug/L	2000	63 U	93	50-156			
1,2-Dichloropropane	2300		250	ug/L	2000	80 U	113	61-133			
1,3-Dichlorobenzene	2000		250	ug/L	2000	77 U	99	66-129			
1,4-Dichlorobenzene	2100		250	ug/L	2000	76 U	103	65-133			
Bromodichloromethane	2200		250	ug/L	2000	52 U	109	58-135			
Bromoform	1600		250	ug/L	2000	75 U	82	46-148			
Bromomethane	4700		250	ug/L	2000	95 U	235	10-173			QM-19
Carbon Tetrachloride	2400		250	ug/L	2000	94 U	121	54-156			
Chlorobenzene	2000		250	ug/L	2000	72 U	102	51-139			
Chloroethane	4100		250	ug/L	2000	98 U	204	27-180			QM-19
Chloroform	2400		250	ug/L	2000	80 U	122	58-139			
Chloromethane	1900		250	ug/L	2000	82 U	94	33-154			
cis-1,2-Dichloroethene	2400		250	ug/L	2000	53 U	121	56-128			
cis-1,3-Dichloropropene	1900		250	ug/L	2000	59 U	97	64-128			
Dibromochloromethane	1600		250	ug/L	2000	50 U	82	50-140			
Dichlorodifluoromethane	1400		250	ug/L	2000	74 U	69	10-180			
Freon 113	2500		250	ug/L	2000	73 U	123	47-173			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K05012 - EPA 5030B_MS - Continued

Matrix Spike (0K05012-MS1) Continued Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 17:59

Source: AD07347-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Tetrachloroethene	1700		250	ug/L	2000	76 U	86	60-147			
trans-1,2-Dichloroethene	2400		250	ug/L	2000	73 U	119	54-134			
trans-1,3-Dichloropropene	1800		250	ug/L	2000	73 U	92	65-149			
Trichloroethene	2100		250	ug/L	2000	89 U	106	62-135			
Trichlorofluoromethane	4700		250	ug/L	2000	94 U	233	56-155			QM-19
Vinyl chloride	2700		250	ug/L	2000	71 U	134	20-167			
4-Bromofluorobenzene	*4300*	*I*		*ug/L*	*5000*		*85*	*41-142*			
Dibromofluoromethane	*5900*			*ug/L*	*5000*		*119*	*53-146*			
Toluene-d8	*5500*			*ug/L*	*5000*		*110*	*41-146*			

Matrix Spike Dup (0K05012-MSD1) Prepared: 11/05/2020 00:00 Analyzed: 11/05/2020 18:28

Source: AD07347-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2700		250	ug/L	2000	80 U	137	57-148	2	25	
1,1,2,2-Tetrachloroethane	1900		250	ug/L	2000	54 U	93	60-139	3	17	
1,1,2-Trichloroethane	1800		250	ug/L	2000	76 U	89	57-141	0.6	16	
1,1-Dichloroethane	2300		250	ug/L	2000	62 U	115	57-142	0.8	24	
1,1-Dichloroethene	2400		250	ug/L	2000	94 U	118	47-139	2	16	
1,2,4-Trichlorobenzene	1900		250	ug/L	2000	70 U	97	52-159	11	24	
1,2-Dibromo-3-chloropropane	1900		250	ug/L	2000	96 U	94	48-150	6	21	
1,2-Dibromoethane	1700		250	ug/L	2000	78 U	85	57-140	2	16	
1,2-Dichlorobenzene	1900		250	ug/L	2000	73 U	97	63-131	1	25	
1,2-Dichloroethane	1900		250	ug/L	2000	63 U	94	50-156	0.6	18	
1,2-Dichloropropane	2000		250	ug/L	2000	80 U	98	61-133	15	26	
1,3-Dichlorobenzene	2000		250	ug/L	2000	77 U	100	66-129	2	23	
1,4-Dichlorobenzene	2100		250	ug/L	2000	76 U	103	65-133	0.1	23	
Bromodichloromethane	2000		250	ug/L	2000	52 U	101	58-135	7	19	
Bromoform	1700		250	ug/L	2000	75 U	83	46-148	2	18	
Bromomethane	4800		250	ug/L	2000	95 U	239	10-173	2	29	QM-19
Carbon Tetrachloride	2400		250	ug/L	2000	94 U	118	54-156	3	27	
Chlorobenzene	2000		250	ug/L	2000	72 U	101	51-139	0.1	13	
Chloroethane	3900		250	ug/L	2000	98 U	196	27-180	4	22	QM-19
Chloroform	2400		250	ug/L	2000	80 U	121	58-139	0.4	17	
Chloromethane	1900		250	ug/L	2000	82 U	94	33-154	0.2	31	
cis-1,2-Dichloroethene	2400		250	ug/L	2000	53 U	119	56-128	2	17	
cis-1,3-Dichloropropene	1900		250	ug/L	2000	59 U	96	64-128	1	20	
Dibromochloromethane	1700		250	ug/L	2000	50 U	85	50-140	3	18	
Dichlorodifluoromethane	1300		250	ug/L	2000	74 U	66	10-180	4	26	
Freon 113	2500		250	ug/L	2000	73 U	124	47-173	0.5	30	
Tetrachloroethene	1700		250	ug/L	2000	76 U	84	60-147	2	21	
trans-1,2-Dichloroethene	2400		250	ug/L	2000	73 U	121	54-134	2	20	
trans-1,3-Dichloropropene	1900		250	ug/L	2000	73 U	93	65-149	1	17	
Trichloroethene	2000		250	ug/L	2000	89 U	101	62-135	5	20	
Trichlorofluoromethane	4600		250	ug/L	2000	94 U	230	56-155	1	22	QM-19
Vinyl chloride	2800		250	ug/L	2000	71 U	142	20-167	5	24	
4-Bromofluorobenzene	*4200*	*I*		*ug/L*	*5000*		*85*	*41-142*			
Dibromofluoromethane	*5900*			*ug/L*	*5000*		*119*	*53-146*			
Toluene-d8	*5400*			*ug/L*	*5000*		*108*	*41-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09025 - EPA 5030B_MS

Blank (0K09025-BLK1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 09:54

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*46*	*I*		*ug/L*	*50.0*		*92*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*116*	*53-146*			
Toluene-d8	*53*			*ug/L*	*50.0*		*106*	*41-146*			

LCS (0K09025-BS1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 08:57

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	25		2.5	ug/L	20.0		126	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0		95	60-139			
1,1,2-Trichloroethane	16		2.5	ug/L	20.0		82	57-141			
1,1-Dichloroethane	21		2.5	ug/L	20.0		105	57-142			
1,1-Dichloroethene	20		2.5	ug/L	20.0		102	47-139			
1,2,4-Trichlorobenzene	19		2.5	ug/L	20.0		94	52-159			
1,2-Dibromo-3-chloropropane	20		2.5	ug/L	20.0		99	48-150			
1,2-Dibromoethane	17		2.5	ug/L	20.0		84	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0		97	63-131			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09025 - EPA 5030B_MS - Continued

LCS (0K09025-BS1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 08:57

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	18		2.5	ug/L	20.0		90	50-156			
1,2-Dichloropropane	18		2.5	ug/L	20.0		92	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		98	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		102	65-133			
Bromodichloromethane	19		2.5	ug/L	20.0		97	58-135			
Bromoform	17		2.5	ug/L	20.0		87	46-148			
Bromomethane	28		2.5	ug/L	20.0		142	10-173			
Carbon Tetrachloride	22		2.5	ug/L	20.0		108	54-156			
Chlorobenzene	19		2.5	ug/L	20.0		96	51-139			
Chloroethane	34		2.5	ug/L	20.0		171	27-180			
Chloroform	22		2.5	ug/L	20.0		110	58-139			
Chloromethane	18		2.5	ug/L	20.0		91	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0		107	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0		94	64-128			
Dibromochloromethane	16		2.5	ug/L	20.0		80	50-140			
Dichlorodifluoromethane	12		2.5	ug/L	20.0		59	10-180			
Freon 113	22		2.5	ug/L	20.0		110	47-173			
Tetrachloroethene	16		2.5	ug/L	20.0		81	60-147			
trans-1,2-Dichloroethene	21		2.5	ug/L	20.0		107	54-134			
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0		92	65-149			
Trichloroethene	19		2.5	ug/L	20.0		96	62-135			
Trichlorofluoromethane	40		2.5	ug/L	20.0		198	56-155			QL-02
Vinyl chloride	27		2.5	ug/L	20.0		134	20-167			
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*86*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*116*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*107*	*41-146*			

Matrix Spike (0K09025-MS1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 18:02

Source: AD07390-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	29		2.5	ug/L	20.0	0.80 U	145	57-148			
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0	0.54 U	100	60-139			
1,1,2-Trichloroethane	18		2.5	ug/L	20.0	0.76 U	92	57-141			
1,1-Dichloroethane	24		2.5	ug/L	20.0	0.62 U	119	57-142			
1,1-Dichloroethene	24		2.5	ug/L	20.0	0.94 U	120	47-139			
1,2,4-Trichlorobenzene	16		2.5	ug/L	20.0	0.70 U	82	52-159			
1,2-Dibromo-3-chloropropane	19		2.5	ug/L	20.0	0.96 U	93	48-150			
1,2-Dibromoethane	18		2.5	ug/L	20.0	0.78 U	88	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0	0.73 U	101	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	98	50-156			
1,2-Dichloropropane	20		2.5	ug/L	20.0	0.80 U	98	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0	0.77 U	104	66-129			
1,4-Dichlorobenzene	22		2.5	ug/L	20.0	0.76 U	110	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0	0.52 U	103	58-135			
Bromoform	17		2.5	ug/L	20.0	0.75 U	86	46-148			
Bromomethane	37		2.5	ug/L	20.0	0.95 U	187	10-173			QM-07
Carbon Tetrachloride	25		2.5	ug/L	20.0	0.94 U	124	54-156			
Chlorobenzene	20		2.5	ug/L	20.0	0.72 U	101	51-139			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09025 - EPA 5030B_MS - Continued

Matrix Spike (0K09025-MS1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 18:02

Source: AD07390-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	37		2.5	ug/L	20.0	0.98 U	183	27-180			QM-07
Chloroform	31		2.5	ug/L	20.0	6.6	121	58-139			
Chloromethane	20		2.5	ug/L	20.0	0.82 U	100	33-154			
cis-1,2-Dichloroethene	25		2.5	ug/L	20.0	0.53 U	125	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0	0.59 U	95	64-128			
Dibromochloromethane	17		2.5	ug/L	20.0	0.50 U	84	50-140			
Dichlorodifluoromethane	12		2.5	ug/L	20.0	0.74 U	62	10-180			
Freon 113	25		2.5	ug/L	20.0	0.73 U	125	47-173			
Tetrachloroethene	17		2.5	ug/L	20.0	0.76 U	85	60-147			
trans-1,2-Dichloroethene	25		2.5	ug/L	20.0	0.73 U	123	54-134			
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.73 U	101	65-149			
Trichloroethene	20		2.5	ug/L	20.0	0.89 U	101	62-135			
Trichlorofluoromethane	45		2.5	ug/L	20.0	0.94 U	225	56-155			QM-19
Vinyl chloride	28		2.5	ug/L	20.0	0.71 U	141	20-167			
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*86*	*41-142*			
Dibromofluoromethane	*57*			*ug/L*	*50.0*		*115*	*53-146*			
Toluene-d8	*50*			*ug/L*	*50.0*		*99*	*41-146*			

Matrix Spike Dup (0K09025-MSD1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 18:31

Source: AD07390-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	29		2.5	ug/L	20.0	0.80 U	147	57-148	1	25	
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0	0.54 U	99	60-139	0.8	17	
1,1,2-Trichloroethane	18		2.5	ug/L	20.0	0.76 U	89	57-141	3	16	
1,1-Dichloroethane	24		2.5	ug/L	20.0	0.62 U	122	57-142	2	24	
1,1-Dichloroethene	24		2.5	ug/L	20.0	0.94 U	121	47-139	0.8	16	
1,2,4-Trichlorobenzene	17		2.5	ug/L	20.0	0.70 U	87	52-159	6	24	
1,2-Dibromo-3-chloropropane	19		2.5	ug/L	20.0	0.96 U	93	48-150	0.2	21	
1,2-Dibromoethane	18		2.5	ug/L	20.0	0.78 U	89	57-140	0.5	16	
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	103	63-131	2	25	
1,2-Dichloroethane	21		2.5	ug/L	20.0	0.63 U	104	50-156	6	18	
1,2-Dichloropropane	21		2.5	ug/L	20.0	0.80 U	105	61-133	8	26	
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	109	66-129	5	23	
1,4-Dichlorobenzene	22		2.5	ug/L	20.0	0.76 U	110	65-133	0.5	23	
Bromodichloromethane	22		2.5	ug/L	20.0	0.52 U	111	58-135	7	19	
Bromoform	17		2.5	ug/L	20.0	0.75 U	87	46-148	1	18	
Bromomethane	40		2.5	ug/L	20.0	0.95 U	200	10-173	7	29	QM-07
Carbon Tetrachloride	25		2.5	ug/L	20.0	0.94 U	124	54-156	0.3	27	
Chlorobenzene	21		2.5	ug/L	20.0	0.72 U	103	51-139	2	13	
Chloroethane	38		2.5	ug/L	20.0	0.98 U	188	27-180	2	22	QM-07
Chloroform	32		2.5	ug/L	20.0	6.6	125	58-139	3	17	
Chloromethane	21		2.5	ug/L	20.0	0.82 U	103	33-154	4	31	
cis-1,2-Dichloroethene	25		2.5	ug/L	20.0	0.53 U	124	56-128	0.6	17	
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.59 U	101	64-128	7	20	
Dibromochloromethane	17		2.5	ug/L	20.0	0.50 U	85	50-140	1	18	
Dichlorodifluoromethane	13		2.5	ug/L	20.0	0.74 U	65	10-180	4	26	
Freon 113	25		2.5	ug/L	20.0	0.73 U	126	47-173	0.5	30	
Tetrachloroethene	17		2.5	ug/L	20.0	0.76 U	86	60-147	1	21	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09025 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K09025-MSD1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 18:31

Source: AD07390-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	25		2.5	ug/L	20.0	0.73 U	124	54-134	0.5	20	
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.73 U	98	65-149	3	17	
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	108	62-135	6	20	
Trichlorofluoromethane	45		2.5	ug/L	20.0	0.94 U	226	56-155	0.6	22	QM-19
Vinyl chloride	29		2.5	ug/L	20.0	0.71 U	144	20-167	2	24	
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*85*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*116*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

Batch 0K09026 - EPA 5030B_MS

Blank (0K09026-BLK1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 10:39

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*106*	*41-142*			
Dibromofluoromethane	*57*			*ug/L*	*50.0*		*114*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS - Continued

Blank (0K09026-BLK1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 10:39

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

LCS (0K09026-BS1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 09:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0		114	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0		96	60-139			
1,1,2-Trichloroethane	19		2.5	ug/L	20.0		96	57-141			
1,1-Dichloroethane	19		2.5	ug/L	20.0		93	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		103	47-139			
1,2,4-Trichlorobenzene	30		2.5	ug/L	20.0		150	52-159			
1,2-Dibromo-3-chloropropane	21		2.5	ug/L	20.0		107	48-150			
1,2-Dibromoethane	20		2.5	ug/L	20.0		98	57-140			
1,2-Dichlorobenzene	22		2.5	ug/L	20.0		111	63-131			
1,2-Dichloroethane	25		2.5	ug/L	20.0		125	50-156			
1,2-Dichloropropane	18		2.5	ug/L	20.0		88	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0		106	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		107	65-133			
Bromodichloromethane	22		2.5	ug/L	20.0		109	58-135			
Bromoform	21		2.5	ug/L	20.0		105	46-148			
Bromomethane	18		2.5	ug/L	20.0		88	10-173			
Carbon Tetrachloride	24		2.5	ug/L	20.0		121	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		101	51-139			
Chloroethane	19		2.5	ug/L	20.0		93	27-180			
Chloroform	21		2.5	ug/L	20.0		104	58-139			
Chloromethane	15		2.5	ug/L	20.0		76	33-154			
cis-1,2-Dichloroethene	19		2.5	ug/L	20.0		93	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		98	64-128			
Dibromochloromethane	20		2.5	ug/L	20.0		100	50-140			
Dichlorodifluoromethane	20		2.5	ug/L	20.0		98	10-180			
Freon 113	22		2.5	ug/L	20.0		108	47-173			
Tetrachloroethene	18		2.5	ug/L	20.0		92	60-147			
trans-1,2-Dichloroethene	19		2.5	ug/L	20.0		96	54-134			
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0		110	65-149			
Trichloroethene	20		2.5	ug/L	20.0		99	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0		101	56-155			
Vinyl chloride	17		2.5	ug/L	20.0		85	20-167			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*111*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*112*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

Matrix Spike (0K09026-MS1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:18

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2700		250	ug/L	2000	80 U	133	57-148			
1,1,2,2-Tetrachloroethane	1900		250	ug/L	2000	54 U	97	60-139			
1,1,2-Trichloroethane	1800		250	ug/L	2000	76 U	91	57-141			
1,1-Dichloroethane	2200		250	ug/L	2000	62 U	111	57-142			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS - Continued

Matrix Spike (0K09026-MS1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:18

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	2500		250	ug/L	2000	94 U	123	47-139			
1,2,4-Trichlorobenzene	2600		250	ug/L	2000	70 U	128	52-159			
1,2-Dibromo-3-chloropropane	2000		250	ug/L	2000	96 U	100	48-150			QM-11
1,2-Dibromoethane	2000		250	ug/L	2000	78 U	99	57-140			
1,2-Dichlorobenzene	2200		250	ug/L	2000	73 U	112	63-131			
1,2-Dichloroethane	2800		250	ug/L	2000	63 U	139	50-156			
1,2-Dichloropropane	1800		250	ug/L	2000	80 U	89	61-133			
1,3-Dichlorobenzene	2300		250	ug/L	2000	77 U	114	66-129			
1,4-Dichlorobenzene	2300		250	ug/L	2000	76 U	113	65-133			
Bromodichloromethane	2500		250	ug/L	2000	52 U	126	58-135			
Bromoform	2300		250	ug/L	2000	75 U	116	46-148			
Bromomethane	2100		250	ug/L	2000	95 U	103	10-173			
Carbon Tetrachloride	2700		250	ug/L	2000	94 U	134	54-156			
Chlorobenzene	2100		250	ug/L	2000	72 U	106	51-139			
Chloroethane	2300		250	ug/L	2000	98 U	116	27-180			
Chloroform	2500		250	ug/L	2000	80 U	125	58-139			
Chloromethane	1500		250	ug/L	2000	82 U	77	33-154			
cis-1,2-Dichloroethene	3200		250	ug/L	2000	990	113	56-128			
cis-1,3-Dichloropropene	2300		250	ug/L	2000	59 U	114	64-128			
Dibromochloromethane	2000		250	ug/L	2000	50 U	100	50-140			
Dichlorodifluoromethane	2200		250	ug/L	2000	74 U	111	10-180			
Freon 113	6000		250	ug/L	2000	3500	126	47-173			
Tetrachloroethene	2000		250	ug/L	2000	76 U	102	60-147			
trans-1,2-Dichloroethene	2200		250	ug/L	2000	73 U	110	54-134			
trans-1,3-Dichloropropene	2300		250	ug/L	2000	73 U	113	65-149			
Trichloroethene	17000	L	250	ug/L	2000	15000	101	62-135			
Trichlorofluoromethane	2600		250	ug/L	2000	94 U	128	56-155			
Vinyl chloride	1900		250	ug/L	2000	71 U	96	20-167			
4-Bromofluorobenzene	*5500*			*ug/L*	*5000*		*109*	*41-142*			
Dibromofluoromethane	*6000*			*ug/L*	*5000*		*120*	*53-146*			
Toluene-d8	*5400*			*ug/L*	*5000*		*108*	*41-146*			

Matrix Spike Dup (0K09026-MSD1) Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:49

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2700		250	ug/L	2000	80 U	135	57-148	2	25	
1,1,2,2-Tetrachloroethane	2100		250	ug/L	2000	54 U	103	60-139	6	17	
1,1,2-Trichloroethane	1900		250	ug/L	2000	76 U	96	57-141	5	16	
1,1-Dichloroethane	2000		250	ug/L	2000	62 U	102	57-142	8	24	
1,1-Dichloroethene	2500		250	ug/L	2000	94 U	123	47-139	0	16	
1,2,4-Trichlorobenzene	3100		250	ug/L	2000	70 U	154	52-159	18	24	
1,2-Dibromo-3-chloropropane	2600		250	ug/L	2000	96 U	129	48-150	25	21	QM-11
1,2-Dibromoethane	1900		250	ug/L	2000	78 U	97	57-140	2	16	
1,2-Dichlorobenzene	2400		250	ug/L	2000	73 U	119	63-131	6	25	
1,2-Dichloroethane	2700		250	ug/L	2000	63 U	135	50-156	3	18	
1,2-Dichloropropane	1900		250	ug/L	2000	80 U	95	61-133	7	26	
1,3-Dichlorobenzene	2300		250	ug/L	2000	77 U	114	66-129	0.04	23	
1,4-Dichlorobenzene	2300		250	ug/L	2000	76 U	113	65-133	0.4	23	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 0K09026 - EPA 5030B_MS - Continued

Matrix Spike Dup (0K09026-MSD1) Continued Prepared: 11/09/2020 00:00 Analyzed: 11/09/2020 13:49

Source: AD07357-03

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	2600		250	ug/L	2000	52 U	130	58-135	4	19	
Bromoform	2100		250	ug/L	2000	75 U	103	46-148	12	18	
Bromomethane	2200		250	ug/L	2000	95 U	111	10-173	8	29	
Carbon Tetrachloride	2600		250	ug/L	2000	94 U	130	54-156	3	27	
Chlorobenzene	2200		250	ug/L	2000	72 U	108	51-139	2	13	
Chloroethane	2300		250	ug/L	2000	98 U	113	27-180	3	22	
Chloroform	2400		250	ug/L	2000	80 U	120	58-139	4	17	
Chloromethane	1500		250	ug/L	2000	82 U	74	33-154	4	31	
cis-1,2-Dichloroethene	3200		250	ug/L	2000	990	112	56-128	0.4	17	
cis-1,3-Dichloropropene	2300		250	ug/L	2000	59 U	115	64-128	1	20	
Dibromochloromethane	2000		250	ug/L	2000	50 U	100	50-140	0.4	18	
Dichlorodifluoromethane	2300		250	ug/L	2000	74 U	113	10-180	2	26	
Freon 113	5900		250	ug/L	2000	3500	118	47-173	3	30	
Tetrachloroethene	2100		250	ug/L	2000	76 U	105	60-147	3	21	
trans-1,2-Dichloroethene	2200		250	ug/L	2000	73 U	109	54-134	0.9	20	
trans-1,3-Dichloropropene	2400		250	ug/L	2000	73 U	121	65-149	7	17	
Trichloroethene	17000	L	250	ug/L	2000	15000	121	62-135	2	20	
Trichlorofluoromethane	2600		250	ug/L	2000	94 U	128	56-155	0.2	22	
Vinyl chloride	2000		250	ug/L	2000	71 U	99	20-167	3	24	
4-Bromofluorobenzene	*5500*			*ug/L*	*5000*		*110*	*41-142*			
Dibromofluoromethane	*5800*			*ug/L*	*5000*		*115*	*53-146*			
Toluene-d8	*5500*			*ug/L*	*5000*		*111*	*41-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-19	The spike recovery was outside acceptance limits for the MS and/or MSD.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2142 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112608982	KSC - HMFN	Chris Hook	412-921-8790	Kaitlin, ENCO
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Melissa Bennett	**PHONE NUMBER** 321-914-9394	**ADDRESS**
MBen		**CARRIER/WAYBILL NUMBER**		**CITY, STATE** Orlando, FL

STANDARD TAT ☐
RUSH TAT ☑
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☑ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: 8260D B	COMMENTS
10/26	1340	HMFN-MW0040-042.5-20201026	40	40	45	GW	G	3	X			
10/26	1400	HMFN-MW0039-035.0-20201026	39	30	40				X			
10/26	1435	HMFN-MW0043-035.0-20201026	43	30	40				X			
10/26	1500	HMFN-MW0044-042.5-20201026	44	40	45				X			
10/26	1540	HMFN-MW0034-015.0-20201026	34	10	20				X			
10/26	1620	HMFN-MW0035-035.0-20201026	35	30	40				X			
10/27	0900	HMFN-MW0046-015.0-20201027	46	10	20				X			
10/27	0930	HMFN-MW0047-025.0-20201027	47	20	30				X			
10/27	1000	HMFN-MW0037-010.0-20201027	37	5	15				X			
10/27	1040	HMFN-MW0038-020.0-20201027	38	15	25				X			
10/27	1120	HMFN-MW0029-015.0-20201027	29	10	20				X			
10/27	1150	HMFN-MW0030-025.0-20201027	30	20	30				X			
10/27	1230	HMFN-MW0031-035.0-20201027	31	30	40				X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY MBen	10-28-20	1500	1. RECEIVED BY	10/28/20	1500
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS C-2126 2.0°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TtNUS-001

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2143 | PAGE 2 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	KSC- HMFN	Chris Hook	412-921-8790	Kaitlin Enco
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
MM Bag		Melissa Bennett	321-914-9394	
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
				Orlando, FL

STANDARD TAT ☐
RUSH TAT ☑
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☑ 7 day ☐ 14 day

DATE YEAR 2020	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS 8260B VOC							COMMENTS
									G	HCl								
10/27	1300	HMFN-MW0032-042.5-20201027	32	40	45	GW	G	3	X									
10/27	1340	HMFN-MW0033-047.5-20201027	33	45	50				X									
10/27	1420	HMFN-MW0009-010.0-20201027	9	5	15				X									
10/27	1500	HMFN-MW0008-025.0-20201027	8	20	30				X									
10/28	0845	HMFN-MW0045-030.0-20201028	45	25	35				X									
10/28	0920	HMFN-MW0027-042.5-20201028	27	40	45				X									
10/28	1000	HMFN-MW0004-010.0-20201028	4	5	15				X									
10/28	1040	HMFN-MW0016-010.0-20201028	16	5	15				X									
10/28	1120	HMFN-MW0041-035.0-20201028	41	30	40				X									
10/28	1200	HMFN-MW0042-042.5-20201028	42	40	45				X									
10/28	1300	HMFN-MW0036-015.0-20201028	36	10	20				X									
10/28	1340	HMFN-MW0011-025.0-20201028	11	20	30				X									
10/28	1420	HMFN-MW0024-060.0-20201028	24	55	65				X									

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY MM Bag	10-28-20	1500	1. RECEIVED BY	10/28/20	1500
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS C-2126 2.0°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TtNUS-001

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Tuesday, February 9, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN SWMU 090
ENCO Workorder(s): AE00180

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Monday, February 1, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AE00180
SDG: AE00180-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

This package includes an amendment to the Level II report dated 2/8/21 to include surrogate results for HMPN-MW0041-035.0-20210128[AE00180-03] and HMPN-MW0002-035.0-20210201[AE00180-28] that were not initially included.

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
EPA 8260D / 5030B_MS	OVGCMS2, OVGCMS5

Analysis: EPA 8260D

Manual integrations were performed on samples associated with EPA 8260D. All data & explanations are included in the raw data section of the report.

Affected Samples: AA64811-CCV1, HMPN-MW0043-035.0-20210128[AE00180-01], HMPN-MW0044-045.0-20210128[AE00180-02], HMPN-MW0042-042.5-20210128[AE00180-04], HMPN-MW0046-015.0-20210129[AE00180-07], HMPN-MW0047-025.0-20210129[AE00180-08], HMPN-MW0036-015.0-20210129[AE00180-09], HMPN-MW0011-025.0-20210129[AE00180-10], HMPN-MW0029-015.0-20210129[AE00180-11], HMPN-MW0030-025.0-20210129[AE00180-12], HMPN-MW0031-035.0-20210129[AE00180-13], HMPN-MW0032-042.5-20210129[AE00180-14], HMPN-MW0008-025.0-20210129[AE00180-16]
The associated calibration verification standard for isopropylbenzene, styrene, and xylenes (total) exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: 1B04020-BS1, 1B04041-BS1, 1B05029-BS1, 1B05029-BSD1, HMPN-MW0043-035.0-20210128[AE00180-01], HMPN-MW0044-045.0-20210128[AE00180-02], HMPN-MW0042-042.5-20210128[AE00180-04], HMPN-MW0037-010.0-20210129[AE00180-05], HMPN-MW0038-020.0-20210129[AE00180-06], HMPN-MW0046-015.0-20210129[AE00180-07], HMPN-MW0047-025.0-20210129[AE00180-08], HMPN-MW0036-015.0-20210129[AE00180-09], HMPN-MW0011-025.0-20210129[AE00180-10], HMPN-MW0029-015.0-20210129[AE00180-11], HMPN-MW0030-025.0-20210129[AE00180-12], HMPN-MW0031-035.0-20210129[AE00180-13], HMPN-MW0032-042.5-20210129[AE00180-14], HMPN-MW0008-025.0-20210129[AE00180-16], HMPN-MW0024-060.0-20210129[AE00180-17], HMPN-MW0035-035.0-20210129[AE00180-18], HMPN-MW0034-015.0-20210129[AE00180-19], HMPN-MW0039-035.0-20210131[AE00180-20], HMPN-MW0040-042.5-20210131[AE00180-21], HMPN-MW0009-010.0-20210131[AE00180-22], HMPN-MW0004-010.0-20210131[AE00180-23], HMPN-MW0027-042.5-20210201[AE00180-24], HMPN-MW0028-047.5-20210201[AE00180-25], HMPN-DRUM222803-20210201[AE00180-29]
The laboratory control sample exhibited low bias for methyl acetate; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: HMPN-MW0043-035.0-20210128[AE00180-01], 1B04020-MS1, 1B04020-MSD1
Matrix spike recovery was outside acceptance limits for methyl acetate.

Affected Samples: HMPN-MW0044-045.0-20210128[AE00180-02], HMPN-MW0041-035.0-20210128[AE00180-03], HMPN-MW0042-042.5-20210128[AE00180-04], HMPN-MW0030-025.0-20210129[AE00180-12], HMPN-MW0031-035.0-20210129[AE00180-13], HMPN-MW0032-042.5-20210129[AE00180-14], HMPN-MW0033-047.5-20210129[AE00180-15], HMPN-MW0039-035.0-20210131[AE00180-20], HMPN-MW0039-035.0-20210131[AE00180-20RE1], HMPN-MW0009-010.0-20210131[AE00180-22], HMPN-MW0027-042.5-20210201[AE00180-24], HMPN-MW0028-047.5-20210201[AE00180-25], HMPN-MW0016-010.0-20210201[AE00180-26], HMPN-MW0045-030.0-20210201[AE00180-27], HMPN-MW0002-035.0-20210201[AE00180-28], HMPN-DRUM222803-20210201[AE00180-29], HMPN-DRUM222803-20210201[AE00180-29RE1]
Sample was analyzed at a dilution due to suspected matrix interference.

Affected Samples: HMPN-MW0041-035.0-20210128[AE00180-03], HMPN-MW0033-047.5-20210129[AE00180-15], HMPN-MW0016-010.0-20210201[AE00180-26], HMPN-MW0045-030.0-20210201[AE00180-27], HMPN-MW0002-035.0-20210201[AE00180-28]
Initial analysis was over diluted. Sample was reanalyzed at a lower dilution.

Affected Samples: HMPN-MW0041-035.0-20210128[AE00180-03RE1]
Result for cis-1,2-dichloroethene was over the calibration range of the instrument. Initial result was within the calibration range.

Affected Samples: AA64821-CCV1, AA64833-CCV1, HMPN-MW0041-035.0-20210128[AE00180-03], HMPN-MW0033-047.5-20210129[AE00180-15RE1], HMPN-MW0024-060.0-20210129[AE00180-17], HMPN-MW0035-035.0-20210129[AE00180-18], HMPN-MW0034-015.0-20210129[AE00180-19], HMPN-MW0039-035.0-20210131[AE00180-20], HMPN-MW0040-042.5-20210131[AE00180-21], HMPN-MW0009-010.0-20210131[AE00180-22], HMPN-MW0004-010.0-20210131[AE00180-23], HMPN-MW0027-042.5-20210201[AE00180-24], HMPN-MW0028-047.5-20210201[AE00180-25], HMPN-MW0016-010.0-20210201[AE00180-26RE1], HMPN-MW0045-030.0-20210201[AE00180-27RE1], HMPN-MW0002-035.0-20210201[AE00180-28RE1], HMPN-DRUM222803-20210201[AE00180-29]
The associated calibration verification standard for bromomethane exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: AA64811-CCV1, HMPN-MW0037-010.0-20210129[AE00180-05], HMPN-MW0038-020.0-20210129[AE00180-06]
The associated calibration verification standard for isopropylbenzene and styrene exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: AA64811-CCV1, HMPN-MW0037-010.0-20210129[AE00180-05], HMPN-MW0038-020.0-20210129[AE00180-06]
The associated calibration verification standard for xylenes (o-xylene) exhibited high bias. Sample was reanalyzed with acceptable QC recoveries.

Affected Samples: AA64821-CCV1, HMPN-MW0035-035.0-20210129[AE00180-18], HMPN-MW0034-015.0-20210129[AE00180-19], HMPN-MW0039-035.0-20210131[AE00180-20], HMPN-MW0040-042.5-20210131[AE00180-21], HMPN-MW0009-010.0-20210131[AE00180-22], HMPN-DRUM222803-20210201[AE00180-29]
The associated calibration verification standard for vinyl chloride was outside acceptance limits. Sample was reanalyzed with acceptable QC recoveries.

Affected Samples: HMPN-MW0035-035.0-20210129[AE00180-18], HMPN-MW0035-035.0-20210129[AE00180-18RE1]
Result for cis-1,2-dichloroethene was above the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: HMPN-MW0027-042.5-20210201[AE00180-24]
Result for trichloroethene was above the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: HMPN-MW0028-047.5-20210201[AE00180-25]
Result for Freon 113 and trichloroethene was above the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: 1B04020-MS1, 1B04020-MSD1
Result for cis-1,2-dichloroethane is over the calibration range of the instrument. Spike recovery was acceptable. Source sample was reanalyzed at a dilution.

Affected Samples: 1B04041-MS1, 1B04041-MSD1
Precision between duplicate matrix spikes of the same sample was outside acceptance limits for bromomethane and methyl acetate.

Affected Samples: 1B04041-MS1, 1B04041-MSD1
Matrix spike recovery for cyclohexane and/or methyl acetate was outside acceptance limits.

Affected Batch: 1B05029
Laboratory sample duplicate was analyzed in place of matrix spike and matrix spike duplicate.

Affected Samples: AA64811-CCV1, AA64821-CCV1, AA64821-CCV2, AA64837-CCV1
The continuing calibration verification standard exhibited low bias for multiple analytes; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Sequence: AA64808
SCV recovery for 2-butanone was outside acceptance limits. Analyte was not detected in the samples.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0043-035.0-20210128 **Lab ID: AE00180-01** **Sampled: 01/28/21 15:20** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/11/21	02/04/21 08:53	02/04/21 10:36

Client ID: HMPN-MW0044-045.0-20210128 **Lab ID: AE00180-02** **Sampled: 01/28/21 16:05** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/11/21	02/04/21 08:53	02/04/21 11:06

Client ID: HMPN-MW0041-035.0-20210128 **Lab ID: AE00180-03** **Sampled: 01/28/21 16:45** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/11/21	02/04/21 08:53	02/04/21 11:35

Client ID: HMPN-MW0041-035.0-20210128 **Lab ID: AE00180-03RE1** **Sampled: 01/28/21 16:45** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/11/21	02/05/21 00:00	02/05/21 13:54

Client ID: HMPN-MW0042-042.5-20210128 **Lab ID: AE00180-04** **Sampled: 01/28/21 17:35** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/11/21	02/04/21 08:53	02/04/21 12:05

Client ID: HMPN-MW0037-010.0-20210129 **Lab ID: AE00180-05** **Sampled: 01/29/21 09:20** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 12:34

Client ID: HMPN-MW0037-010.0-20210129 **Lab ID: AE00180-05RE1** **Sampled: 01/29/21 09:20** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/05/21 00:00	02/05/21 14:23

Client ID: HMPN-MW0038-020.0-20210129 **Lab ID: AE00180-06** **Sampled: 01/29/21 09:55** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 13:04

Client ID: HMPN-MW0038-020.0-20210129 **Lab ID: AE00180-06RE1** **Sampled: 01/29/21 09:55** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/05/21 00:00	02/05/21 14:51

Client ID: HMPN-MW0046-015.0-20210129 **Lab ID: AE00180-07** **Sampled: 01/29/21 10:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 13:33

Client ID: HMPN-MW0047-025.0-20210129 **Lab ID: AE00180-08** **Sampled: 01/29/21 11:00** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 14:03

Client ID: HMPN-MW0036-015.0-20210129 **Lab ID: AE00180-09** **Sampled: 01/29/21 11:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 14:33

Client ID: HMPN-MW0011-025.0-20210129 **Lab ID: AE00180-10** **Sampled: 01/29/21 12:05** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 15:02

Client ID: HMPN-MW0029-015.0-20210129 **Lab ID: AE00180-11** **Sampled: 01/29/21 12:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 15:32

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0030-025.0-20210129 **Lab ID: AE00180-12** **Sampled: 01/29/21 13:00** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 16:01

Client ID: HMPN-MW0031-035.0-20210129 **Lab ID: AE00180-13** **Sampled: 01/29/21 13:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 16:31

Client ID: HMPN-MW0032-042.5-20210129 **Lab ID: AE00180-14** **Sampled: 01/29/21 14:00** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 17:00

Client ID: HMPN-MW0033-047.5-20210129 **Lab ID: AE00180-15RE1** **Sampled: 01/29/21 14:35** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/05/21 00:00	02/05/21 12:56

Client ID: HMPN-MW0008-025.0-20210129 **Lab ID: AE00180-16** **Sampled: 01/29/21 15:15** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 08:53	02/04/21 17:59

Client ID: HMPN-MW0024-060.0-20210129 **Lab ID: AE00180-17** **Sampled: 01/29/21 15:45** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 13:17	02/05/21 00:55

Client ID: HMPN-MW0035-035.0-20210129 **Lab ID: AE00180-18** **Sampled: 01/29/21 16:40** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 13:17	02/05/21 01:25

Client ID: HMPN-MW0035-035.0-20210129 **Lab ID: AE00180-18RE1** **Sampled: 01/29/21 16:40** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/05/21 11:42	02/05/21 12:23

Client ID: HMPN-MW0035-035.0-20210129 **Lab ID: AE00180-18RE2** **Sampled: 01/29/21 16:40** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/05/21 11:42	02/05/21 13:22

Client ID: HMPN-MW0034-015.0-20210129 **Lab ID: AE00180-19** **Sampled: 01/29/21 17:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/04/21 13:17	02/05/21 01:54

Client ID: HMPN-MW0034-015.0-20210129 **Lab ID: AE00180-19RE1** **Sampled: 01/29/21 17:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/12/21	02/05/21 11:42	02/05/21 12:53

Client ID: HMPN-MW0039-035.0-20210131 **Lab ID: AE00180-20** **Sampled: 01/31/21 14:40** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/04/21 13:17	02/05/21 02:24

Client ID: HMPN-MW0039-035.0-20210131 **Lab ID: AE00180-20RE1** **Sampled: 01/31/21 14:40** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/05/21 11:42	02/05/21 13:52

Client ID: HMPN-MW0040-042.5-20210131 **Lab ID: AE00180-21** **Sampled: 01/31/21 15:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/04/21 13:17	02/05/21 02:54

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0040-042.5-20210131 **Lab ID: AE00180-21RE1** **Sampled: 01/31/21 15:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/05/21 11:42	02/05/21 14:21

Client ID: HMPN-MW0009-010.0-20210131 **Lab ID: AE00180-22** **Sampled: 01/31/21 16:10** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/04/21 13:17	02/05/21 03:23

Client ID: HMPN-MW0009-010.0-20210131 **Lab ID: AE00180-22RE1** **Sampled: 01/31/21 16:10** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/05/21 11:42	02/05/21 14:51

Client ID: HMPN-MW0004-010.0-20210131 **Lab ID: AE00180-23** **Sampled: 01/31/21 17:00** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/14/21	02/04/21 13:17	02/05/21 03:53

Client ID: HMPN-MW0027-042.5-20210201 **Lab ID: AE00180-24** **Sampled: 02/01/21 08:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/04/21 13:17	02/05/21 04:23

Client ID: HMPN-MW0027-042.5-20210201 **Lab ID: AE00180-24RE1** **Sampled: 02/01/21 08:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/05/21 11:42	02/05/21 15:21

Client ID: HMPN-MW0028-047.5-20210201 **Lab ID: AE00180-25** **Sampled: 02/01/21 09:15** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/04/21 13:17	02/05/21 04:52

Client ID: HMPN-MW0028-047.5-20210201 **Lab ID: AE00180-25RE1** **Sampled: 02/01/21 09:15** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/05/21 11:42	02/05/21 15:50

Client ID: HMPN-MW0016-010.0-20210201 **Lab ID: AE00180-26RE1** **Sampled: 02/01/21 09:45** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/05/21 00:00	02/05/21 15:20

Client ID: HMPN-MW0045-030.0-20210201 **Lab ID: AE00180-27RE1** **Sampled: 02/01/21 10:30** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/05/21 00:00	02/05/21 15:49

Client ID: HMPN-MW0002-035.0-20210201 **Lab ID: AE00180-28** **Sampled: 02/01/21 11:10** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/04/21 13:17	02/05/21 06:21

Client ID: HMPN-MW0002-035.0-20210201 **Lab ID: AE00180-28RE1** **Sampled: 02/01/21 11:10** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/05/21 00:00	02/05/21 13:25

Client ID: HMPN-DRUM222803-20210201 **Lab ID: AE00180-29** **Sampled: 02/01/21 12:00** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/04/21 13:17	02/05/21 06:51

Client ID: HMPN-DRUM222803-20210201 **Lab ID: AE00180-29RE1** **Sampled: 02/01/21 12:00** **Received: 02/01/21 13:25**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	02/15/21	02/05/21 11:42	02/05/21 16:20

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0043-035.0-20210128 **Lab ID: AE00180-01**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	89		0.53	2.5	ug/L	EPA 8260D	
Freon 113	1.8	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	25		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0044-045.0-20210128 **Lab ID: AE00180-02**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	540	I	260	1200	ug/L	EPA 8260D	
Freon 113	32000		360	1200	ug/L	EPA 8260D	
Trichloroethene	480	I	440	1200	ug/L	EPA 8260D	

Client ID: HMPN-MW0041-035.0-20210128 **Lab ID: AE00180-03**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	99		1.1	5.0	ug/L	EPA 8260D	

Client ID: HMPN-MW0041-035.0-20210128 **Lab ID: AE00180-03RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	0.95	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	23		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	32		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0042-042.5-20210128 **Lab ID: AE00180-04**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2600		26	120	ug/L	EPA 8260D	
Trichloroethene	540		44	120	ug/L	EPA 8260D	
Vinyl chloride	170		36	120	ug/L	EPA 8260D	

Client ID: HMPN-MW0037-010.0-20210129 **Lab ID: AE00180-05**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	28		0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	2.3	I	0.53	2.5	ug/L	EPA 8260D	
Toluene	1.2	I	0.72	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	0.74	I	0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	4.8		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0037-010.0-20210129 **Lab ID: AE00180-05RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Xylenes (Total)	2.0	I	1.3	5.0	ug/L	EPA 8260D	

Client ID: HMPN-MW0038-020.0-20210129 **Lab ID: AE00180-06**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	17		0.62	2.5	ug/L	EPA 8260D	
Ethylbenzene	1.0	I	0.69	2.5	ug/L	EPA 8260D	
Toluene	5.1		0.72	2.5	ug/L	EPA 8260D	
Vinyl chloride	10		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0038-020.0-20210129 **Lab ID: AE00180-06RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Xylenes (Total)	5.2		1.3	5.0	ug/L	EPA 8260D	

Client ID: HMPN-MW0046-015.0-20210129 **Lab ID: AE00180-07**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	1.8	I	0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	7.3		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	6.0		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0047-025.0-20210129 **Lab ID: AE00180-08**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	4.4		0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	17		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	37		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0036-015.0-20210129 **Lab ID: AE00180-09**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	0.76	I	0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	11		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.2	I	0.71	2.5	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0011-025.0-20210129 **Lab ID: AE00180-10**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	1.7	I	0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	49		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	0.91	I	0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	23		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0029-015.0-20210129 **Lab ID: AE00180-11**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	48		0.53	2.5	ug/L	EPA 8260D	
Freon 113	3.2		0.73	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.4	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	25		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	4.1		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0030-025.0-20210129 **Lab ID: AE00180-12**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	150		1.3	6.2	ug/L	EPA 8260D	
Freon 113	14		1.8	6.2	ug/L	EPA 8260D	
Trichloroethene	180		2.2	6.2	ug/L	EPA 8260D	
Vinyl chloride	6.0	I	1.8	6.2	ug/L	EPA 8260D	

Client ID: HMPN-MW0031-035.0-20210129 **Lab ID: AE00180-13**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	490		5.3	25	ug/L	EPA 8260D	
Trichloroethene	510		8.9	25	ug/L	EPA 8260D	
Vinyl chloride	13	I	7.1	25	ug/L	EPA 8260D	

Client ID: HMPN-MW0032-042.5-20210129 **Lab ID: AE00180-14**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	5700		53	250	ug/L	EPA 8260D	
Trichloroethene	7400		89	250	ug/L	EPA 8260D	
Vinyl chloride	170	I	71	250	ug/L	EPA 8260D	

Client ID: HMPN-MW0033-047.5-20210129 **Lab ID: AE00180-15RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	21000		130	620	ug/L	EPA 8260D	
Trichloroethene	22000		220	620	ug/L	EPA 8260D	
Vinyl chloride	990		180	620	ug/L	EPA 8260D	

Client ID: HMPN-MW0008-025.0-20210129 **Lab ID: AE00180-16**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	41		0.53	2.5	ug/L	EPA 8260D	
Freon 113	3.8		0.73	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	0.76	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	14		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	0.89	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0035-035.0-20210129 **Lab ID: AE00180-18**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	1.3	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	9.8		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0035-035.0-20210129 **Lab ID: AE00180-18RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	5.5		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0035-035.0-20210129 **Lab ID: AE00180-18RE2**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	81		2.6	12	ug/L	EPA 8260D	

Client ID: HMPN-MW0034-015.0-20210129 **Lab ID: AE00180-19**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	15		0.53	2.5	ug/L	EPA 8260D	
Freon 113	1.1	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	6.3		0.89	2.5	ug/L	EPA 8260D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0034-015.0-20210129 **Lab ID:** AE00180-19RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	1.4	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0039-035.0-20210131 **Lab ID:** AE00180-20

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	1400		13	62	ug/L	EPA 8260D	
Trichloroethene	38	I	22	62	ug/L	EPA 8260D	

Client ID: HMPN-MW0039-035.0-20210131 **Lab ID:** AE00180-20RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	210		18	62	ug/L	EPA 8260D	

Client ID: HMPN-MW0040-042.5-20210131 **Lab ID:** AE00180-21

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	56		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	12		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0040-042.5-20210131 **Lab ID:** AE00180-21RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	12		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0009-010.0-20210131 **Lab ID:** AE00180-22

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	360		2.6	12	ug/L	EPA 8260D	
Trichloroethene	49		4.4	12	ug/L	EPA 8260D	

Client ID: HMPN-MW0009-010.0-20210131 **Lab ID:** AE00180-22RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	30		3.6	12	ug/L	EPA 8260D	

Client ID: HMPN-MW0004-010.0-20210131 **Lab ID:** AE00180-23

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	12		0.53	2.5	ug/L	EPA 8260D	
Freon 113	1.1	I	0.73	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.1	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	33		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0027-042.5-20210201 **Lab ID:** AE00180-24

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2000		260	1200	ug/L	EPA 8260D	
Freon 113	21000		360	1200	ug/L	EPA 8260D	

Client ID: HMPN-MW0027-042.5-20210201 **Lab ID:** AE00180-24RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	50000		1800	5000	ug/L	EPA 8260D	

Client ID: HMPN-MW0028-047.5-20210201 **Lab ID:** AE00180-25

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	11000		530	2500	ug/L	EPA 8260D	

Client ID: HMPN-MW0028-047.5-20210201 **Lab ID:** AE00180-25RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	110000		7300	25000	ug/L	EPA 8260D	
Trichloroethene	460000		8900	25000	ug/L	EPA 8260D	

Client ID: HMPN-MW0016-010.0-20210201 **Lab ID:** AE00180-26RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	71		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	6.0		0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	8.7		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0045-030.0-20210201 **Lab ID:** AE00180-27RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	6.3		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	0.94	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	8.1		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	5.9		0.71	2.5	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0002-035.0-20210201 **Lab ID:** AE00180-28

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	1100		36	120	ug/L	EPA 8260D	

Client ID: HMPN-MW0002-035.0-20210201 **Lab ID:** AE00180-28RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	140		5.3	25	ug/L	EPA 8260D	
Trichloroethene	690		8.9	25	ug/L	EPA 8260D	

Client ID: HMPN-DRUM222803-20210201 **Lab ID:** AE00180-29

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	860		26	120	ug/L	EPA 8260D	
Freon 113	970		36	120	ug/L	EPA 8260D	
Trichloroethene	4900		44	120	ug/L	EPA 8260D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0043-035.0-20210128 **Lab Sample ID:** AE00180-01 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 15:20 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 10:36	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 10:36	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**89**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Freon 113 [76-13-1]^	**1.8**	I	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	A-07, QM-19
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Trichloroethene [79-01-6]^	**25**		ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 10:36	KKW	

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ANALYTICAL RESULTS

Description: HMPN-MW0043-035.0-20210128 **Lab Sample ID:** AE00180-01 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 15:20 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 10:36	KKW	QV-01

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 10:36*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 10:36*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*95 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 10:36*	*KKW*	

ANALYTICAL RESULTS

Description: HMPN-MW0044-045.0-20210128 **Lab Sample ID:** AE00180-02 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 16:05 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	400	U	ug/L	500	400	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	270	U	ug/L	500	270	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,1,2-Trichloroethane [79-00-5]^	380	U	ug/L	500	380	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,1-Dichloroethane [75-34-3]^	310	U	ug/L	500	310	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,1-Dichloroethene [75-35-4]^	470	U	ug/L	500	470	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	350	U	ug/L	500	350	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	480	U	ug/L	500	480	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,2-Dibromoethane [106-93-4]^	390	U	ug/L	500	390	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,2-Dichlorobenzene [95-50-1]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,2-Dichloroethane [107-06-2]^	320	U	ug/L	500	320	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,2-Dichloropropane [78-87-5]^	400	U	ug/L	500	400	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,3-Dichlorobenzene [541-73-1]^	380	U	ug/L	500	380	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
1,4-Dichlorobenzene [106-46-7]^	380	U	ug/L	500	380	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
2-Butanone [78-93-3]^	2200	U	ug/L	500	2200	6200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
2-Hexanone [591-78-6]^	1200	U	ug/L	500	1200	6200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
4-Methyl-2-pentanone [108-10-1]^	1200	U	ug/L	500	1200	6200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Acetone [67-64-1]^	5000	U	ug/L	500	5000	12000	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Benzene [71-43-2]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Bromodichloromethane [75-27-4]^	260	U	ug/L	500	260	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Bromoform [75-25-2]^	380	U	ug/L	500	380	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Bromomethane [74-83-9]^	480	U	ug/L	500	480	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Carbon disulfide [75-15-0]^	1200	U	ug/L	500	1200	6200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Carbon Tetrachloride [56-23-5]^	470	U	ug/L	500	470	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Chlorobenzene [108-90-7]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Chloroethane [75-00-3]^	490	U	ug/L	500	490	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Chloroform [67-66-3]^	400	U	ug/L	500	400	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Chloromethane [74-87-3]^	410	U	ug/L	500	410	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**540**	I	ug/L	500	260	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	300	U	ug/L	500	300	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Cyclohexane [110-82-7]^	460	U	ug/L	500	460	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Dibromochloromethane [124-48-1]^	250	U	ug/L	500	250	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Dichlorodifluoromethane [75-71-8]^	370	U	ug/L	500	370	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Ethylbenzene [100-41-4]^	340	U	ug/L	500	340	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Freon 113 [76-13-1]^	**32000**		ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Isopropylbenzene [98-82-8]^	340	U	ug/L	500	340	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	QV-01
Methyl acetate [79-20-9]^	480	U	ug/L	500	480	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	A-07
Methylene Chloride [75-09-2]^	1200	U	ug/L	500	1200	6200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	300	U	ug/L	500	300	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Styrene [100-42-5]^	300	U	ug/L	500	300	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	QV-01
Tetrachloroethene [127-18-4]^	380	U	ug/L	500	380	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Toluene [108-88-3]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
trans-1,2-Dichloroethene [156-60-5]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Trichloroethene [79-01-6]^	**480**	I	ug/L	500	440	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Trichlorofluoromethane [75-69-4]^	470	U	ug/L	500	470	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Vinyl chloride [75-01-4]^	360	U	ug/L	500	360	1200	1B04020	EPA 8260D	02/04/21 11:06	KKW	
Xylenes (Total) [1330-20-7]	650	U	ug/L	500	650	2500	1B04020	EPA 8260D	02/04/21 11:06	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0044-045.0-20210128 **Lab Sample ID:** AE00180-02 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 16:05 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 11:06*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 11:06*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*92 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 11:06*	*KKW*	

ANALYTICAL RESULTS

Description: HMPN-MW0041-035.0-20210128 **Lab Sample ID:** AE00180-03 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 16:45 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B05008	EPA 8260D	02/05/21 13:54	KG	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 13:54	KG	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 13:54	KG	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B05008	EPA 8260D	02/05/21 13:54	KG	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 13:54	KG	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
cis-1,2-Dichloroethene [156-59-2]^	**99**		ug/L	2	1.1	5.0	1B04020	EPA 8260D	02/04/21 11:35	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 13:54	KG	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
trans-1,2-Dichloroethene [156-60-5]^	**0.95**	I	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Trichloroethene [79-01-6]^	**23**		ug/L	1	0.89	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Vinyl chloride [75-01-4]^	**32**		ug/L	1	0.71	2.5	1B05008	EPA 8260D	02/05/21 13:54	KG	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B05008	EPA 8260D	02/05/21 13:54	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0041-035.0-20210128 **Lab Sample ID:** AE00180-03 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 16:45 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 11:35*	*KKW*	
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 13:54*	*KG*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 11:35*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 13:54*	*KG*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 11:35*	*KKW*	
Toluene-d8	*49*	*1*	*50.0*	*98 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 13:54*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0042-042.5-20210128 **Lab Sample ID:** AE00180-04 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 17:35 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
2-Butanone [78-93-3]^	220	U	ug/L	50	220	620	1B04020	EPA 8260D	02/04/21 12:05	KKW	
2-Hexanone [591-78-6]^	120	U	ug/L	50	120	620	1B04020	EPA 8260D	02/04/21 12:05	KKW	
4-Methyl-2-pentanone [108-10-1]^	120	U	ug/L	50	120	620	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Acetone [67-64-1]^	500	U	ug/L	50	500	1200	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Benzene [71-43-2]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Bromoform [75-25-2]^	38	U	ug/L	50	38	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Carbon disulfide [75-15-0]^	120	U	ug/L	50	120	620	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Chloroform [67-66-3]^	40	U	ug/L	50	40	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2600**		ug/L	50	26	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Cyclohexane [110-82-7]^	46	U	ug/L	50	46	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Dibromochloromethane [124-48-1]^	25	U	ug/L	50	25	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Ethylbenzene [100-41-4]^	34	U	ug/L	50	34	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Freon 113 [76-13-1]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Isopropylbenzene [98-82-8]^	34	U	ug/L	50	34	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	QV-01
Methyl acetate [79-20-9]^	48	U	ug/L	50	48	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	A-07
Methylene Chloride [75-09-2]^	120	U	ug/L	50	120	620	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	30	U	ug/L	50	30	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Styrene [100-42-5]^	30	U	ug/L	50	30	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	QV-01
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Toluene [108-88-3]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Trichloroethene [79-01-6]^	**540**		ug/L	50	44	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Vinyl chloride [75-01-4]^	**170**		ug/L	50	36	120	1B04020	EPA 8260D	02/04/21 12:05	KKW	
Xylenes (Total) [1330-20-7]	65	U	ug/L	50	65	250	1B04020	EPA 8260D	02/04/21 12:05	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0042-042.5-20210128 **Lab Sample ID:** AE00180-04 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/28/21 17:35 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 12:05*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 12:05*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*95 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 12:05*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0037-010.0-20210129 **Lab Sample ID:** AE00180-05 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 09:20 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,1-Dichloroethane [75-34-3]^	**28**		ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 12:34	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 12:34	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2.3**	I	ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Toluene [108-88-3]^	**1.2**	I	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**0.74**	I	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Vinyl chloride [75-01-4]^	**4.8**		ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 12:34	KKW	
Xylenes (Total) [1330-20-7]	**2.0**	I	ug/L	1	1.3	5.0	1B05008	EPA 8260D	02/05/21 14:23	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0037-010.0-20210129 **Lab Sample ID:** AE00180-05 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 09:20 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 12:34*	*KKW*	
4-Bromofluorobenzene	*47*	*1*	*50.0*	*93 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 14:23*	*KG*	
Dibromofluoromethane	*54*	*1*	*50.0*	*107 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 12:34*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 14:23*	*KG*	
Toluene-d8	*47*	*1*	*50.0*	*93 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 12:34*	*KKW*	
Toluene-d8	*49*	*1*	*50.0*	*98 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 14:23*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0038-020.0-20210129 **Lab Sample ID:** AE00180-06 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 09:55 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,1-Dichloroethane [75-34-3]^	**17**		ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 13:04	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:04	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Ethylbenzene [100-41-4]^	**1.0**	I	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Toluene [108-88-3]^	**5.1**		ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Vinyl chloride [75-01-4]^	**10**		ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 13:04	KKW	
Xylenes (Total) [1330-20-7]	**5.2**		ug/L	1	1.3	5.0	1B05008	EPA 8260D	02/05/21 14:51	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0038-020.0-20210129 **Lab Sample ID:** AE00180-06 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 09:55 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 13:04*	*KKW*	
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 14:51*	*KG*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 13:04*	*KKW*	
Dibromofluoromethane	*56*	*1*	*50.0*	*112 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 14:51*	*KG*	
Toluene-d8	*47*	*1*	*50.0*	*95 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 13:04*	*KKW*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 14:51*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0046-015.0-20210129 **Lab Sample ID:** AE00180-07 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 10:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,1-Dichloroethane [75-34-3]^	**1.8**	I	ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 13:33	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:33	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**7.3**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Vinyl chloride [75-01-4]^	**6.0**		ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 13:33	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 13:33	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0046-015.0-20210129 **Lab Sample ID:** AE00180-07 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 10:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 13:33*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 13:33*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*92 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 13:33*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0047-025.0-20210129 **Lab Sample ID:** AE00180-08 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 11:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,1-Dichloroethane [75-34-3]^	**4.4**		ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 14:03	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:03	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**17**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Vinyl chloride [75-01-4]^	**37**		ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 14:03	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 14:03	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0047-025.0-20210129 **Lab Sample ID:** AE00180-08 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 11:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*111 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 14:03*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 14:03*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*92 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 14:03*	*KKW*	

ANALYTICAL RESULTS

Description: HMPN-MW0036-015.0-20210129 **Lab Sample ID:** AE00180-09 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 11:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,1-Dichloroethane [75-34-3]^	**0.76**	I	ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 14:33	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:33	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**11**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Vinyl chloride [75-01-4]^	**1.2**	I	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 14:33	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 14:33	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0036-015.0-20210129 **Lab Sample ID:** AE00180-09 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 11:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 14:33*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 14:33*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 14:33*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0011-025.0-20210129 **Lab Sample ID:** AE00180-10 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 12:05 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,1-Dichloroethane [75-34-3]^	**1.7**	I	ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 15:02	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:02	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**49**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**0.91**	I	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Vinyl chloride [75-01-4]^	**23**		ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 15:02	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 15:02	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0011-025.0-20210129 **Lab Sample ID:** AE00180-10 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 12:05 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 15:02*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 15:02*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 15:02*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0029-015.0-20210129 **Lab Sample ID:** AE00180-11 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 12:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 15:32	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:32	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**48**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Freon 113 [76-13-1]^	**3.2**		ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.4**	I	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Trichloroethene [79-01-6]^	**25**		ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Vinyl chloride [75-01-4]^	**4.1**		ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 15:32	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 15:32	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0029-015.0-20210129 **Lab Sample ID:** AE00180-11 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 12:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 15:32*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 15:32*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 15:32*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0030-025.0-20210129 **Lab Sample ID:** AE00180-12 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 13:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	2.0	U	ug/L	2.5	2.0	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	1.4	U	ug/L	2.5	1.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,1,2-Trichloroethane [79-00-5]^	1.9	U	ug/L	2.5	1.9	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,1-Dichloroethane [75-34-3]^	1.6	U	ug/L	2.5	1.6	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,1-Dichloroethene [75-35-4]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,2-Dibromoethane [106-93-4]^	2.0	U	ug/L	2.5	2.0	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,2-Dichlorobenzene [95-50-1]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,2-Dichloroethane [107-06-2]^	1.6	U	ug/L	2.5	1.6	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,2-Dichloropropane [78-87-5]^	2.0	U	ug/L	2.5	2.0	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,3-Dichlorobenzene [541-73-1]^	1.9	U	ug/L	2.5	1.9	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
1,4-Dichlorobenzene [106-46-7]^	1.9	U	ug/L	2.5	1.9	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
2-Butanone [78-93-3]^	11	U	ug/L	2.5	11	31	1B04020	EPA 8260D	02/04/21 16:01	KKW	
2-Hexanone [591-78-6]^	6.2	U	ug/L	2.5	6.2	31	1B04020	EPA 8260D	02/04/21 16:01	KKW	
4-Methyl-2-pentanone [108-10-1]^	6.2	U	ug/L	2.5	6.2	31	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Acetone [67-64-1]^	25	U	ug/L	2.5	25	62	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Benzene [71-43-2]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Bromodichloromethane [75-27-4]^	1.3	U	ug/L	2.5	1.3	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Bromoform [75-25-2]^	1.9	U	ug/L	2.5	1.9	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Bromomethane [74-83-9]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Carbon disulfide [75-15-0]^	6.2	U	ug/L	2.5	6.2	31	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Carbon Tetrachloride [56-23-5]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Chlorobenzene [108-90-7]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Chloroethane [75-00-3]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Chloroform [67-66-3]^	2.0	U	ug/L	2.5	2.0	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Chloromethane [74-87-3]^	2.0	U	ug/L	2.5	2.0	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**150**		ug/L	2.5	1.3	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	1.5	U	ug/L	2.5	1.5	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Cyclohexane [110-82-7]^	2.3	U	ug/L	2.5	2.3	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Dibromochloromethane [124-48-1]^	1.2	U	ug/L	2.5	1.2	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Dichlorodifluoromethane [75-71-8]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Ethylbenzene [100-41-4]^	1.7	U	ug/L	2.5	1.7	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Freon 113 [76-13-1]^	**14**		ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Isopropylbenzene [98-82-8]^	1.7	U	ug/L	2.5	1.7	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	QV-01
Methyl acetate [79-20-9]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	A-07
Methylene Chloride [75-09-2]^	6.2	U	ug/L	2.5	6.2	31	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	1.5	U	ug/L	2.5	1.5	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Styrene [100-42-5]^	1.5	U	ug/L	2.5	1.5	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	QV-01
Tetrachloroethene [127-18-4]^	1.9	U	ug/L	2.5	1.9	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Toluene [108-88-3]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
trans-1,2-Dichloroethene [156-60-5]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	1.8	U	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Trichloroethene [79-01-6]^	**180**		ug/L	2.5	2.2	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Trichlorofluoromethane [75-69-4]^	2.4	U	ug/L	2.5	2.4	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Vinyl chloride [75-01-4]^	**6.0**	I	ug/L	2.5	1.8	6.2	1B04020	EPA 8260D	02/04/21 16:01	KKW	
Xylenes (Total) [1330-20-7]	3.2	U	ug/L	2.5	3.2	12	1B04020	EPA 8260D	02/04/21 16:01	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0030-025.0-20210129 **Lab Sample ID:** AE00180-12 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 13:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 16:01*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 16:01*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*95 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 16:01*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0031-035.0-20210129 **Lab Sample ID:** AE00180-13 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 13:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
2-Butanone [78-93-3]^	45	U	ug/L	10	45	120	1B04020	EPA 8260D	02/04/21 16:31	KKW	
2-Hexanone [591-78-6]^	25	U	ug/L	10	25	120	1B04020	EPA 8260D	02/04/21 16:31	KKW	
4-Methyl-2-pentanone [108-10-1]^	25	U	ug/L	10	25	120	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Acetone [67-64-1]^	100	U	ug/L	10	100	250	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Benzene [71-43-2]^	7.1	U	ug/L	10	7.1	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Carbon disulfide [75-15-0]^	25	U	ug/L	10	25	120	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**490**		ug/L	10	5.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Cyclohexane [110-82-7]^	9.3	U	ug/L	10	9.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Ethylbenzene [100-41-4]^	6.9	U	ug/L	10	6.9	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Freon 113 [76-13-1]^	7.3	U	ug/L	10	7.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Isopropylbenzene [98-82-8]^	6.7	U	ug/L	10	6.7	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	QV-01
Methyl acetate [79-20-9]^	9.5	U	ug/L	10	9.5	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	A-07
Methylene Chloride [75-09-2]^	25	U	ug/L	10	25	120	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	6.0	U	ug/L	10	6.0	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Styrene [100-42-5]^	6.1	U	ug/L	10	6.1	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	QV-01
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Toluene [108-88-3]^	7.2	U	ug/L	10	7.2	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Trichloroethene [79-01-6]^	**510**		ug/L	10	8.9	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Vinyl chloride [75-01-4]^	**13**	I	ug/L	10	7.1	25	1B04020	EPA 8260D	02/04/21 16:31	KKW	
Xylenes (Total) [1330-20-7]	13	U	ug/L	10	13	50	1B04020	EPA 8260D	02/04/21 16:31	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0031-035.0-20210129 **Lab Sample ID:** AE00180-13 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 13:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 16:31*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 16:31*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*93 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 16:31*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0032-042.5-20210129 **Lab Sample ID:** AE00180-14 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 14:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
2-Butanone [78-93-3]^	450	U	ug/L	100	450	1200	1B04020	EPA 8260D	02/04/21 17:00	KKW	
2-Hexanone [591-78-6]^	250	U	ug/L	100	250	1200	1B04020	EPA 8260D	02/04/21 17:00	KKW	
4-Methyl-2-pentanone [108-10-1]^	250	U	ug/L	100	250	1200	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Acetone [67-64-1]^	1000	U	ug/L	100	1000	2500	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Benzene [71-43-2]^	71	U	ug/L	100	71	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Bromoform [75-25-2]^	75	U	ug/L	100	75	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Carbon disulfide [75-15-0]^	250	U	ug/L	100	250	1200	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Chloroform [67-66-3]^	80	U	ug/L	100	80	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**5700**		ug/L	100	53	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Cyclohexane [110-82-7]^	93	U	ug/L	100	93	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Dibromochloromethane [124-48-1]^	50	U	ug/L	100	50	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Ethylbenzene [100-41-4]^	69	U	ug/L	100	69	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Freon 113 [76-13-1]^	73	U	ug/L	100	73	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Isopropylbenzene [98-82-8]^	67	U	ug/L	100	67	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	QV-01
Methyl acetate [79-20-9]^	95	U	ug/L	100	95	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	A-07
Methylene Chloride [75-09-2]^	250	U	ug/L	100	250	1200	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	60	U	ug/L	100	60	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Styrene [100-42-5]^	61	U	ug/L	100	61	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	QV-01
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Toluene [108-88-3]^	72	U	ug/L	100	72	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Trichloroethene [79-01-6]^	**7400**		ug/L	100	89	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Vinyl chloride [75-01-4]^	**170**	I	ug/L	100	71	250	1B04020	EPA 8260D	02/04/21 17:00	KKW	
Xylenes (Total) [1330-20-7]	130	U	ug/L	100	130	500	1B04020	EPA 8260D	02/04/21 17:00	KKW	QV-01

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0032-042.5-20210129 **Lab Sample ID:** AE00180-14 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 14:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*110 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 17:00*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 17:00*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 17:00*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0033-047.5-20210129 **Lab Sample ID:** AE00180-15 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 14:35 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	200	U	ug/L	250	200	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,1,2,2-Tetrachloroethane [79-34-5]^	140	U	ug/L	250	140	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,1,2-Trichloroethane [79-00-5]^	190	U	ug/L	250	190	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,1-Dichloroethane [75-34-3]^	160	U	ug/L	250	160	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,1-Dichloroethene [75-35-4]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,2,4-Trichlorobenzene [120-82-1]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,2-Dibromo-3-chloropropane [96-12-8]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,2-Dibromoethane [106-93-4]^	200	U	ug/L	250	200	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,2-Dichlorobenzene [95-50-1]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,2-Dichloroethane [107-06-2]^	160	U	ug/L	250	160	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,2-Dichloropropane [78-87-5]^	200	U	ug/L	250	200	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,3-Dichlorobenzene [541-73-1]^	190	U	ug/L	250	190	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
1,4-Dichlorobenzene [106-46-7]^	190	U	ug/L	250	190	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
2-Butanone [78-93-3]^	1100	U	ug/L	250	1100	3100	1B05008	EPA 8260D	02/05/21 12:56	KG	
2-Hexanone [591-78-6]^	620	U	ug/L	250	620	3100	1B05008	EPA 8260D	02/05/21 12:56	KG	
4-Methyl-2-pentanone [108-10-1]^	620	U	ug/L	250	620	3100	1B05008	EPA 8260D	02/05/21 12:56	KG	
Acetone [67-64-1]^	2500	U	ug/L	250	2500	6200	1B05008	EPA 8260D	02/05/21 12:56	KG	
Benzene [71-43-2]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Bromodichloromethane [75-27-4]^	130	U	ug/L	250	130	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Bromoform [75-25-2]^	190	U	ug/L	250	190	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Bromomethane [74-83-9]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	QV-01
Carbon disulfide [75-15-0]^	620	U	ug/L	250	620	3100	1B05008	EPA 8260D	02/05/21 12:56	KG	
Carbon Tetrachloride [56-23-5]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Chlorobenzene [108-90-7]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Chloroethane [75-00-3]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Chloroform [67-66-3]^	200	U	ug/L	250	200	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Chloromethane [74-87-3]^	200	U	ug/L	250	200	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
cis-1,2-Dichloroethene [156-59-2]^	**21000**		ug/L	250	130	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
cis-1,3-Dichloropropene [10061-01-5]^	150	U	ug/L	250	150	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Cyclohexane [110-82-7]^	230	U	ug/L	250	230	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Dibromochloromethane [124-48-1]^	120	U	ug/L	250	120	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Dichlorodifluoromethane [75-71-8]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Ethylbenzene [100-41-4]^	170	U	ug/L	250	170	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Freon 113 [76-13-1]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Isopropylbenzene [98-82-8]^	170	U	ug/L	250	170	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Methyl acetate [79-20-9]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Methylene Chloride [75-09-2]^	620	U	ug/L	250	620	3100	1B05008	EPA 8260D	02/05/21 12:56	KG	
Methyl-tert-Butyl Ether [1634-04-4]^	150	U	ug/L	250	150	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Styrene [100-42-5]^	150	U	ug/L	250	150	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Tetrachloroethene [127-18-4]^	190	U	ug/L	250	190	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Toluene [108-88-3]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
trans-1,2-Dichloroethene [156-60-5]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
trans-1,3-Dichloropropene [10061-02-6]^	180	U	ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Trichloroethene [79-01-6]^	**22000**		ug/L	250	220	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Trichlorofluoromethane [75-69-4]^	240	U	ug/L	250	240	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Vinyl chloride [75-01-4]^	**990**		ug/L	250	180	620	1B05008	EPA 8260D	02/05/21 12:56	KG	
Xylenes (Total) [1330-20-7]	320	U	ug/L	250	320	1200	1B05008	EPA 8260D	02/05/21 12:56	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0033-047.5-20210129 **Lab Sample ID:** AE00180-15 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 14:35 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 12:56*	*KG*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 12:56*	*KG*	
Toluene-d8	*49*	*1*	*50.0*	*97 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 12:56*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0008-025.0-20210129 **Lab Sample ID:** AE00180-16 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 15:15 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04020	EPA 8260D	02/04/21 17:59	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 17:59	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**41**		ug/L	1	0.53	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Freon 113 [76-13-1]^	**3.8**		ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	QV-01
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	QV-01
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**0.76**	I	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Trichloroethene [79-01-6]^	**14**		ug/L	1	0.89	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Vinyl chloride [75-01-4]^	**0.89**	I	ug/L	1	0.71	2.5	1B04020	EPA 8260D	02/04/21 17:59	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04020	EPA 8260D	02/04/21 17:59	KKW	QV-01

ANALYTICAL RESULTS

Description: HMPN-MW0008-025.0-20210129 **Lab Sample ID:** AE00180-16 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 15:15 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*56*	*1*	*50.0*	*112 %*	*41-142*	*1B04020*	*EPA 8260D*	*02/04/21 17:59*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*1B04020*	*EPA 8260D*	*02/04/21 17:59*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B04020*	*EPA 8260D*	*02/04/21 17:59*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0024-060.0-20210129 **Lab Sample ID:** AE00180-17 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 15:45 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04041	EPA 8260D	02/05/21 00:55	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 00:55	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 00:55	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04041	EPA 8260D	02/05/21 00:55	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0024-060.0-20210129 **Lab Sample ID:** AE00180-17 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 15:45 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*110 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 00:55*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 00:55*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 00:55*	*KKW*	

ANALYTICAL RESULTS

Description: HMPN-MW0035-035.0-20210129 **Lab Sample ID:** AE00180-18 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 16:40 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04041	EPA 8260D	02/05/21 01:25	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:25	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**81**		ug/L	5	2.6	12	1B05029	EPA 8260D	02/05/21 13:22	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.3**	I	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Trichloroethene [79-01-6]^	**9.8**		ug/L	1	0.89	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 01:25	KKW	
Vinyl chloride [75-01-4]^	**5.5**		ug/L	1	0.71	2.5	1B05029	EPA 8260D	02/05/21 12:23	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04041	EPA 8260D	02/05/21 01:25	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0035-035.0-20210129 **Lab Sample ID:** AE00180-18 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 16:40 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 01:25*	*KKW*	
4-Bromofluorobenzene	*55*	*1*	*50.0*	*111 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 12:23*	*KKW*	
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 13:22*	*KKW*	
Dibromofluoromethane	*55*	*1*	*50.0*	*111 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 01:25*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 12:23*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*101 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 13:22*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 01:25*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 12:23*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*93 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 13:22*	*KKW*	

ANALYTICAL RESULTS

Description: HMPN-MW0034-015.0-20210129 **Lab Sample ID:** AE00180-19 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 17:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04041	EPA 8260D	02/05/21 01:54	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:54	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**15**		ug/L	1	0.53	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Freon 113 [76-13-1]^	**1.1**	I	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Trichloroethene [79-01-6]^	**6.3**		ug/L	1	0.89	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 01:54	KKW	
Vinyl chloride [75-01-4]^	**1.4**	I	ug/L	1	0.71	2.5	1B05029	EPA 8260D	02/05/21 12:53	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04041	EPA 8260D	02/05/21 01:54	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0034-015.0-20210129 **Lab Sample ID:** AE00180-19 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/29/21 17:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 01:54*	*KKW*	
4-Bromofluorobenzene	*54*	*1*	*50.0*	*107 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 12:53*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 01:54*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 12:53*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*93 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 01:54*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 12:53*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0039-035.0-20210131 **Lab Sample ID:** AE00180-20 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 14:40 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	20	U	ug/L	25	20	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	14	U	ug/L	25	14	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,1,2-Trichloroethane [79-00-5]^	19	U	ug/L	25	19	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,1-Dichloroethane [75-34-3]^	16	U	ug/L	25	16	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,1-Dichloroethene [75-35-4]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,2-Dibromoethane [106-93-4]^	20	U	ug/L	25	20	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,2-Dichlorobenzene [95-50-1]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,2-Dichloroethane [107-06-2]^	16	U	ug/L	25	16	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,2-Dichloropropane [78-87-5]^	20	U	ug/L	25	20	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,3-Dichlorobenzene [541-73-1]^	19	U	ug/L	25	19	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
1,4-Dichlorobenzene [106-46-7]^	19	U	ug/L	25	19	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
2-Butanone [78-93-3]^	110	U	ug/L	25	110	310	1B04041	EPA 8260D	02/05/21 02:24	KKW	
2-Hexanone [591-78-6]^	62	U	ug/L	25	62	310	1B04041	EPA 8260D	02/05/21 02:24	KKW	
4-Methyl-2-pentanone [108-10-1]^	62	U	ug/L	25	62	310	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Acetone [67-64-1]^	250	U	ug/L	25	250	620	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Benzene [71-43-2]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Bromodichloromethane [75-27-4]^	13	U	ug/L	25	13	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Bromoform [75-25-2]^	19	U	ug/L	25	19	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Bromomethane [74-83-9]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	QV-01
Carbon disulfide [75-15-0]^	62	U	ug/L	25	62	310	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Carbon Tetrachloride [56-23-5]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Chlorobenzene [108-90-7]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Chloroethane [75-00-3]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Chloroform [67-66-3]^	20	U	ug/L	25	20	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Chloromethane [74-87-3]^	20	U	ug/L	25	20	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**1400**		ug/L	25	13	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	15	U	ug/L	25	15	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Cyclohexane [110-82-7]^	23	U	ug/L	25	23	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Dibromochloromethane [124-48-1]^	12	U	ug/L	25	12	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Dichlorodifluoromethane [75-71-8]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Ethylbenzene [100-41-4]^	17	U	ug/L	25	17	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Freon 113 [76-13-1]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Isopropylbenzene [98-82-8]^	17	U	ug/L	25	17	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Methyl acetate [79-20-9]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	A-07
Methylene Chloride [75-09-2]^	62	U	ug/L	25	62	310	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	15	U	ug/L	25	15	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Styrene [100-42-5]^	15	U	ug/L	25	15	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Tetrachloroethene [127-18-4]^	19	U	ug/L	25	19	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Toluene [108-88-3]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
trans-1,2-Dichloroethene [156-60-5]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	18	U	ug/L	25	18	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Trichloroethene [79-01-6]^	**38**	I	ug/L	25	22	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Trichlorofluoromethane [75-69-4]^	24	U	ug/L	25	24	62	1B04041	EPA 8260D	02/05/21 02:24	KKW	
Vinyl chloride [75-01-4]^	**210**		ug/L	25	18	62	1B05029	EPA 8260D	02/05/21 13:52	KKW	
Xylenes (Total) [1330-20-7]	32	U	ug/L	25	32	120	1B04041	EPA 8260D	02/05/21 02:24	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0039-035.0-20210131 **Lab Sample ID:** AE00180-20 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 14:40 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 02:24*	*KKW*	
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 13:52*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 02:24*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*101 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 13:52*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 02:24*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*93 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 13:52*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0040-042.5-20210131 **Lab Sample ID:** AE00180-21 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 15:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04041	EPA 8260D	02/05/21 02:54	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 02:54	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**56**		ug/L	1	0.53	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Trichloroethene [79-01-6]^	**12**		ug/L	1	0.89	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 02:54	KKW	
Vinyl chloride [75-01-4]^	**12**		ug/L	1	0.71	2.5	1B05029	EPA 8260D	02/05/21 14:21	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04041	EPA 8260D	02/05/21 02:54	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0040-042.5-20210131 **Lab Sample ID:** AE00180-21 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 15:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 02:54*	*KKW*	
4-Bromofluorobenzene	*53*	*1*	*50.0*	*106 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 14:21*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 02:54*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 14:21*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*97 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 02:54*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*91 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 14:21*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0009-010.0-20210131 **Lab Sample ID:** AE00180-22 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 16:10 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,1-Dichloroethane [75-34-3]^	3.1	U	ug/L	5	3.1	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
2-Butanone [78-93-3]^	22	U	ug/L	5	22	62	1B04041	EPA 8260D	02/05/21 03:23	KKW	
2-Hexanone [591-78-6]^	12	U	ug/L	5	12	62	1B04041	EPA 8260D	02/05/21 03:23	KKW	
4-Methyl-2-pentanone [108-10-1]^	12	U	ug/L	5	12	62	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Acetone [67-64-1]^	50	U	ug/L	5	50	120	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Benzene [71-43-2]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	QV-01
Carbon disulfide [75-15-0]^	12	U	ug/L	5	12	62	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**360**		ug/L	5	2.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Cyclohexane [110-82-7]^	4.6	U	ug/L	5	4.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Dibromochloromethane [124-48-1]^	2.5	U	ug/L	5	2.5	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Ethylbenzene [100-41-4]^	3.4	U	ug/L	5	3.4	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Freon 113 [76-13-1]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Isopropylbenzene [98-82-8]^	3.4	U	ug/L	5	3.4	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Methyl acetate [79-20-9]^	4.8	U	ug/L	5	4.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	A-07
Methylene Chloride [75-09-2]^	12	U	ug/L	5	12	62	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	3.0	U	ug/L	5	3.0	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Styrene [100-42-5]^	3.0	U	ug/L	5	3.0	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Toluene [108-88-3]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
trans-1,2-Dichloroethene [156-60-5]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Trichloroethene [79-01-6]^	**49**		ug/L	5	4.4	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	12	1B04041	EPA 8260D	02/05/21 03:23	KKW	
Vinyl chloride [75-01-4]^	**30**		ug/L	5	3.6	12	1B05029	EPA 8260D	02/05/21 14:51	KKW	
Xylenes (Total) [1330-20-7]	6.5	U	ug/L	5	6.5	25	1B04041	EPA 8260D	02/05/21 03:23	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0009-010.0-20210131 **Lab Sample ID:** AE00180-22 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 16:10 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 03:23*	*KKW*	
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 14:51*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*107 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 03:23*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 14:51*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*95 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 03:23*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*95 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 14:51*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0004-010.0-20210131 **Lab Sample ID:** AE00180-23 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 17:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B04041	EPA 8260D	02/05/21 03:53	KKW	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 03:53	KKW	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**12**		ug/L	1	0.53	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Freon 113 [76-13-1]^	**1.1**	I	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	A-07
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
trans-1,2-Dichloroethene [156-60-5]^	**1.1**	I	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Trichloroethene [79-01-6]^	**33**		ug/L	1	0.89	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1B04041	EPA 8260D	02/05/21 03:53	KKW	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B04041	EPA 8260D	02/05/21 03:53	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0004-010.0-20210131 **Lab Sample ID:** AE00180-23 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 01/31/21 17:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 03:53*	*KKW*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 03:53*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*94 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 03:53*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0027-042.5-20210201 **Lab Sample ID:** AE00180-24 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 08:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	400	U	ug/L	500	400	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	270	U	ug/L	500	270	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,1,2-Trichloroethane [79-00-5]^	380	U	ug/L	500	380	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,1-Dichloroethane [75-34-3]^	310	U	ug/L	500	310	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,1-Dichloroethene [75-35-4]^	470	U	ug/L	500	470	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	350	U	ug/L	500	350	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	480	U	ug/L	500	480	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,2-Dibromoethane [106-93-4]^	390	U	ug/L	500	390	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,2-Dichlorobenzene [95-50-1]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,2-Dichloroethane [107-06-2]^	320	U	ug/L	500	320	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,2-Dichloropropane [78-87-5]^	400	U	ug/L	500	400	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,3-Dichlorobenzene [541-73-1]^	380	U	ug/L	500	380	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
1,4-Dichlorobenzene [106-46-7]^	380	U	ug/L	500	380	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
2-Butanone [78-93-3]^	2200	U	ug/L	500	2200	6200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
2-Hexanone [591-78-6]^	1200	U	ug/L	500	1200	6200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
4-Methyl-2-pentanone [108-10-1]^	1200	U	ug/L	500	1200	6200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Acetone [67-64-1]^	5000	U	ug/L	500	5000	12000	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Benzene [71-43-2]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Bromodichloromethane [75-27-4]^	260	U	ug/L	500	260	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Bromoform [75-25-2]^	380	U	ug/L	500	380	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Bromomethane [74-83-9]^	480	U	ug/L	500	480	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	QV-01
Carbon disulfide [75-15-0]^	1200	U	ug/L	500	1200	6200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Carbon Tetrachloride [56-23-5]^	470	U	ug/L	500	470	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Chlorobenzene [108-90-7]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Chloroethane [75-00-3]^	490	U	ug/L	500	490	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Chloroform [67-66-3]^	400	U	ug/L	500	400	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Chloromethane [74-87-3]^	410	U	ug/L	500	410	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**2000**		ug/L	500	260	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	300	U	ug/L	500	300	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Cyclohexane [110-82-7]^	460	U	ug/L	500	460	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Dibromochloromethane [124-48-1]^	250	U	ug/L	500	250	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Dichlorodifluoromethane [75-71-8]^	370	U	ug/L	500	370	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Ethylbenzene [100-41-4]^	340	U	ug/L	500	340	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Freon 113 [76-13-1]^	**21000**		ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Isopropylbenzene [98-82-8]^	340	U	ug/L	500	340	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Methyl acetate [79-20-9]^	480	U	ug/L	500	480	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	A-07
Methylene Chloride [75-09-2]^	1200	U	ug/L	500	1200	6200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	300	U	ug/L	500	300	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Styrene [100-42-5]^	300	U	ug/L	500	300	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Tetrachloroethene [127-18-4]^	380	U	ug/L	500	380	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Toluene [108-88-3]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
trans-1,2-Dichloroethene [156-60-5]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Trichloroethene [79-01-6]^	**50000**		ug/L	2000	1800	5000	1B05029	EPA 8260D	02/05/21 15:21	KKW	
Trichlorofluoromethane [75-69-4]^	470	U	ug/L	500	470	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Vinyl chloride [75-01-4]^	360	U	ug/L	500	360	1200	1B04041	EPA 8260D	02/05/21 04:23	KKW	
Xylenes (Total) [1330-20-7]	650	U	ug/L	500	650	2500	1B04041	EPA 8260D	02/05/21 04:23	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0027-042.5-20210201 **Lab Sample ID:** AE00180-24 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 08:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*55*	*1*	*50.0*	*110 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 04:23*	*KKW*	
4-Bromofluorobenzene	*56*	*1*	*50.0*	*112 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 15:21*	*KKW*	
Dibromofluoromethane	*49*	*1*	*50.0*	*99 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 04:23*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*101 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 15:21*	*KKW*	
Toluene-d8	*47*	*1*	*50.0*	*95 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 04:23*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*92 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 15:21*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0028-047.5-20210201 **Lab Sample ID:** AE00180-25 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 09:15 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	800	U	ug/L	1000	800	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	540	U	ug/L	1000	540	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,1,2-Trichloroethane [79-00-5]^	760	U	ug/L	1000	760	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,1-Dichloroethane [75-34-3]^	620	U	ug/L	1000	620	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,1-Dichloroethene [75-35-4]^	940	U	ug/L	1000	940	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	700	U	ug/L	1000	700	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	960	U	ug/L	1000	960	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,2-Dibromoethane [106-93-4]^	780	U	ug/L	1000	780	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,2-Dichlorobenzene [95-50-1]^	730	U	ug/L	1000	730	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,2-Dichloroethane [107-06-2]^	630	U	ug/L	1000	630	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,2-Dichloropropane [78-87-5]^	800	U	ug/L	1000	800	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,3-Dichlorobenzene [541-73-1]^	770	U	ug/L	1000	770	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
1,4-Dichlorobenzene [106-46-7]^	760	U	ug/L	1000	760	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
2-Butanone [78-93-3]^	4500	U	ug/L	1000	4500	12000	1B04041	EPA 8260D	02/05/21 04:52	KKW	
2-Hexanone [591-78-6]^	2500	U	ug/L	1000	2500	12000	1B04041	EPA 8260D	02/05/21 04:52	KKW	
4-Methyl-2-pentanone [108-10-1]^	2500	U	ug/L	1000	2500	12000	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Acetone [67-64-1]^	10000	U	ug/L	1000	10000	25000	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Benzene [71-43-2]^	710	U	ug/L	1000	710	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Bromodichloromethane [75-27-4]^	520	U	ug/L	1000	520	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Bromoform [75-25-2]^	750	U	ug/L	1000	750	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Bromomethane [74-83-9]^	950	U	ug/L	1000	950	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	QV-01
Carbon disulfide [75-15-0]^	2500	U	ug/L	1000	2500	12000	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Carbon Tetrachloride [56-23-5]^	940	U	ug/L	1000	940	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Chlorobenzene [108-90-7]^	720	U	ug/L	1000	720	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Chloroethane [75-00-3]^	980	U	ug/L	1000	980	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Chloroform [67-66-3]^	800	U	ug/L	1000	800	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Chloromethane [74-87-3]^	820	U	ug/L	1000	820	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**11000**		ug/L	1000	530	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	590	U	ug/L	1000	590	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Cyclohexane [110-82-7]^	930	U	ug/L	1000	930	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Dibromochloromethane [124-48-1]^	500	U	ug/L	1000	500	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Dichlorodifluoromethane [75-71-8]^	740	U	ug/L	1000	740	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Ethylbenzene [100-41-4]^	690	U	ug/L	1000	690	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Freon 113 [76-13-1]^	**110000**		ug/L	10000	7300	25000	1B05029	EPA 8260D	02/05/21 15:50	KKW	
Isopropylbenzene [98-82-8]^	670	U	ug/L	1000	670	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Methyl acetate [79-20-9]^	950	U	ug/L	1000	950	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	A-07
Methylene Chloride [75-09-2]^	2500	U	ug/L	1000	2500	12000	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	600	U	ug/L	1000	600	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Styrene [100-42-5]^	610	U	ug/L	1000	610	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Tetrachloroethene [127-18-4]^	760	U	ug/L	1000	760	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Toluene [108-88-3]^	720	U	ug/L	1000	720	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
trans-1,2-Dichloroethene [156-60-5]^	730	U	ug/L	1000	730	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	730	U	ug/L	1000	730	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Trichloroethene [79-01-6]^	**460000**		ug/L	10000	8900	25000	1B05029	EPA 8260D	02/05/21 15:50	KKW	
Trichlorofluoromethane [75-69-4]^	940	U	ug/L	1000	940	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Vinyl chloride [75-01-4]^	710	U	ug/L	1000	710	2500	1B04041	EPA 8260D	02/05/21 04:52	KKW	
Xylenes (Total) [1330-20-7]	1300	U	ug/L	1000	1300	5000	1B04041	EPA 8260D	02/05/21 04:52	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0028-047.5-20210201 **Lab Sample ID:** AE00180-25 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 09:15 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*107 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 04:52*	*KKW*	
4-Bromofluorobenzene	*53*	*1*	*50.0*	*107 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 15:50*	*KKW*	
Dibromofluoromethane	*50*	*1*	*50.0*	*101 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 04:52*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 15:50*	*KKW*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 04:52*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*93 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 15:50*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0016-010.0-20210201 **Lab Sample ID:** AE00180-26 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 09:45 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B05008	EPA 8260D	02/05/21 15:20	KG	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:20	KG	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:20	KG	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B05008	EPA 8260D	02/05/21 15:20	KG	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:20	KG	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
cis-1,2-Dichloroethene [156-59-2]^	**71**		ug/L	1	0.53	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:20	KG	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
trans-1,2-Dichloroethene [156-60-5]^	**6.0**		ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Vinyl chloride [75-01-4]^	**8.7**		ug/L	1	0.71	2.5	1B05008	EPA 8260D	02/05/21 15:20	KG	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B05008	EPA 8260D	02/05/21 15:20	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0016-010.0-20210201 **Lab Sample ID:** AE00180-26 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 09:45 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*47*	*1*	*50.0*	*94 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 15:20*	*KG*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 15:20*	*KG*	
Toluene-d8	*49*	*1*	*50.0*	*97 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 15:20*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0045-030.0-20210201 **Lab Sample ID:** AE00180-27 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 10:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1B05008	EPA 8260D	02/05/21 15:49	KG	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:49	KG	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:49	KG	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1B05008	EPA 8260D	02/05/21 15:49	KG	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:49	KG	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
cis-1,2-Dichloroethene [156-59-2]^	**6.3**		ug/L	1	0.53	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1B05008	EPA 8260D	02/05/21 15:49	KG	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
trans-1,2-Dichloroethene [156-60-5]^	**0.94**	I	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Trichloroethene [79-01-6]^	**8.1**		ug/L	1	0.89	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Vinyl chloride [75-01-4]^	**5.9**		ug/L	1	0.71	2.5	1B05008	EPA 8260D	02/05/21 15:49	KG	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1B05008	EPA 8260D	02/05/21 15:49	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0045-030.0-20210201 **Lab Sample ID:** AE00180-27 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 10:30 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*48*	*1*	*50.0*	*95 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 15:49*	*KG*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 15:49*	*KG*	
Toluene-d8	*49*	*1*	*50.0*	*99 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 15:49*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0002-035.0-20210201 **Lab Sample ID:** AE00180-28 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 11:10 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
2-Butanone [78-93-3]^	45	U	ug/L	10	45	120	1B05008	EPA 8260D	02/05/21 13:25	KG	
2-Hexanone [591-78-6]^	25	U	ug/L	10	25	120	1B05008	EPA 8260D	02/05/21 13:25	KG	
4-Methyl-2-pentanone [108-10-1]^	25	U	ug/L	10	25	120	1B05008	EPA 8260D	02/05/21 13:25	KG	
Acetone [67-64-1]^	100	U	ug/L	10	100	250	1B05008	EPA 8260D	02/05/21 13:25	KG	
Benzene [71-43-2]^	7.1	U	ug/L	10	7.1	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1B05008	EPA 8260D	02/05/21 13:25	KG	QV-01
Carbon disulfide [75-15-0]^	25	U	ug/L	10	25	120	1B05008	EPA 8260D	02/05/21 13:25	KG	
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
cis-1,2-Dichloroethene [156-59-2]^	**140**		ug/L	10	5.3	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Cyclohexane [110-82-7]^	9.3	U	ug/L	10	9.3	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Ethylbenzene [100-41-4]^	6.9	U	ug/L	10	6.9	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Freon 113 [76-13-1]^	**1100**		ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:21	KKW	
Isopropylbenzene [98-82-8]^	6.7	U	ug/L	10	6.7	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Methyl acetate [79-20-9]^	9.5	U	ug/L	10	9.5	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Methylene Chloride [75-09-2]^	25	U	ug/L	10	25	120	1B05008	EPA 8260D	02/05/21 13:25	KG	
Methyl-tert-Butyl Ether [1634-04-4]^	6.0	U	ug/L	10	6.0	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Styrene [100-42-5]^	6.1	U	ug/L	10	6.1	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Toluene [108-88-3]^	7.2	U	ug/L	10	7.2	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Trichloroethene [79-01-6]^	**690**		ug/L	10	8.9	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Vinyl chloride [75-01-4]^	7.1	U	ug/L	10	7.1	25	1B05008	EPA 8260D	02/05/21 13:25	KG	
Xylenes (Total) [1330-20-7]	13	U	ug/L	10	13	50	1B05008	EPA 8260D	02/05/21 13:25	KG	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0002-035.0-20210201 **Lab Sample ID:** AE00180-28 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 11:10 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 06:21*	*KKW*	
4-Bromofluorobenzene	*48*	*1*	*50.0*	*96 %*	*41-142*	*1B05008*	*EPA 8260D*	*02/05/21 13:25*	*KG*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 06:21*	*KKW*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*1B05008*	*EPA 8260D*	*02/05/21 13:25*	*KG*	
Toluene-d8	*46*	*1*	*50.0*	*93 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 06:21*	*KKW*	
Toluene-d8	*50*	*1*	*50.0*	*99 %*	*41-146*	*1B05008*	*EPA 8260D*	*02/05/21 13:25*	*KG*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-DRUM222803-20210201 **Lab Sample ID:** AE00180-29 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 12:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
2-Butanone [78-93-3]^	220	U	ug/L	50	220	620	1B04041	EPA 8260D	02/05/21 06:51	KKW	
2-Hexanone [591-78-6]^	120	U	ug/L	50	120	620	1B04041	EPA 8260D	02/05/21 06:51	KKW	
4-Methyl-2-pentanone [108-10-1]^	120	U	ug/L	50	120	620	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Acetone [67-64-1]^	500	U	ug/L	50	500	1200	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Benzene [71-43-2]^	36	U	ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Bromoform [75-25-2]^	38	U	ug/L	50	38	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	QV-01
Carbon disulfide [75-15-0]^	120	U	ug/L	50	120	620	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Chloroform [67-66-3]^	40	U	ug/L	50	40	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
cis-1,2-Dichloroethene [156-59-2]^	**860**		ug/L	50	26	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Cyclohexane [110-82-7]^	46	U	ug/L	50	46	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Dibromochloromethane [124-48-1]^	25	U	ug/L	50	25	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Ethylbenzene [100-41-4]^	34	U	ug/L	50	34	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Freon 113 [76-13-1]^	**970**		ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Isopropylbenzene [98-82-8]^	34	U	ug/L	50	34	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Methyl acetate [79-20-9]^	48	U	ug/L	50	48	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	A-07
Methylene Chloride [75-09-2]^	120	U	ug/L	50	120	620	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Methyl-tert-Butyl Ether [1634-04-4]^	30	U	ug/L	50	30	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Styrene [100-42-5]^	30	U	ug/L	50	30	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Toluene [108-88-3]^	36	U	ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Trichloroethene [79-01-6]^	**4900**		ug/L	50	44	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	120	1B04041	EPA 8260D	02/05/21 06:51	KKW	
Vinyl chloride [75-01-4]^	36	U	ug/L	50	36	120	1B05029	EPA 8260D	02/05/21 16:20	KKW	
Xylenes (Total) [1330-20-7]	65	U	ug/L	50	65	250	1B04041	EPA 8260D	02/05/21 06:51	KKW	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-DRUM222803-20210201 **Lab Sample ID:** AE00180-29 **Received:** 02/01/21 13:25

Matrix: Ground Water **Sampled:** 02/01/21 12:00 **Work Order:** AE00180

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*53*	*1*	*50.0*	*105 %*	*41-142*	*1B04041*	*EPA 8260D*	*02/05/21 06:51*	*KKW*	
4-Bromofluorobenzene	*54*	*1*	*50.0*	*109 %*	*41-142*	*1B05029*	*EPA 8260D*	*02/05/21 16:20*	*KKW*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1B04041*	*EPA 8260D*	*02/05/21 06:51*	*KKW*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1B05029*	*EPA 8260D*	*02/05/21 16:20*	*KKW*	
Toluene-d8	*48*	*1*	*50.0*	*95 %*	*41-146*	*1B04041*	*EPA 8260D*	*02/05/21 06:51*	*KKW*	
Toluene-d8	*46*	*1*	*50.0*	*91 %*	*41-146*	*1B05029*	*EPA 8260D*	*02/05/21 16:20*	*KKW*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04020 - EPA 5030B_MS

Blank (1B04020-BLK1) Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 09:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*110*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04020 - EPA 5030B_MS - Continued

Blank (1B04020-BLK1) Continued Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 09:37

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*47*	*I*		*ug/L*	*50.0*		*94*	*41-146*			

LCS (1B04020-BS1) Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 08:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.5	ug/L	20.0		100	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0		105	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		102	57-141			
1,1-Dichloroethane	17		2.5	ug/L	20.0		86	57-142			
1,1-Dichloroethene	19		2.5	ug/L	20.0		96	47-139			
1,2,4-Trichlorobenzene	16		2.5	ug/L	20.0		81	52-159			
1,2-Dibromo-3-chloropropane	19		2.5	ug/L	20.0		97	48-150			
1,2-Dibromoethane	21		2.5	ug/L	20.0		106	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		106	63-131			
1,2-Dichloroethane	16		2.5	ug/L	20.0		79	50-156			
1,2-Dichloropropane	15		2.5	ug/L	20.0		75	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0		109	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		102	65-133			
2-Butanone	85		12	ug/L	100		85	10-180			
2-Hexanone	66		12	ug/L	100		66	12-180			
4-Methyl-2-pentanone	91		12	ug/L	100		91	19-180			
Acetone	70		25	ug/L	100		70	10-180			
Benzene	18		2.5	ug/L	20.0		91	56-136			
Bromodichloromethane	18		2.5	ug/L	20.0		88	58-135			
Bromoform	19		2.5	ug/L	20.0		96	46-148			
Bromomethane	8.4		2.5	ug/L	20.0		42	10-173			
Carbon disulfide	19		12	ug/L	20.0		96	43-153			
Carbon Tetrachloride	19		2.5	ug/L	20.0		96	54-156			
Chlorobenzene	23		2.5	ug/L	20.0		114	51-139			
Chloroethane	21		2.5	ug/L	20.0		104	27-180			
Chloroform	18		2.5	ug/L	20.0		91	58-139			
Chloromethane	11		2.5	ug/L	20.0		57	33-154			
cis-1,2-Dichloroethene	20		2.5	ug/L	20.0		101	56-128			
cis-1,3-Dichloropropene	16		2.5	ug/L	20.0		82	64-128			
Cyclohexane	15		2.5	ug/L	20.0		74	70-130			
Dibromochloromethane	22		2.5	ug/L	20.0		111	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0		82	10-180			
Ethylbenzene	21		2.5	ug/L	20.0		103	63-133			
Freon 113	20		2.5	ug/L	20.0		101	47-173			
Isopropylbenzene	23		2.5	ug/L	20.0		113	60-132			
m,p-Xylenes	48		5.0	ug/L	40.0		119	64-133			
Methyl acetate	13		2.5	ug/L	20.0		66	70-130			A-07
Methylene Chloride	22		12	ug/L	20.0		108	43-142			
Methyl-tert-Butyl Ether	19		2.5	ug/L	20.0		96	51-145			
o-Xylene	22		2.5	ug/L	20.0		111	61-129			
Styrene	23		2.5	ug/L	20.0		115	59-136			
Tetrachloroethene	19		2.5	ug/L	20.0		95	60-147			
Toluene	23		2.5	ug/L	20.0		113	64-131			
trans-1,2-Dichloroethene	19		2.5	ug/L	20.0		97	54-134			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04020 - EPA 5030B_MS - Continued

LCS (1B04020-BS1) Continued Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 08:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,3-Dichloropropene	17		2.5	ug/L	20.0		86	65-149			
Trichloroethene	20		2.5	ug/L	20.0		99	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0		102	56-155			
Vinyl chloride	18		2.5	ug/L	20.0		90	20-167			
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*107*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*108*	*53-146*			
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*96*	*41-146*			

Matrix Spike (1B04020-MS1) Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 18:29

Source: AE00180-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.5	ug/L	20.0	0.80 U	105	57-148			
1,1,2,2-Tetrachloroethane	23		2.5	ug/L	20.0	0.54 U	113	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	104	57-141			
1,1-Dichloroethane	18		2.5	ug/L	20.0	0.62 U	89	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0	0.94 U	107	47-139			
1,2,4-Trichlorobenzene	14		2.5	ug/L	20.0	0.70 U	71	52-159			
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0	0.96 U	83	48-150			
1,2-Dibromoethane	23		2.5	ug/L	20.0	0.78 U	114	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	107	63-131			
1,2-Dichloroethane	17		2.5	ug/L	20.0	0.63 U	83	50-156			
1,2-Dichloropropane	15		2.5	ug/L	20.0	0.80 U	75	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	111	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	104	65-133			
2-Butanone	84		12	ug/L	100	4.5 U	84	10-180			
2-Hexanone	70		12	ug/L	100	2.5 U	70	12-180			
4-Methyl-2-pentanone	100		12	ug/L	100	2.5 U	100	19-180			
Acetone	69		25	ug/L	100	10 U	69	10-180			
Benzene	20		2.5	ug/L	20.0	0.71 U	98	56-136			
Bromodichloromethane	19		2.5	ug/L	20.0	0.52 U	97	58-135			
Bromoform	22		2.5	ug/L	20.0	0.75 U	112	46-148			
Bromomethane	13		2.5	ug/L	20.0	0.95 U	66	10-173			
Carbon disulfide	18		12	ug/L	20.0	2.5 U	92	43-153			
Carbon Tetrachloride	17		2.5	ug/L	20.0	0.94 U	85	54-156			
Chlorobenzene	25		2.5	ug/L	20.0	0.72 U	126	51-139			
Chloroethane	23		2.5	ug/L	20.0	0.98 U	115	27-180			
Chloroform	21		2.5	ug/L	20.0	0.80 U	103	58-139			
Chloromethane	10		2.5	ug/L	20.0	0.82 U	52	33-154			
cis-1,2-Dichloroethene	100	L	2.5	ug/L	20.0	89	81	56-128			
cis-1,3-Dichloropropene	16		2.5	ug/L	20.0	0.59 U	79	64-128			
Cyclohexane	15		2.5	ug/L	20.0	0.93 U	75	70-130			
Dibromochloromethane	23		2.5	ug/L	20.0	0.50 U	117	50-140			
Dichlorodifluoromethane	20		2.5	ug/L	20.0	0.74 U	99	10-180			
Ethylbenzene	22		2.5	ug/L	20.0	0.69 U	112	63-133			
Freon 113	23		2.5	ug/L	20.0	1.8	107	47-173			
Isopropylbenzene	24		2.5	ug/L	20.0	0.67 U	122	60-132			
m,p-Xylenes	51		5.0	ug/L	40.0	1.3 U	128	64-133			
Methyl acetate	9.7		2.5	ug/L	20.0	0.95 U	49	70-130			QM-19

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04020 - EPA 5030B_MS - Continued

Matrix Spike (1B04020-MS1) Continued Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 18:29

Source: AE00180-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methylene Chloride	19		12	ug/L	20.0	2.5 U	97	43-142			
Methyl-tert-Butyl Ether	19		2.5	ug/L	20.0	0.60 U	95	51-145			
o-Xylene	25		2.5	ug/L	20.0	0.53 U	125	61-129			
Styrene	24		2.5	ug/L	20.0	0.61 U	122	59-136			
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	107	60-147			
Toluene	23		2.5	ug/L	20.0	0.72 U	113	64-131			
trans-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.73 U	104	54-134			
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.73 U	92	65-149			
Trichloroethene	47		2.5	ug/L	20.0	25	112	62-135			
Trichlorofluoromethane	22		2.5	ug/L	20.0	0.94 U	109	56-155			
Vinyl chloride	18		2.5	ug/L	20.0	0.71 U	91	20-167			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*110*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*109*	*53-146*			
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*96*	*41-146*			

Matrix Spike Dup (1B04020-MSD1) Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 18:59

Source: AE00180-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.5	ug/L	20.0	0.80 U	106	57-148	1	25	
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	104	60-139	8	17	
1,1,2-Trichloroethane	22		2.5	ug/L	20.0	0.76 U	108	57-141	4	16	
1,1-Dichloroethane	18		2.5	ug/L	20.0	0.62 U	88	57-142	2	24	
1,1-Dichloroethene	20		2.5	ug/L	20.0	0.94 U	102	47-139	4	16	
1,2,4-Trichlorobenzene	15		2.5	ug/L	20.0	0.70 U	74	52-159	4	24	
1,2-Dibromo-3-chloropropane	18		2.5	ug/L	20.0	0.96 U	89	48-150	8	21	
1,2-Dibromoethane	22		2.5	ug/L	20.0	0.78 U	111	57-140	3	16	
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	107	63-131	0.5	25	
1,2-Dichloroethane	16		2.5	ug/L	20.0	0.63 U	78	50-156	7	18	
1,2-Dichloropropane	15		2.5	ug/L	20.0	0.80 U	75	61-133	0.3	26	
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	108	66-129	3	23	
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	104	65-133	0.05	23	
2-Butanone	82		12	ug/L	100	4.5 U	82	10-180	2	29	
2-Hexanone	70		12	ug/L	100	2.5 U	70	12-180	0.1	28	
4-Methyl-2-pentanone	98		12	ug/L	100	2.5 U	98	19-180	2	24	
Acetone	70		25	ug/L	100	10 U	70	10-180	2	19	
Benzene	19		2.5	ug/L	20.0	0.71 U	94	56-136	5	14	
Bromodichloromethane	18		2.5	ug/L	20.0	0.52 U	89	58-135	9	19	
Bromoform	21		2.5	ug/L	20.0	0.75 U	107	46-148	4	18	
Bromomethane	17		2.5	ug/L	20.0	0.95 U	84	10-173	25	29	
Carbon disulfide	19		12	ug/L	20.0	2.5 U	94	43-153	2	26	
Carbon Tetrachloride	18		2.5	ug/L	20.0	0.94 U	89	54-156	5	27	
Chlorobenzene	25		2.5	ug/L	20.0	0.72 U	127	51-139	0.6	13	
Chloroethane	22		2.5	ug/L	20.0	0.98 U	112	27-180	3	22	
Chloroform	20		2.5	ug/L	20.0	0.80 U	99	58-139	4	17	
Chloromethane	13		2.5	ug/L	20.0	0.82 U	63	33-154	19	31	
cis-1,2-Dichloroethene	110	L	2.5	ug/L	20.0	89	87	56-128	1	17	
cis-1,3-Dichloropropene	15		2.5	ug/L	20.0	0.59 U	77	64-128	2	20	
Cyclohexane	15		2.5	ug/L	20.0	0.93 U	74	70-130	2	20	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04020 - EPA 5030B_MS - Continued

Matrix Spike Dup (1B04020-MSD1) Continued Prepared: 02/04/2021 00:00 Analyzed: 02/04/2021 18:59

Source: AE00180-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Dibromochloromethane	24		2.5	ug/L	20.0	0.50 U	120	50-140	2	18	
Dichlorodifluoromethane	20		2.5	ug/L	20.0	0.74 U	99	10-180	0.05	26	
Ethylbenzene	23		2.5	ug/L	20.0	0.69 U	114	63-133	2	18	
Freon 113	22		2.5	ug/L	20.0	1.8	101	47-173	5	30	
Isopropylbenzene	25		2.5	ug/L	20.0	0.67 U	123	60-132	0.3	23	
m,p-Xylenes	51		5.0	ug/L	40.0	1.3 U	128	64-133	0.02	18	
Methyl acetate	9.0		2.5	ug/L	20.0	0.95 U	45	70-130	8	20	QM-19
Methylene Chloride	19		12	ug/L	20.0	2.5 U	95	43-142	1	23	
Methyl-tert-Butyl Ether	20		2.5	ug/L	20.0	0.60 U	98	51-145	3	22	
o-Xylene	24		2.5	ug/L	20.0	0.53 U	121	61-129	3	16	
Styrene	24		2.5	ug/L	20.0	0.61 U	122	59-136	0.3	32	
Tetrachloroethene	22		2.5	ug/L	20.0	0.76 U	110	60-147	3	21	
Toluene	23		2.5	ug/L	20.0	0.72 U	114	64-131	0.6	16	
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0	0.73 U	101	54-134	2	20	
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.73 U	100	65-149	7	17	
Trichloroethene	45		2.5	ug/L	20.0	25	103	62-135	4	20	
Trichlorofluoromethane	21		2.5	ug/L	20.0	0.94 U	105	56-155	3	22	
Vinyl chloride	19		2.5	ug/L	20.0	0.71 U	94	20-167	3	24	
4-Bromofluorobenzene	*56*			*ug/L*	*50.0*		*111*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*110*	*53-146*			
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*96*	*41-146*			

Batch 1B04041 - EPA 5030B_MS

Blank (1B04041-BLK1) Prepared: 02/04/2021 13:17 Analyzed: 02/04/2021 22:26

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04041 - EPA 5030B_MS - Continued

Blank (1B04041-BLK1) Continued Prepared: 02/04/2021 13:17 Analyzed: 02/04/2021 22:26

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*106*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*104*	*53-146*			
Toluene-d8	*47*	*I*		*ug/L*	*50.0*		*93*	*41-146*			

LCS (1B04041-BS1) Prepared: 02/04/2021 13:17 Analyzed: 02/04/2021 20:27

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.5	ug/L	20.0		98	57-148			
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0		102	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		99	57-141			
1,1-Dichloroethane	17		2.5	ug/L	20.0		86	57-142			
1,1-Dichloroethene	20		2.5	ug/L	20.0		100	47-139			
1,2,4-Trichlorobenzene	15		2.5	ug/L	20.0		76	52-159			
1,2-Dibromo-3-chloropropane	18		2.5	ug/L	20.0		88	48-150			
1,2-Dibromoethane	22		2.5	ug/L	20.0		109	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		106	63-131			
1,2-Dichloroethane	15		2.5	ug/L	20.0		74	50-156			
1,2-Dichloropropane	14		2.5	ug/L	20.0		72	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0		109	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		106	65-133			
2-Butanone	82		12	ug/L	100		82	10-180			
2-Hexanone	64		12	ug/L	100		64	12-180			
4-Methyl-2-pentanone	81		12	ug/L	100		81	19-180			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04041 - EPA 5030B_MS - Continued

LCS (1B04041-BS1) Continued Prepared: 02/04/2021 13:17 Analyzed: 02/04/2021 20:27

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Acetone	67		25	ug/L	100		67	10-180			
Benzene	19		2.5	ug/L	20.0		94	56-136			
Bromodichloromethane	18		2.5	ug/L	20.0		88	58-135			
Bromoform	19		2.5	ug/L	20.0		97	46-148			
Bromomethane	11		2.5	ug/L	20.0		57	10-173			
Carbon disulfide	18		12	ug/L	20.0		92	43-153			
Carbon Tetrachloride	16		2.5	ug/L	20.0		79	54-156			
Chlorobenzene	24		2.5	ug/L	20.0		121	51-139			
Chloroethane	22		2.5	ug/L	20.0		111	27-180			
Chloroform	20		2.5	ug/L	20.0		98	58-139			
Chloromethane	12		2.5	ug/L	20.0		60	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0		106	56-128			
cis-1,3-Dichloropropene	16		2.5	ug/L	20.0		80	64-128			
Cyclohexane	15		2.5	ug/L	20.0		73	70-130			
Dibromochloromethane	23		2.5	ug/L	20.0		115	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0		82	10-180			
Ethylbenzene	22		2.5	ug/L	20.0		110	63-133			
Freon 113	20		2.5	ug/L	20.0		102	47-173			
Isopropylbenzene	24		2.5	ug/L	20.0		118	60-132			
m,p-Xylenes	50		5.0	ug/L	40.0		124	64-133			
Methyl acetate	8.9		2.5	ug/L	20.0		44	70-130			A-07
Methylene Chloride	19		12	ug/L	20.0		95	43-142			
Methyl-tert-Butyl Ether	18		2.5	ug/L	20.0		92	51-145			
o-Xylene	24		2.5	ug/L	20.0		120	61-129			
Styrene	24		2.5	ug/L	20.0		122	59-136			
Tetrachloroethene	19		2.5	ug/L	20.0		97	60-147			
Toluene	22		2.5	ug/L	20.0		112	64-131			
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0		99	54-134			
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0		93	65-149			
Trichloroethene	21		2.5	ug/L	20.0		103	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0		98	56-155			
Vinyl chloride	18		2.5	ug/L	20.0		92	20-167			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*110*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			
Toluene-d8	*47*	*I*		*ug/L*	*50.0*		*95*	*41-146*			

Matrix Spike (1B04041-MS1) Prepared: 02/04/2021 13:17 Analyzed: 02/04/2021 22:56

Source: AE00592-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.5	ug/L	20.0	0.80 U	104	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	104	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	104	57-141			
1,1-Dichloroethane	17		2.5	ug/L	20.0	0.62 U	86	57-142			
1,1-Dichloroethene	20		2.5	ug/L	20.0	0.94 U	101	47-139			
1,2,4-Trichlorobenzene	15		2.5	ug/L	20.0	0.97	70	52-159			
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0	0.96 U	85	48-150			
1,2-Dibromoethane	22		2.5	ug/L	20.0	0.78 U	108	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	106	63-131			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04041 - EPA 5030B_MS - Continued

Matrix Spike (1B04041-MS1) Continued Prepared: 02/04/2021 13:17 Analyzed: 02/04/2021 22:56

Source: AE00592-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	15		2.5	ug/L	20.0	0.63 U	77	50-156			
1,2-Dichloropropane	15		2.5	ug/L	20.0	0.80 U	74	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	109	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	103	65-133			
2-Butanone	87		12	ug/L	100	4.5 U	87	10-180			
2-Hexanone	60		12	ug/L	100	2.5 U	60	12-180			
4-Methyl-2-pentanone	95		12	ug/L	100	2.5 U	95	19-180			
Acetone	65		25	ug/L	100	10 U	65	10-180			
Benzene	63		2.5	ug/L	20.0	44	94	56-136			
Bromodichloromethane	19		2.5	ug/L	20.0	0.52 U	96	58-135			
Bromoform	20		2.5	ug/L	20.0	0.75 U	100	46-148			
Bromomethane	17		2.5	ug/L	20.0	0.95 U	83	10-173			QM-11
Carbon disulfide	18		12	ug/L	20.0	2.5 U	90	43-153			
Carbon Tetrachloride	18		2.5	ug/L	20.0	0.94 U	88	54-156			
Chlorobenzene	24		2.5	ug/L	20.0	0.72 U	122	51-139			
Chloroethane	23		2.5	ug/L	20.0	0.98 U	114	27-180			
Chloroform	20		2.5	ug/L	20.0	0.80 U	102	58-139			
Chloromethane	11		2.5	ug/L	20.0	0.82 U	54	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.53 U	103	56-128			
cis-1,3-Dichloropropene	16		2.5	ug/L	20.0	0.59 U	80	64-128			
Cyclohexane	23		2.5	ug/L	20.0	11	60	70-130			QM-07
Dibromochloromethane	22		2.5	ug/L	20.0	0.50 U	112	50-140			
Dichlorodifluoromethane	18		2.5	ug/L	20.0	0.74 U	92	10-180			
Ethylbenzene	32		2.5	ug/L	20.0	9.5	114	63-133			
Freon 113	22		2.5	ug/L	20.0	0.73 U	111	47-173			
Isopropylbenzene	29		2.5	ug/L	20.0	4.4	123	60-132			
m,p-Xylenes	78		5.0	ug/L	40.0	29	122	64-133			
Methyl acetate	7.8		2.5	ug/L	20.0	0.95 U	39	70-130			QM-11, QM-19
Methylene Chloride	19		12	ug/L	20.0	2.5 U	94	43-142			
Methyl-tert-Butyl Ether	63		2.5	ug/L	20.0	48	77	51-145			
o-Xylene	62		2.5	ug/L	20.0	39	115	61-129			
Styrene	25		2.5	ug/L	20.0	0.61 U	125	59-136			
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	105	60-147			
Toluene	23		2.5	ug/L	20.0	0.98	110	64-131			
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0	0.73 U	99	54-134			
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.73 U	92	65-149			
Trichloroethene	23		2.5	ug/L	20.0	0.89 U	117	62-135			
Trichlorofluoromethane	22		2.5	ug/L	20.0	0.94 U	110	56-155			
Vinyl chloride	18		2.5	ug/L	20.0	0.71 U	89	20-167			
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*110*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*105*	*53-146*			
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*97*	*41-146*			

Matrix Spike Dup (1B04041-MSD1) Prepared: 02/04/2021 13:17 Analyzed: 02/05/2021 09:25

Source: AE00592-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.5	ug/L	20.0	0.80 U	102	57-148	2	25	
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0	0.54 U	96	60-139	8	17	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04041 - EPA 5030B_MS - Continued

Matrix Spike Dup (1B04041-MSD1) Continued Prepared: 02/04/2021 13:17 Analyzed: 02/05/2021 09:25

Source: AE00592-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	105	57-141	0.8	16	
1,1-Dichloroethane	18		2.5	ug/L	20.0	0.62 U	88	57-142	3	24	
1,1-Dichloroethene	21		2.5	ug/L	20.0	0.94 U	107	47-139	6	16	
1,2,4-Trichlorobenzene	17		2.5	ug/L	20.0	0.97	81	52-159	13	24	
1,2-Dibromo-3-chloropropane	21		2.5	ug/L	20.0	0.96 U	104	48-150	19	21	
1,2-Dibromoethane	21		2.5	ug/L	20.0	0.78 U	104	57-140	4	16	
1,2-Dichlorobenzene	22		2.5	ug/L	20.0	0.73 U	109	63-131	3	25	
1,2-Dichloroethane	15		2.5	ug/L	20.0	0.63 U	77	50-156	0.6	18	
1,2-Dichloropropane	15		2.5	ug/L	20.0	0.80 U	75	61-133	2	26	
1,3-Dichlorobenzene	23		2.5	ug/L	20.0	0.77 U	114	66-129	5	23	
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	106	65-133	3	23	
2-Butanone	87		12	ug/L	100	4.5 U	87	10-180	0.6	29	
2-Hexanone	68		12	ug/L	100	2.5 U	68	12-180	12	28	
4-Methyl-2-pentanone	86		12	ug/L	100	2.5 U	86	19-180	10	24	
Acetone	70		25	ug/L	100	10 U	70	10-180	8	19	
Benzene	64		2.5	ug/L	20.0	44	96	56-136	0.9	14	
Bromodichloromethane	18		2.5	ug/L	20.0	0.52 U	88	58-135	9	19	
Bromoform	19		2.5	ug/L	20.0	0.75 U	96	46-148	3	18	
Bromomethane	10		2.5	ug/L	20.0	0.95 U	50	10-173	50	29	QM-11
Carbon disulfide	19		12	ug/L	20.0	2.5 U	97	43-153	8	26	
Carbon Tetrachloride	19		2.5	ug/L	20.0	0.94 U	95	54-156	8	27	
Chlorobenzene	23		2.5	ug/L	20.0	0.72 U	117	51-139	4	13	
Chloroethane	23		2.5	ug/L	20.0	0.98 U	114	27-180	0.2	22	
Chloroform	20		2.5	ug/L	20.0	0.80 U	98	58-139	4	17	
Chloromethane	12		2.5	ug/L	20.0	0.82 U	61	33-154	12	31	
cis-1,2-Dichloroethene	20		2.5	ug/L	20.0	0.53 U	102	56-128	0.7	17	
cis-1,3-Dichloropropene	16		2.5	ug/L	20.0	0.59 U	80	64-128	0.3	20	
Cyclohexane	26		2.5	ug/L	20.0	11	77	70-130	13	20	
Dibromochloromethane	22		2.5	ug/L	20.0	0.50 U	112	50-140	0.2	18	
Dichlorodifluoromethane	18		2.5	ug/L	20.0	0.74 U	89	10-180	3	26	
Ethylbenzene	31		2.5	ug/L	20.0	9.5	109	63-133	3	18	
Freon 113	21		2.5	ug/L	20.0	0.73 U	105	47-173	6	30	
Isopropylbenzene	27		2.5	ug/L	20.0	4.4	111	60-132	9	23	
m,p-Xylenes	73		5.0	ug/L	40.0	29	110	64-133	7	18	
Methyl acetate	12		2.5	ug/L	20.0	0.95 U	59	70-130	41	20	QM-11, QM-19
Methylene Chloride	20		12	ug/L	20.0	2.5 U	100	43-142	6	23	
Methyl-tert-Butyl Ether	65		2.5	ug/L	20.0	48	88	51-145	3	22	
o-Xylene	60		2.5	ug/L	20.0	39	106	61-129	3	16	
Styrene	23		2.5	ug/L	20.0	0.61 U	116	59-136	7	32	
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	106	60-147	0.7	21	
Toluene	23		2.5	ug/L	20.0	0.98	112	64-131	2	16	
trans-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.73 U	104	54-134	4	20	
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.73 U	91	65-149	0.7	17	
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	109	62-135	7	20	
Trichlorofluoromethane	22		2.5	ug/L	20.0	0.94 U	109	56-155	2	22	
Vinyl chloride	20		2.5	ug/L	20.0	0.71 U	100	20-167	12	24	
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*107*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*105*	*53-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B04041 - EPA 5030B_MS - Continued

Matrix Spike Dup (1B04041-MSD1) Continued Prepared: 02/04/2021 13:17 Analyzed: 02/05/2021 09:25

Source: AE00592-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*97*	*41-146*			

Batch 1B05008 - EPA 5030B_MS

Blank (1B05008-BLK1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 11:59

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05008 - EPA 5030B_MS - Continued

Blank (1B05008-BLK1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 11:59

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*48*	*I*		*ug/L*	*50.0*		*95*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*105*	*53-146*			
Toluene-d8	*49*	*I*		*ug/L*	*50.0*		*98*	*41-146*			

LCS (1B05008-BS1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 08:55

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0		116	57-148			
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0		100	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		101	57-141			
1,1-Dichloroethane	24		2.5	ug/L	20.0		120	57-142			
1,1-Dichloroethene	22		2.5	ug/L	20.0		111	47-139			
1,2,4-Trichlorobenzene	22		2.5	ug/L	20.0		109	52-159			
1,2-Dibromo-3-chloropropane	20		2.5	ug/L	20.0		102	48-150			
1,2-Dibromoethane	21		2.5	ug/L	20.0		105	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0		100	63-131			
1,2-Dichloroethane	21		2.5	ug/L	20.0		106	50-156			
1,2-Dichloropropane	22		2.5	ug/L	20.0		108	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		98	66-129			
1,4-Dichlorobenzene	19		2.5	ug/L	20.0		96	65-133			
2-Butanone	160		12	ug/L	100		160	10-180			
2-Hexanone	110		12	ug/L	100		105	12-180			
4-Methyl-2-pentanone	110		12	ug/L	100		108	19-180			
Acetone	130		25	ug/L	100		127	10-180			
Benzene	23		2.5	ug/L	20.0		114	56-136			
Bromodichloromethane	21		2.5	ug/L	20.0		104	58-135			
Bromoform	20		2.5	ug/L	20.0		100	46-148			
Bromomethane	19		2.5	ug/L	20.0		97	10-173			
Carbon disulfide	25		12	ug/L	20.0		126	43-153			
Carbon Tetrachloride	23		2.5	ug/L	20.0		113	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		101	51-139			
Chloroethane	25		2.5	ug/L	20.0		125	27-180			
Chloroform	23		2.5	ug/L	20.0		114	58-139			
Chloromethane	19		2.5	ug/L	20.0		97	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0		112	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		99	64-128			
Cyclohexane	26		2.5	ug/L	20.0		130	70-130			
Dibromochloromethane	20		2.5	ug/L	20.0		101	50-140			
Dichlorodifluoromethane	17		2.5	ug/L	20.0		87	10-180			
Ethylbenzene	20		2.5	ug/L	20.0		98	63-133			
Freon 113	25		2.5	ug/L	20.0		124	47-173			
Isopropylbenzene	19		2.5	ug/L	20.0		97	60-132			
m,p-Xylenes	39		5.0	ug/L	40.0		97	64-133			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05008 - EPA 5030B_MS - Continued

LCS (1B05008-BS1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 08:55

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methyl acetate	23		2.5	ug/L	20.0		113	70-130			
Methylene Chloride	23		12	ug/L	20.0		115	43-142			
Methyl-tert-Butyl Ether	23		2.5	ug/L	20.0		114	51-145			
o-Xylene	19		2.5	ug/L	20.0		96	61-129			
Styrene	20		2.5	ug/L	20.0		102	59-136			
Tetrachloroethene	21		2.5	ug/L	20.0		107	60-147			
Toluene	21		2.5	ug/L	20.0		104	64-131			
trans-1,2-Dichloroethene	23		2.5	ug/L	20.0		114	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0		103	65-149			
Trichloroethene	22		2.5	ug/L	20.0		111	62-135			
Trichlorofluoromethane	23		2.5	ug/L	20.0		114	56-155			
Vinyl chloride	21		2.5	ug/L	20.0		107	20-167			
4-Bromofluorobenzene	*49*	*I*		*ug/L*	*50.0*		*99*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			
Toluene-d8	*50*			*ug/L*	*50.0*		*100*	*41-146*			

Matrix Spike (1B05008-MS1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 09:35

Source: AE00865-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0	0.80 U	112	57-148			
1,1,2,2-Tetrachloroethane	19		2.5	ug/L	20.0	0.54 U	93	60-139			
1,1,2-Trichloroethane	18		2.5	ug/L	20.0	0.76 U	92	57-141			
1,1-Dichloroethane	23		2.5	ug/L	20.0	0.62 U	114	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0	0.94 U	106	47-139			
1,2,4-Trichlorobenzene	20		2.5	ug/L	20.0	0.70 U	101	52-159			
1,2-Dibromo-3-chloropropane	19		2.5	ug/L	20.0	0.96 U	95	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	95	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0	0.73 U	93	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	101	50-156			
1,2-Dichloropropane	20		2.5	ug/L	20.0	0.80 U	99	61-133			
1,3-Dichlorobenzene	19		2.5	ug/L	20.0	0.77 U	93	66-129			
1,4-Dichlorobenzene	18		2.5	ug/L	20.0	0.76 U	90	65-133			
2-Butanone	150		12	ug/L	100	4.5 U	146	10-180			
2-Hexanone	96		12	ug/L	100	2.5 U	96	12-180			
4-Methyl-2-pentanone	100		12	ug/L	100	2.5 U	101	19-180			
Acetone	110		25	ug/L	100	10 U	112	10-180			
Benzene	21		2.5	ug/L	20.0	0.71 U	106	56-136			
Bromodichloromethane	19		2.5	ug/L	20.0	0.52 U	97	58-135			
Bromoform	19		2.5	ug/L	20.0	0.75 U	94	46-148			
Bromomethane	17		2.5	ug/L	20.0	0.95 U	83	10-173			
Carbon disulfide	22		12	ug/L	20.0	2.5 U	112	43-153			
Carbon Tetrachloride	22		2.5	ug/L	20.0	0.94 U	110	54-156			
Chlorobenzene	19		2.5	ug/L	20.0	0.72 U	95	51-139			
Chloroethane	24		2.5	ug/L	20.0	0.98 U	120	27-180			
Chloroform	21		2.5	ug/L	20.0	0.80 U	107	58-139			
Chloromethane	20		2.5	ug/L	20.0	0.82 U	100	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.53 U	106	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0	0.59 U	93	64-128			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05008 - EPA 5030B_MS - Continued

Matrix Spike (1B05008-MS1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 09:35

Source: AE00865-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Cyclohexane	26		2.5	ug/L	20.0	0.93 U	128	70-130			
Dibromochloromethane	18		2.5	ug/L	20.0	0.50 U	92	50-140			
Dichlorodifluoromethane	18		2.5	ug/L	20.0	0.74 U	88	10-180			
Ethylbenzene	19		2.5	ug/L	20.0	0.69 U	93	63-133			
Freon 113	24		2.5	ug/L	20.0	0.73 U	121	47-173			
Isopropylbenzene	18		2.5	ug/L	20.0	0.67 U	92	60-132			
m,p-Xylenes	37		5.0	ug/L	40.0	1.3 U	92	64-133			
Methyl acetate	21		2.5	ug/L	20.0	0.95 U	107	70-130			
Methylene Chloride	21		12	ug/L	20.0	2.5 U	107	43-142			
Methyl-tert-Butyl Ether	20		2.5	ug/L	20.0	0.60 U	101	51-145			
o-Xylene	18		2.5	ug/L	20.0	0.53 U	90	61-129			
Styrene	19		2.5	ug/L	20.0	0.61 U	95	59-136			
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	104	60-147			
Toluene	20		2.5	ug/L	20.0	0.72 U	98	64-131			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.73 U	109	54-134			
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0	0.73 U	97	65-149			
Trichloroethene	21		2.5	ug/L	20.0	0.89 U	105	62-135			
Trichlorofluoromethane	23		2.5	ug/L	20.0	0.94 U	116	56-155			
Vinyl chloride	22		2.5	ug/L	20.0	0.71 U	109	20-167			
4-Bromofluorobenzene	*48*	*I*		*ug/L*	*50.0*		*96*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*105*	*53-146*			
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*96*	*41-146*			

Matrix Spike Dup (1B05008-MSD1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 10:04

Source: AE00865-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0	0.80 U	110	57-148	2	25	
1,1,2,2-Tetrachloroethane	16		2.5	ug/L	20.0	0.54 U	82	60-139	12	17	
1,1,2-Trichloroethane	17		2.5	ug/L	20.0	0.76 U	84	57-141	9	16	
1,1-Dichloroethane	22		2.5	ug/L	20.0	0.62 U	112	57-142	1	24	
1,1-Dichloroethene	21		2.5	ug/L	20.0	0.94 U	103	47-139	3	16	
1,2,4-Trichlorobenzene	18		2.5	ug/L	20.0	0.70 U	89	52-159	13	24	
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0	0.96 U	83	48-150	12	21	
1,2-Dibromoethane	17		2.5	ug/L	20.0	0.78 U	87	57-140	9	16	
1,2-Dichlorobenzene	18		2.5	ug/L	20.0	0.73 U	89	63-131	5	25	
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	93	50-156	8	18	
1,2-Dichloropropane	20		2.5	ug/L	20.0	0.80 U	98	61-133	1	26	
1,3-Dichlorobenzene	18		2.5	ug/L	20.0	0.77 U	90	66-129	3	23	
1,4-Dichlorobenzene	18		2.5	ug/L	20.0	0.76 U	90	65-133	0.2	23	
2-Butanone	120		12	ug/L	100	4.5 U	125	10-180	15	29	
2-Hexanone	86		12	ug/L	100	2.5 U	86	12-180	12	28	
4-Methyl-2-pentanone	87		12	ug/L	100	2.5 U	87	19-180	15	24	
Acetone	95		25	ug/L	100	10 U	95	10-180	17	19	
Benzene	21		2.5	ug/L	20.0	0.71 U	105	56-136	1	14	
Bromodichloromethane	19		2.5	ug/L	20.0	0.52 U	95	58-135	2	19	
Bromoform	17		2.5	ug/L	20.0	0.75 U	84	46-148	11	18	
Bromomethane	17		2.5	ug/L	20.0	0.95 U	86	10-173	4	29	
Carbon disulfide	21		12	ug/L	20.0	2.5 U	105	43-153	6	26	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05008 - EPA 5030B_MS - Continued

Matrix Spike Dup (1B05008-MSD1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 10:04

Source: AE00865-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Tetrachloride	22		2.5	ug/L	20.0	0.94 U	108	54-156	3	27	
Chlorobenzene	18		2.5	ug/L	20.0	0.72 U	92	51-139	2	13	
Chloroethane	24		2.5	ug/L	20.0	0.98 U	121	27-180	0.7	22	
Chloroform	21		2.5	ug/L	20.0	0.80 U	106	58-139	1	17	
Chloromethane	20		2.5	ug/L	20.0	0.82 U	99	33-154	1	31	
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.53 U	105	56-128	0.8	17	
cis-1,3-Dichloropropene	17		2.5	ug/L	20.0	0.59 U	87	64-128	7	20	
Cyclohexane	25		2.5	ug/L	20.0	0.93 U	125	70-130	2	20	
Dibromochloromethane	17		2.5	ug/L	20.0	0.50 U	85	50-140	8	18	
Dichlorodifluoromethane	17		2.5	ug/L	20.0	0.74 U	86	10-180	2	26	
Ethylbenzene	18		2.5	ug/L	20.0	0.69 U	92	63-133	1	18	
Freon 113	24		2.5	ug/L	20.0	0.73 U	119	47-173	2	30	
Isopropylbenzene	18		2.5	ug/L	20.0	0.67 U	91	60-132	1	23	
m,p-Xylenes	36		5.0	ug/L	40.0	1.3 U	90	64-133	2	18	
Methyl acetate	19		2.5	ug/L	20.0	0.95 U	94	70-130	13	20	
Methylene Chloride	21		12	ug/L	20.0	2.5 U	104	43-142	2	23	
Methyl-tert-Butyl Ether	18		2.5	ug/L	20.0	0.60 U	89	51-145	13	22	
o-Xylene	18		2.5	ug/L	20.0	0.53 U	89	61-129	1	16	
Styrene	18		2.5	ug/L	20.0	0.61 U	92	59-136	3	32	
Tetrachloroethene	20		2.5	ug/L	20.0	0.76 U	102	60-147	2	21	
Toluene	19		2.5	ug/L	20.0	0.72 U	97	64-131	0.9	16	
trans-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.73 U	107	54-134	2	20	
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.73 U	88	65-149	10	17	
Trichloroethene	21		2.5	ug/L	20.0	0.89 U	103	62-135	1	20	
Trichlorofluoromethane	23		2.5	ug/L	20.0	0.94 U	113	56-155	3	22	
Vinyl chloride	21		2.5	ug/L	20.0	0.71 U	106	20-167	3	24	
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*94*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*102*	*53-146*			
Toluene-d8	*49*	*I*		*ug/L*	*50.0*		*98*	*41-146*			

Batch 1B05029 - EPA 5030B_MS

Blank (1B05029-BLK1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 11:24

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05029 - EPA 5030B_MS - Continued

Blank (1B05029-BLK1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 11:24

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*106*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*105*	*53-146*			
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*96*	*41-146*			

LCS (1B05029-BS1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 09:55

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.5	ug/L	20.0		100	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0		104	60-139			
1,1,2-Trichloroethane	19		2.5	ug/L	20.0		97	57-141			
1,1-Dichloroethane	18		2.5	ug/L	20.0		92	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		103	47-139			
1,2,4-Trichlorobenzene	15		2.5	ug/L	20.0		76	52-159			
1,2-Dibromo-3-chloropropane	20		2.5	ug/L	20.0		98	48-150			
1,2-Dibromoethane	23		2.5	ug/L	20.0		115	57-140			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05029 - EPA 5030B_MS - Continued

LCS (1B05029-BS1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 09:55

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		103	63-131			
1,2-Dichloroethane	16		2.5	ug/L	20.0		80	50-156			
1,2-Dichloropropane	16		2.5	ug/L	20.0		80	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0		109	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		105	65-133			
2-Butanone	87		12	ug/L	100		87	10-180			
2-Hexanone	69		12	ug/L	100		69	12-180			
4-Methyl-2-pentanone	98		12	ug/L	100		98	19-180			
Acetone	74		25	ug/L	100		74	10-180			
Benzene	19		2.5	ug/L	20.0		97	56-136			
Bromodichloromethane	17		2.5	ug/L	20.0		87	58-135			
Bromoform	20		2.5	ug/L	20.0		99	46-148			
Bromomethane	16		2.5	ug/L	20.0		78	10-173			
Carbon disulfide	19		12	ug/L	20.0		97	43-153			
Carbon Tetrachloride	16		2.5	ug/L	20.0		78	54-156			
Chlorobenzene	23		2.5	ug/L	20.0		117	51-139			
Chloroethane	23		2.5	ug/L	20.0		117	27-180			
Chloroform	19		2.5	ug/L	20.0		96	58-139			
Chloromethane	11		2.5	ug/L	20.0		57	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0		109	56-128			
cis-1,3-Dichloropropene	17		2.5	ug/L	20.0		86	64-128			
Cyclohexane	16		2.5	ug/L	20.0		80	70-130			
Dibromochloromethane	23		2.5	ug/L	20.0		113	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0		79	10-180			
Ethylbenzene	22		2.5	ug/L	20.0		108	63-133			
Freon 113	20		2.5	ug/L	20.0		102	47-173			
Isopropylbenzene	23		2.5	ug/L	20.0		115	60-132			
m,p-Xylenes	48		5.0	ug/L	40.0		119	64-133			
Methyl acetate	13		2.5	ug/L	20.0		67	70-130			A-07
Methylene Chloride	20		12	ug/L	20.0		98	43-142			
Methyl-tert-Butyl Ether	20		2.5	ug/L	20.0		102	51-145			
o-Xylene	24		2.5	ug/L	20.0		118	61-129			
Styrene	24		2.5	ug/L	20.0		118	59-136			
Tetrachloroethene	19		2.5	ug/L	20.0		96	60-147			
Toluene	22		2.5	ug/L	20.0		111	64-131			
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0		101	54-134			
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0		96	65-149			
Trichloroethene	22		2.5	ug/L	20.0		112	62-135			
Trichlorofluoromethane	19		2.5	ug/L	20.0		95	56-155			
Vinyl chloride	18		2.5	ug/L	20.0		91	20-167			
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*103*	*53-146*			
Toluene-d8	*47*	*I*		*ug/L*	*50.0*		*94*	*41-146*			

LCS Dup (1B05029-BSD1) Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 10:25

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	19		2.5	ug/L	20.0		94	57-148	6	25	QM-10

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05029 - EPA 5030B_MS - Continued

LCS Dup (1B05029-BSD1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 10:25

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0		98	60-139	6	17	QM-10
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		101	57-141	4	16	QM-10
1,1-Dichloroethane	17		2.5	ug/L	20.0		87	57-142	6	24	QM-10
1,1-Dichloroethene	19		2.5	ug/L	20.0		96	47-139	7	16	QM-10
1,2,4-Trichlorobenzene	14		2.5	ug/L	20.0		69	52-159	9	24	QM-10
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0		87	48-150	12	21	QM-10
1,2-Dibromoethane	21		2.5	ug/L	20.0		103	57-140	10	16	QM-10
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		104	63-131	0.9	25	QM-10
1,2-Dichloroethane	15		2.5	ug/L	20.0		74	50-156	7	18	QM-10
1,2-Dichloropropane	16		2.5	ug/L	20.0		78	61-133	3	26	QM-10
1,3-Dichlorobenzene	21		2.5	ug/L	20.0		105	66-129	4	23	QM-10
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		102	65-133	3	23	QM-10
2-Butanone	89		12	ug/L	100		89	10-180	2	29	QM-10
2-Hexanone	70		12	ug/L	100		70	12-180	1	28	QM-10
4-Methyl-2-pentanone	87		12	ug/L	100		87	19-180	12	24	QM-10
Acetone	71		25	ug/L	100		71	10-180	4	19	QM-10
Benzene	18		2.5	ug/L	20.0		92	56-136	5	14	QM-10
Bromodichloromethane	17		2.5	ug/L	20.0		85	58-135	2	19	QM-10
Bromoform	18		2.5	ug/L	20.0		90	46-148	9	18	QM-10
Bromomethane	16		2.5	ug/L	20.0		82	10-173	5	29	QM-10
Carbon disulfide	19		12	ug/L	20.0		94	43-153	4	26	QM-10
Carbon Tetrachloride	15		2.5	ug/L	20.0		76	54-156	4	27	QM-10
Chlorobenzene	23		2.5	ug/L	20.0		113	51-139	4	13	QM-10
Chloroethane	23		2.5	ug/L	20.0		116	27-180	1	22	QM-10
Chloroform	20		2.5	ug/L	20.0		100	58-139	4	17	QM-10
Chloromethane	12		2.5	ug/L	20.0		59	33-154	3	31	QM-10
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0		107	56-128	2	17	QM-10
cis-1,3-Dichloropropene	16		2.5	ug/L	20.0		79	64-128	9	20	QM-10
Cyclohexane	15		2.5	ug/L	20.0		76	70-130	5	20	QM-10
Dibromochloromethane	21		2.5	ug/L	20.0		107	50-140	5	18	QM-10
Dichlorodifluoromethane	15		2.5	ug/L	20.0		77	10-180	3	26	QM-10
Ethylbenzene	20		2.5	ug/L	20.0		102	63-133	6	18	QM-10
Freon 113	20		2.5	ug/L	20.0		99	47-173	3	30	QM-10
Isopropylbenzene	22		2.5	ug/L	20.0		110	60-132	4	23	QM-10
m,p-Xylenes	45		5.0	ug/L	40.0		113	64-133	6	18	QM-10
Methyl acetate	14		2.5	ug/L	20.0		68	70-130	1	20	A-07, QM-10
Methylene Chloride	20		12	ug/L	20.0		99	43-142	1	23	QM-10
Methyl-tert-Butyl Ether	19		2.5	ug/L	20.0		97	51-145	5	22	QM-10
o-Xylene	22		2.5	ug/L	20.0		111	61-129	7	16	QM-10
Styrene	23		2.5	ug/L	20.0		114	59-136	3	32	QM-10
Tetrachloroethene	19		2.5	ug/L	20.0		93	60-147	2	21	QM-10
Toluene	22		2.5	ug/L	20.0		109	64-131	1	16	QM-10
trans-1,2-Dichloroethene	19		2.5	ug/L	20.0		95	54-134	6	20	QM-10
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0		93	65-149	3	17	QM-10
Trichloroethene	20		2.5	ug/L	20.0		102	62-135	9	20	QM-10
Trichlorofluoromethane	18		2.5	ug/L	20.0		92	56-155	3	22	QM-10
Vinyl chloride	18		2.5	ug/L	20.0		90	20-167	1	24	QM-10
4-Bromofluorobenzene	*55*			*ug/L*	*50.0*		*110*	*41-142*			*QM-10*
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*105*	*53-146*			*QM-10*

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1B05029 - EPA 5030B_MS - Continued

LCS Dup (1B05029-BSD1) Continued Prepared: 02/05/2021 00:00 Analyzed: 02/05/2021 10:25

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*48*	*I*		*ug/L*	*50.0*		*96*	*41-146*			*QM-10*

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
A-07	Analyte biased low in LCS but detected in the reporting limit standard. Since the analyte in the associated sample was not detected, there is no impact on data quality.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-10	LCS/LCSD were analyzed in place of MS/MSD.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-19	The spike recovery was outside acceptance limits for the MS and/or MSD.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

AE00180

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2224 | PAGE 1 OF 3

PROJECT NO: 112G08982	FACILITY: HMFN	PROJECT MANAGER Chris Hook	PHONE NUMBER 412-921-8790	LABORATORY NAME AND CONTACT: ENCO, Kaitlin Dylnicki
SAMPLERS (SIGNATURE) Melissa Bennett		FIELD OPERATIONS LEADER Melissa Bennett	PHONE NUMBER 321-914-9394	ADDRESS
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☒ 7 day ☐ 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: VOC	COMMENTS
1/28	1520	HMPN-MW0043-035.0-20210128	43	30	40	GW	G	3	G	HCl	X	
1/28	1605	HMPN-MW0044-045.0-20210128 ~~20220128~~	44	40	50						X	
1/28	1645	HMPN-MW0041-035.0-~~2020~~ 20210128	41	30	40						X	
1/28	1735	HMPN-MW0042-042.5-20210128	42	40	45						X	
1/29	0920	HMPN-MW0037-010.0-20210129	37	5	15						X	
1/29	0955	HMPN-MW0038-020.0-20210129	38	15	25						X	
1/29	1030	HMPN-MW0046-015.0-20210129	46	10	20						X	
1/29	1100	HMPN-MW0047-025.0-20210129	47	20	30						X	
1/29	1130	HMPN-MW0036-015.0-20210129	36	10	20						X	
1/29	1205	HMPN-MW0011-025.0-20210129	11	20	30						X	
1/29	1230	HMPN-MW0029-015.0-20210129	29	10	20						X	
1/29	1300	HMPN-MW0030-025.0-20210129	30	20	30						X	
1/29	1330	HMPN-MW0031-035.0-20210129	31	30	40	GW	G	3			X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	2-1-21	1325	1. RECEIVED BY	2/1/21	1325
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS C-814 0.5°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

AE00180

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2225 | PAGE 2 OF 3

PROJECT NO: 112G08982	FACILITY: HMFN	PROJECT MANAGER Chris Hook	PHONE NUMBER 412-921-8790	LABORATORY NAME AND CONTACT: Enco, Dylnicki
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER Melissa Bennett	PHONE NUMBER 321-914-9394	ADDRESS
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☒ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: HCl
TYPE OF ANALYSIS: VOC

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	VOC	COMMENTS
1/29	1400	HMPN-MW0032-042.5-20210129	32	40	45	GW	G	3	X	
1/29	1435	HMPN-MW0033-047.5-20210129	33	45	50				X	
1/29	1515	HMPN-MW0008-025.0-20210129	8	20	30				X	
1/29	1545	HMPN-MW0024-060.0-20210129	24	55	65				X	
1/29	1640	HMPN-MW0035-035.0-20210129	35	30	40				X	
1/29	1730	HMPN-MW0034-015.0-20210129	34	10	20				X	
1/31	1440	HMPN-MW0039-035.0-20210131	39	30	40				X	
1/31	1530	HMPN-MW0040-042.5-20210131	40	40	45				X	
1/31	1610	HMPN-MW0009-010.0-20210131	9	5	15				X	
1/31	1700	HMPN-MW0004-010.0-20210131	4	5	15				X	
2/1	0830	HMPN-MW0027-0425-20210201	27	40	45				X	
2/1	0915	HMPN-MW0028-047.5-20210201	28	45	50				X	
2/1	0945	HMPN-MW0016-010.0-20210201	16	5	15				X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	2-1-21	1325	1. RECEIVED BY	2/1/21	1325
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

AE00180

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2226 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112GO 8982	HMFN	Chris Hook	412-921-8790	ENCO, Dylnicka
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Melissa Bennett	**PHONE NUMBER** 321-914-9394	**ADDRESS**
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Orlando, FL

STANDARD TAT ☐
RUSH TAT ☒
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☒ 7 day ☐ 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: VOC								COMMENTS
									G	HCl									
2/1	1030	HMPN-MW0030-45-030.0-20210201	45	25	35	GW	G	3			X								
2/1	1110	HMPN-MW0002-035.0-20210201	2	30	40	GW	G	3			X								
2/1	1200	HMPN-DRUM222803-20210201	222803	—	—	GW	G	3			X								

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	2-1-21	1325	1. RECEIVED BY	2/1/21	1525
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

2/2/2021

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN / 112G08982
Purchase Order # : 1170718

Lab Reference # : AE00180 Lab Receipt Date: 01-Feb-21 13:25
Anticipated ***(Estimated)*** Completion Date: 08-Feb-21 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0043-035.0-20210128(Lab ID: AE00180-01), Matrix: Ground Water, Sampled: 28-Jan-21 15:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	11-Feb-21 23:59	Received
Sample ID: HMPN-MW0044-045.0-20210128(Lab ID: AE00180-02), Matrix: Ground Water, Sampled: 28-Jan-21 16:05 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	11-Feb-21 23:59	Received
Sample ID: HMPN-MW0041-035.0-20210128(Lab ID: AE00180-03), Matrix: Ground Water, Sampled: 28-Jan-21 16:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	11-Feb-21 23:59	Received
Sample ID: HMPN-MW0042-042.5-20210128(Lab ID: AE00180-04), Matrix: Ground Water, Sampled: 28-Jan-21 17:35 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	11-Feb-21 23:59	Received
Sample ID: HMPN-MW0037-010.0-20210129(Lab ID: AE00180-05), Matrix: Ground Water, Sampled: 29-Jan-21 09:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0038-020.0-20210129(Lab ID: AE00180-06), Matrix: Ground Water, Sampled: 29-Jan-21 09:55 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0046-015.0-20210129(Lab ID: AE00180-07), Matrix: Ground Water, Sampled: 29-Jan-21 10:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0047-025.0-20210129(Lab ID: AE00180-08), Matrix: Ground Water, Sampled: 29-Jan-21 11:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0036-015.0-20210129(Lab ID: AE00180-09), Matrix: Ground Water, Sampled: 29-Jan-21 11:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0011-025.0-20210129(Lab ID: AE00180-10), Matrix: Ground Water, Sampled: 29-Jan-21 12:05 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0029-015.0-20210129(Lab ID: AE00180-11), Matrix: Ground Water, Sampled: 29-Jan-21 12:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0030-025.0-20210129(Lab ID: AE00180-12), Matrix: Ground Water, Sampled: 29-Jan-21 13:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0031-035.0-20210129(Lab ID: AE00180-13), Matrix: Ground Water, Sampled: 29-Jan-21 13:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0032-042.5-20210129(Lab ID: AE00180-14), Matrix: Ground Water, Sampled: 29-Jan-21 14:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0033-047.5-20210129(Lab ID: AE00180-15), Matrix: Ground Water, Sampled: 29-Jan-21 14:35 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0008-025.0-20210129(Lab ID: AE00180-16), Matrix: Ground Water, Sampled: 29-Jan-21 15:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0024-060.0-20210129(Lab ID: AE00180-17), Matrix: Ground Water, Sampled: 29-Jan-21 15:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0035-035.0-20210129(Lab ID: AE00180-18), Matrix: Ground Water, Sampled: 29-Jan-21 16:40 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0034-015.0-20210129(Lab ID: AE00180-19), Matrix: Ground Water, Sampled: 29-Jan-21 17:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	12-Feb-21 23:59	Received
Sample ID: HMPN-MW0039-035.0-20210131(Lab ID: AE00180-20), Matrix: Ground Water, Sampled: 31-Jan-21 14:40 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	14-Feb-21 23:59	Received
Sample ID: HMPN-MW0040-042.5-20210131(Lab ID: AE00180-21), Matrix: Ground Water, Sampled: 31-Jan-21 15:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	14-Feb-21 23:59	Received
Sample ID: HMPN-MW0009-010.0-20210131(Lab ID: AE00180-22), Matrix: Ground Water, Sampled: 31-Jan-21 16:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	14-Feb-21 23:59	Received
Sample ID: HMPN-MW0004-010.0-20210131(Lab ID: AE00180-23), Matrix: Ground Water, Sampled: 31-Jan-21 17:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	14-Feb-21 23:59	Received
Sample ID: HMPN-MW0027-042.5-20210201(Lab ID: AE00180-24), Matrix: Ground Water, Sampled: 01-Feb-21 08:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	15-Feb-21 23:59	Received
Sample ID: HMPN-MW0028-047.5-20210201(Lab ID: AE00180-25), Matrix: Ground Water, Sampled: 01-Feb-21 09:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	15-Feb-21 23:59	Received

Client: Tetra Tech NUS, Inc. (TE015)
Project Name: NASA KSC HMFN
Requested TAT: 5
Project Number: 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0016-010.0-20210201(Lab ID: AE00180-26), Matrix: Ground Water, Sampled: 01-Feb-21 09:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	15-Feb-21 23:59	Received
Sample ID: HMPN-MW0045-030.0-20210201(Lab ID: AE00180-27), Matrix: Ground Water, Sampled: 01-Feb-21 10:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	15-Feb-21 23:59	Received
Sample ID: HMPN-MW0002-035.0-20210201(Lab ID: AE00180-28), Matrix: Ground Water, Sampled: 01-Feb-21 11:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	15-Feb-21 23:59	Received
Sample ID: HMPN-DRUM222803-20210201(Lab ID: AE00180-29), Matrix: Ground Water, Sampled: 01-Feb-21 12:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	15-Feb-21 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AE00180-TE015

CLASS: 01_VOA_MS

METHOD: EPA 8260D

ANALYSES DATA PACKAGE COVER PAGE

EPA 8260D

Laboratory: ENCO Orlando

SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Client Sample Id:	Lab Sample Id:
HMPN-MW0043-035.0-20210128	AE00180-01
HMPN-MW0044-045.0-20210128	AE00180-02
HMPN-MW0041-035.0-20210128	AE00180-03
HMPN-MW0041-035.0-20210128	AE00180-03RE1
HMPN-MW0042-042.5-20210128	AE00180-04
HMPN-MW0037-010.0-20210129	AE00180-05
HMPN-MW0037-010.0-20210129	AE00180-05RE1
HMPN-MW0038-020.0-20210129	AE00180-06
HMPN-MW0038-020.0-20210129	AE00180-06RE1
HMPN-MW0046-015.0-20210129	AE00180-07
HMPN-MW0047-025.0-20210129	AE00180-08
HMPN-MW0036-015.0-20210129	AE00180-09
HMPN-MW0011-025.0-20210129	AE00180-10
HMPN-MW0029-015.0-20210129	AE00180-11
HMPN-MW0030-025.0-20210129	AE00180-12
HMPN-MW0031-035.0-20210129	AE00180-13
HMPN-MW0032-042.5-20210129	AE00180-14
HMPN-MW0033-047.5-20210129	AE00180-15
HMPN-MW0033-047.5-20210129	AE00180-15RE1
HMPN-MW0008-025.0-20210129	AE00180-16
HMPN-MW0024-060.0-20210129	AE00180-17
HMPN-MW0035-035.0-20210129	AE00180-18
HMPN-MW0035-035.0-20210129	AE00180-18RE1
HMPN-MW0035-035.0-20210129	AE00180-18RE2
HMPN-MW0034-015.0-20210129	AE00180-19
HMPN-MW0034-015.0-20210129	AE00180-19RE1
HMPN-MW0039-035.0-20210131	AE00180-20
HMPN-MW0039-035.0-20210131	AE00180-20RE1
HMPN-MW0040-042.5-20210131	AE00180-21
HMPN-MW0040-042.5-20210131	AE00180-21RE1
HMPN-MW0009-010.0-20210131	AE00180-22
HMPN-MW0009-010.0-20210131	AE00180-22RE1
HMPN-MW0004-010.0-20210131	AE00180-23
HMPN-MW0027-042.5-20210201	AE00180-24
HMPN-MW0027-042.5-20210201	AE00180-24RE1
HMPN-MW0028-047.5-20210201	AE00180-25
HMPN-MW0028-047.5-20210201	AE00180-25RE1
HMPN-MW0016-010.0-20210201	AE00180-26
HMPN-MW0016-010.0-20210201	AE00180-26RE1
HMPN-MW0045-030.0-20210201	AE00180-27
HMPN-MW0045-030.0-20210201	AE00180-27RE1

HMPN-MW0002-035.0-20210201	AE00180-28
HMPN-MW0002-035.0-20210201	AE00180-28RE1
HMPN-DRUM222803-20210201	AE00180-29
HMPN-DRUM222803-20210201	AE00180-29RE1

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0043-035.0-20210128

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-01 File ID: 215B4007.D

Sampled: 01/28/21 15:20 Prepared: 02/04/21 08:53 Analyzed: 02/04/21 10:36

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B04020 Sequence: AA64811 Calibration: 2011113 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	1.8	J	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	89		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	25		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0043-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-01
File ID: 215B4007.D
Sampled: 01/28/21 15:20
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 10:36
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	109	53 - 146	
Toluene-d8	50.0	48	95	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1186548	9.851	1217120	9.845	
1,4-Difluorobenzene	2448503	10.45	2353990	10.438	
Chlorobenzene-d5	1456942	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1373360	15.485	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0044-045.0-20210128

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-02 File ID: 215B4008.D

Sampled: 01/28/21 16:05 Prepared: 02/04/21 08:53 Analyzed: 02/04/21 11:06

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B04020 Sequence: AA64811 Calibration: 2011113 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	500	370	UD	370	1200
74-87-3	Chloromethane	500	410	UD	410	1200
75-01-4	Vinyl chloride	500	360	UD	360	1200
74-83-9	Bromomethane	500	480	UD	480	1200
75-00-3	Chloroethane	500	490	UD	490	1200
75-69-4	Trichlorofluoromethane	500	470	UD	470	1200
76-13-1	Freon 113	500	32000	D	360	1200
67-64-1	Acetone	500	5000	UD	5000	12000
75-35-4	1,1-Dichloroethene	500	470	UD	470	1200
75-15-0	Carbon disulfide	500	1200	UD	1200	6200
75-09-2	Methylene Chloride	500	1200	UD	1200	6200
1634-04-4	Methyl-tert-Butyl Ether	500	300	UD	300	1200
156-60-5	trans-1,2-Dichloroethene	500	360	UD	360	1200
156-59-2	cis-1,2-Dichloroethene	500	540	JD	260	1200
75-34-3	1,1-Dichloroethane	500	310	UD	310	1200
78-93-3	2-Butanone	500	2200	UD	2200	6200
67-66-3	Chloroform	500	400	UD	400	1200
71-55-6	1,1,1-Trichloroethane	500	400	UD	400	1200
79-20-9	Methyl acetate	500	480	UD	480	1200
110-82-7	Cyclohexane	500	460	UD	460	1200
56-23-5	Carbon Tetrachloride	500	470	UD	470	1200
107-06-2	1,2-Dichloroethane	500	320	UD	320	1200
71-43-2	Benzene	500	360	UD	360	1200
79-01-6	Trichloroethene	500	480	JD	440	1200
78-87-5	1,2-Dichloropropane	500	400	UD	400	1200
75-27-4	Bromodichloromethane	500	260	UD	260	1200
108-10-1	4-Methyl-2-pentanone	500	1200	UD	1200	6200
591-78-6	2-Hexanone	500	1200	UD	1200	6200
10061-01-5	cis-1,3-Dichloropropene	500	300	UD	300	1200
108-88-3	Toluene	500	360	UD	360	1200
10061-02-6	trans-1,3-Dichloropropene	500	360	UD	360	1200
79-00-5	1,1,2-Trichloroethane	500	380	UD	380	1200
127-18-4	Tetrachloroethene	500	380	UD	380	1200
124-48-1	Dibromochloromethane	500	250	UD	250	1200
106-93-4	1,2-Dibromoethane	500	390	UD	390	1200
108-90-7	Chlorobenzene	500	360	UD	360	1200
100-41-4	Ethylbenzene	500	340	UD	340	1200
75-25-2	Bromoform	500	380	UD	380	1200
100-42-5	Styrene	500	300	UD	300	1200
98-82-8	Isopropylbenzene	500	340	UD	340	1200
79-34-5	1,1,2,2-Tetrachloroethane	500	270	UD	270	1200

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0044-045.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-02
File ID: 215B4008.D
Sampled: 01/28/21 16:05
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 11:06
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	500	350	UD	350	1200
541-73-1	1,3-Dichlorobenzene	500	380	UD	380	1200
106-46-7	1,4-Dichlorobenzene	500	380	UD	380	1200
95-50-1	1,2-Dichlorobenzene	500	360	UD	360	1200
96-12-8	1,2-Dibromo-3-chloropropane	500	480	UD	480	1200
1330-20-7	Xylenes (Total)	500	650	UD	650	2500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	46	92	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1186771	9.857	1217120	9.845	
1,4-Difluorobenzene	2477777	10.45	2353990	10.438	
Chlorobenzene-d5	1441644	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1332138	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-03
File ID: 215B4009.D
Sampled: 01/28/21 16:45
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 11:35
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	2	99	D	1.1	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	109	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1157451	9.857	1217120	9.845	
1,4-Difluorobenzene	2390240	10.45	2353990	10.438	
Chlorobenzene-d5	1422553	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1351947	15.486	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-03RE1
File ID: 212B5013.D
Sampled: 01/28/21 16:45
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 13:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	32		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.95	J	0.73	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	23		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-03RE1
File ID: 212B5013.D
Sampled: 01/28/21 16:45
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 13:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	103	53 - 146	
Toluene-d8	50.0	49	98	41 - 146	
4-Bromofluorobenzene	50.0	47	94	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	228312	11.49	270209	11.46	
1,4-Difluorobenzene	422708	12.03	483052	12.01	
Chlorobenzene-d5	211162	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	136325	17	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-04
File ID: 215B4010.D
Sampled: 01/28/21 17:35
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 12:05
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	50	37	UD	37	120
74-87-3	Chloromethane	50	41	UD	41	120
75-01-4	Vinyl chloride	50	170	D	36	120
74-83-9	Bromomethane	50	48	UD	48	120
75-00-3	Chloroethane	50	49	UD	49	120
75-69-4	Trichlorofluoromethane	50	47	UD	47	120
76-13-1	Freon 113	50	36	UD	36	120
67-64-1	Acetone	50	500	UD	500	1200
75-35-4	1,1-Dichloroethene	50	47	UD	47	120
75-15-0	Carbon disulfide	50	120	UD	120	620
75-09-2	Methylene Chloride	50	120	UD	120	620
1634-04-4	Methyl-tert-Butyl Ether	50	30	UD	30	120
156-60-5	trans-1,2-Dichloroethene	50	36	UD	36	120
156-59-2	cis-1,2-Dichloroethene	50	2600	D	26	120
75-34-3	1,1-Dichloroethane	50	31	UD	31	120
78-93-3	2-Butanone	50	220	UD	220	620
67-66-3	Chloroform	50	40	UD	40	120
71-55-6	1,1,1-Trichloroethane	50	40	UD	40	120
79-20-9	Methyl acetate	50	48	UD	48	120
110-82-7	Cyclohexane	50	46	UD	46	120
56-23-5	Carbon Tetrachloride	50	47	UD	47	120
107-06-2	1,2-Dichloroethane	50	32	UD	32	120
71-43-2	Benzene	50	36	UD	36	120
79-01-6	Trichloroethene	50	540	D	44	120
78-87-5	1,2-Dichloropropane	50	40	UD	40	120
75-27-4	Bromodichloromethane	50	26	UD	26	120
108-10-1	4-Methyl-2-pentanone	50	120	UD	120	620
591-78-6	2-Hexanone	50	120	UD	120	620
10061-01-5	cis-1,3-Dichloropropene	50	30	UD	30	120
108-88-3	Toluene	50	36	UD	36	120
10061-02-6	trans-1,3-Dichloropropene	50	36	UD	36	120
79-00-5	1,1,2-Trichloroethane	50	38	UD	38	120
127-18-4	Tetrachloroethene	50	38	UD	38	120
124-48-1	Dibromochloromethane	50	25	UD	25	120
106-93-4	1,2-Dibromoethane	50	39	UD	39	120
108-90-7	Chlorobenzene	50	36	UD	36	120
100-41-4	Ethylbenzene	50	34	UD	34	120
75-25-2	Bromoform	50	38	UD	38	120
100-42-5	Styrene	50	30	UD	30	120
98-82-8	Isopropylbenzene	50	34	UD	34	120
79-34-5	1,1,2,2-Tetrachloroethane	50	27	UD	27	120

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-04
File ID: 215B4010.D
Sampled: 01/28/21 17:35
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 12:05
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	50	35	UD	35	120
541-73-1	1,3-Dichlorobenzene	50	38	UD	38	120
106-46-7	1,4-Dichlorobenzene	50	38	UD	38	120
95-50-1	1,2-Dichlorobenzene	50	36	UD	36	120
96-12-8	1,2-Dibromo-3-chloropropane	50	48	UD	48	120
1330-20-7	Xylenes (Total)	50	65	UD	65	250

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	109	53 - 146	
Toluene-d8	50.0	47	95	41 - 146	
4-Bromofluorobenzene	50.0	55	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1180192	9.857	1217120	9.845	
1,4-Difluorobenzene	2405496	10.45	2353990	10.438	
Chlorobenzene-d5	1398495	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1332643	15.485	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-05
File ID: 215B4011.D
Sampled: 01/29/21 09:20
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 12:34
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	4.8		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.74	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	2.3	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	28		0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	1.2	J	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-05
File ID: 215B4011.D
Sampled: 01/29/21 09:20
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 12:34
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	107	53 - 146	
Toluene-d8	50.0	47	93	41 - 146	
4-Bromofluorobenzene	50.0	55	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1216684	9.857	1217120	9.845	
1,4-Difluorobenzene	2482323	10.45	2353990	10.438	
Chlorobenzene-d5	1385442	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1355439	15.485	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-05RE1
File ID: 212B5014.D
Sampled: 01/29/21 09:20
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 14:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
1330-20-7	Xylenes (Total)	1	2.0	J	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	49	98	41 - 146	
4-Bromofluorobenzene	50.0	47	93	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	223623	11.48	270209	11.46	
1,4-Difluorobenzene	414444	12.04	483052	12.01	
Chlorobenzene-d5	206398	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	133311	17	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-06
File ID: 215B4012.D
Sampled: 01/29/21 09:55
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 13:04
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	10		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.5
75-34-3	1,1-Dichloroethane	1	17		0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	5.1		0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	1.0	J	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-06
File ID: 215B4012.D
Sampled: 01/29/21 09:55
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 13:04
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	110	53 - 146	
Toluene-d8	50.0	47	95	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1180318	9.857	1217120	9.845	
1,4-Difluorobenzene	2454660	10.45	2353990	10.438	
Chlorobenzene-d5	1424205	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1381669	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-06RE1
File ID: 212B5015.D
Sampled: 01/29/21 09:55
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 14:51
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
1330-20-7	Xylenes (Total)	1	5.2		1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	112	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	233178	11.49	270209	11.46	
1,4-Difluorobenzene	430268	12.04	483052	12.01	
Chlorobenzene-d5	216243	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	143648	17.01	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0046-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-07
File ID: 215B4013.D
Sampled: 01/29/21 10:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 13:33
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	6.0		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	7.3		0.53	2.5
75-34-3	1,1-Dichloroethane	1	1.8	J	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0046-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-07
File ID: 215B4013.D
Sampled: 01/29/21 10:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 13:33
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	46	92	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1187500	9.857	1217120	9.845	
1,4-Difluorobenzene	2415397	10.45	2353990	10.438	
Chlorobenzene-d5	1358505	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1315950	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0047-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-08
File ID: 215B4014.D
Sampled: 01/29/21 11:00
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 14:03
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	37		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	17		0.53	2.5
75-34-3	1,1-Dichloroethane	1	4.4		0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0047-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-08
File ID: 215B4014.D
Sampled: 01/29/21 11:00
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 14:03
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	105	53 - 146	
Toluene-d8	50.0	46	92	41 - 146	
4-Bromofluorobenzene	50.0	55	111	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1217323	9.857	1217120	9.845	
1,4-Difluorobenzene	2502226	10.45	2353990	10.438	
Chlorobenzene-d5	1407587	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1372086	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-09
File ID: 215B4015.D
Sampled: 01/29/21 11:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 14:33
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.2	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	11		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.76	J	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-09
File ID: 215B4015.D
Sampled: 01/29/21 11:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 14:33
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	103	53 - 146	
Toluene-d8	50.0	48	96	41 - 146	
4-Bromofluorobenzene	50.0	55	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1178944	9.857	1217120	9.845	
1,4-Difluorobenzene	2372364	10.45	2353990	10.438	
Chlorobenzene-d5	1372897	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1346543	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0011-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-10
File ID: 215B4016.D
Sampled: 01/29/21 12:05
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 15:02
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	23		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.91	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	49		0.53	2.5
75-34-3	1,1-Dichloroethane	1	1.7	J	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0011-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-10
File ID: 215B4016.D
Sampled: 01/29/21 12:05
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 15:02
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	48	96	41 - 146	
4-Bromofluorobenzene	50.0	55	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1215606	9.857	1217120	9.845	
1,4-Difluorobenzene	2438959	10.45	2353990	10.438	
Chlorobenzene-d5	1392403	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1353015	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0029-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-11
File ID: 215B4017.D
Sampled: 01/29/21 12:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 15:32
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	4.1		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	3.2		0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	1.4	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	48		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	25		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0029-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-11
File ID: 215B4017.D
Sampled: 01/29/21 12:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 15:32
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	48	96	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1149886	9.862	1217120	9.845	
1,4-Difluorobenzene	2385404	10.45	2353990	10.438	
Chlorobenzene-d5	1381654	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1358096	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-12
File ID: 215B4018.D
Sampled: 01/29/21 13:00
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 16:01
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	2.5	1.8	UD	1.8	6.2
74-87-3	Chloromethane	2.5	2.0	UD	2.0	6.2
75-01-4	Vinyl chloride	2.5	6.0	JD	1.8	6.2
74-83-9	Bromomethane	2.5	2.4	UD	2.4	6.2
75-00-3	Chloroethane	2.5	2.4	UD	2.4	6.2
75-69-4	Trichlorofluoromethane	2.5	2.4	UD	2.4	6.2
76-13-1	Freon 113	2.5	14	D	1.8	6.2
67-64-1	Acetone	2.5	25	UD	25	62
75-35-4	1,1-Dichloroethene	2.5	2.4	UD	2.4	6.2
75-15-0	Carbon disulfide	2.5	6.2	UD	6.2	31
75-09-2	Methylene Chloride	2.5	6.2	UD	6.2	31
1634-04-4	Methyl-tert-Butyl Ether	2.5	1.5	UD	1.5	6.2
156-60-5	trans-1,2-Dichloroethene	2.5	1.8	UD	1.8	6.2
156-59-2	cis-1,2-Dichloroethene	2.5	150	D	1.3	6.2
75-34-3	1,1-Dichloroethane	2.5	1.6	UD	1.6	6.2
78-93-3	2-Butanone	2.5	11	UD	11	31
67-66-3	Chloroform	2.5	2.0	UD	2.0	6.2
71-55-6	1,1,1-Trichloroethane	2.5	2.0	UD	2.0	6.2
79-20-9	Methyl acetate	2.5	2.4	UD	2.4	6.2
110-82-7	Cyclohexane	2.5	2.3	UD	2.3	6.2
56-23-5	Carbon Tetrachloride	2.5	2.4	UD	2.4	6.2
107-06-2	1,2-Dichloroethane	2.5	1.6	UD	1.6	6.2
71-43-2	Benzene	2.5	1.8	UD	1.8	6.2
79-01-6	Trichloroethene	2.5	180	D	2.2	6.2
78-87-5	1,2-Dichloropropane	2.5	2.0	UD	2.0	6.2
75-27-4	Bromodichloromethane	2.5	1.3	UD	1.3	6.2
108-10-1	4-Methyl-2-pentanone	2.5	6.2	UD	6.2	31
591-78-6	2-Hexanone	2.5	6.2	UD	6.2	31
10061-01-5	cis-1,3-Dichloropropene	2.5	1.5	UD	1.5	6.2
108-88-3	Toluene	2.5	1.8	UD	1.8	6.2
10061-02-6	trans-1,3-Dichloropropene	2.5	1.8	UD	1.8	6.2
79-00-5	1,1,2-Trichloroethane	2.5	1.9	UD	1.9	6.2
127-18-4	Tetrachloroethene	2.5	1.9	UD	1.9	6.2
124-48-1	Dibromochloromethane	2.5	1.2	UD	1.2	6.2
106-93-4	1,2-Dibromoethane	2.5	2.0	UD	2.0	6.2
108-90-7	Chlorobenzene	2.5	1.8	UD	1.8	6.2
100-41-4	Ethylbenzene	2.5	1.7	UD	1.7	6.2
75-25-2	Bromoform	2.5	1.9	UD	1.9	6.2
100-42-5	Styrene	2.5	1.5	UD	1.5	6.2
98-82-8	Isopropylbenzene	2.5	1.7	UD	1.7	6.2
79-34-5	1,1,2,2-Tetrachloroethane	2.5	1.4	UD	1.4	6.2

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-12
File ID: 215B4018.D
Sampled: 01/29/21 13:00
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 16:01
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	2.5	1.8	UD	1.8	6.2
541-73-1	1,3-Dichlorobenzene	2.5	1.9	UD	1.9	6.2
106-46-7	1,4-Dichlorobenzene	2.5	1.9	UD	1.9	6.2
95-50-1	1,2-Dichlorobenzene	2.5	1.8	UD	1.8	6.2
96-12-8	1,2-Dibromo-3-chloropropane	2.5	2.4	UD	2.4	6.2
1330-20-7	Xylenes (Total)	2.5	3.2	UD	3.2	12

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	109	53 - 146	
Toluene-d8	50.0	48	95	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1174117	9.862	1217120	9.845	
1,4-Difluorobenzene	2417037	10.45	2353990	10.438	
Chlorobenzene-d5	1426949	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1359965	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-13
File ID: 215B4019.D
Sampled: 01/29/21 13:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 16:31
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	10	7.4	UD	7.4	25
74-87-3	Chloromethane	10	8.2	UD	8.2	25
75-01-4	Vinyl chloride	10	13	JD	7.1	25
74-83-9	Bromomethane	10	9.5	UD	9.5	25
75-00-3	Chloroethane	10	9.8	UD	9.8	25
75-69-4	Trichlorofluoromethane	10	9.4	UD	9.4	25
76-13-1	Freon 113	10	7.3	UD	7.3	25
67-64-1	Acetone	10	100	UD	100	250
75-35-4	1,1-Dichloroethene	10	9.4	UD	9.4	25
75-15-0	Carbon disulfide	10	25	UD	25	120
75-09-2	Methylene Chloride	10	25	UD	25	120
1634-04-4	Methyl-tert-Butyl Ether	10	6.0	UD	6.0	25
156-60-5	trans-1,2-Dichloroethene	10	7.3	UD	7.3	25
156-59-2	cis-1,2-Dichloroethene	10	490	D	5.3	25
75-34-3	1,1-Dichloroethane	10	6.2	UD	6.2	25
78-93-3	2-Butanone	10	45	UD	45	120
67-66-3	Chloroform	10	8.0	UD	8.0	25
71-55-6	1,1,1-Trichloroethane	10	8.0	UD	8.0	25
79-20-9	Methyl acetate	10	9.5	UD	9.5	25
110-82-7	Cyclohexane	10	9.3	UD	9.3	25
56-23-5	Carbon Tetrachloride	10	9.4	UD	9.4	25
107-06-2	1,2-Dichloroethane	10	6.3	UD	6.3	25
71-43-2	Benzene	10	7.1	UD	7.1	25
79-01-6	Trichloroethene	10	510	D	8.9	25
78-87-5	1,2-Dichloropropane	10	8.0	UD	8.0	25
75-27-4	Bromodichloromethane	10	5.2	UD	5.2	25
108-10-1	4-Methyl-2-pentanone	10	25	UD	25	120
591-78-6	2-Hexanone	10	25	UD	25	120
10061-01-5	cis-1,3-Dichloropropene	10	5.9	UD	5.9	25
108-88-3	Toluene	10	7.2	UD	7.2	25
10061-02-6	trans-1,3-Dichloropropene	10	7.3	UD	7.3	25
79-00-5	1,1,2-Trichloroethane	10	7.6	UD	7.6	25
127-18-4	Tetrachloroethene	10	7.6	UD	7.6	25
124-48-1	Dibromochloromethane	10	5.0	UD	5.0	25
106-93-4	1,2-Dibromoethane	10	7.8	UD	7.8	25
108-90-7	Chlorobenzene	10	7.2	UD	7.2	25
100-41-4	Ethylbenzene	10	6.9	UD	6.9	25
75-25-2	Bromoform	10	7.5	UD	7.5	25
100-42-5	Styrene	10	6.1	UD	6.1	25
98-82-8	Isopropylbenzene	10	6.7	UD	6.7	25
79-34-5	1,1,2,2-Tetrachloroethane	10	5.4	UD	5.4	25

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-13
File ID: 215B4019.D
Sampled: 01/29/21 13:30
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 16:31
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	10	7.0	UD	7.0	25
541-73-1	1,3-Dichlorobenzene	10	7.7	UD	7.7	25
106-46-7	1,4-Dichlorobenzene	10	7.6	UD	7.6	25
95-50-1	1,2-Dichlorobenzene	10	7.3	UD	7.3	25
96-12-8	1,2-Dibromo-3-chloropropane	10	9.6	UD	9.6	25
1330-20-7	Xylenes (Total)	10	13	UD	13	50

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	107	53 - 146	
Toluene-d8	50.0	47	93	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1206545	9.857	1217120	9.845	
1,4-Difluorobenzene	2436731	10.45	2353990	10.438	
Chlorobenzene-d5	1382941	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1338681	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-14
File ID: 215B4020.D
Sampled: 01/29/21 14:00
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 17:00
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	100	74	UD	74	250
74-87-3	Chloromethane	100	82	UD	82	250
75-01-4	Vinyl chloride	100	170	JD	71	250
74-83-9	Bromomethane	100	95	UD	95	250
75-00-3	Chloroethane	100	98	UD	98	250
75-69-4	Trichlorofluoromethane	100	94	UD	94	250
76-13-1	Freon 113	100	73	UD	73	250
67-64-1	Acetone	100	1000	UD	1000	2500
75-35-4	1,1-Dichloroethene	100	94	UD	94	250
75-15-0	Carbon disulfide	100	250	UD	250	1200
75-09-2	Methylene Chloride	100	250	UD	250	1200
1634-04-4	Methyl-tert-Butyl Ether	100	60	UD	60	250
156-60-5	trans-1,2-Dichloroethene	100	73	UD	73	250
156-59-2	cis-1,2-Dichloroethene	100	5700	D	53	250
75-34-3	1,1-Dichloroethane	100	62	UD	62	250
78-93-3	2-Butanone	100	450	UD	450	1200
67-66-3	Chloroform	100	80	UD	80	250
71-55-6	1,1,1-Trichloroethane	100	80	UD	80	250
79-20-9	Methyl acetate	100	95	UD	95	250
110-82-7	Cyclohexane	100	93	UD	93	250
56-23-5	Carbon Tetrachloride	100	94	UD	94	250
107-06-2	1,2-Dichloroethane	100	63	UD	63	250
71-43-2	Benzene	100	71	UD	71	250
79-01-6	Trichloroethene	100	7400	D	89	250
78-87-5	1,2-Dichloropropane	100	80	UD	80	250
75-27-4	Bromodichloromethane	100	52	UD	52	250
108-10-1	4-Methyl-2-pentanone	100	250	UD	250	1200
591-78-6	2-Hexanone	100	250	UD	250	1200
10061-01-5	cis-1,3-Dichloropropene	100	59	UD	59	250
108-88-3	Toluene	100	72	UD	72	250
10061-02-6	trans-1,3-Dichloropropene	100	73	UD	73	250
79-00-5	1,1,2-Trichloroethane	100	76	UD	76	250
127-18-4	Tetrachloroethene	100	76	UD	76	250
124-48-1	Dibromochloromethane	100	50	UD	50	250
106-93-4	1,2-Dibromoethane	100	78	UD	78	250
108-90-7	Chlorobenzene	100	72	UD	72	250
100-41-4	Ethylbenzene	100	69	UD	69	250
75-25-2	Bromoform	100	75	UD	75	250
100-42-5	Styrene	100	61	UD	61	250
98-82-8	Isopropylbenzene	100	67	UD	67	250
79-34-5	1,1,2,2-Tetrachloroethane	100	54	UD	54	250

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-14
File ID: 215B4020.D
Sampled: 01/29/21 14:00
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 17:00
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	100	70	UD	70	250
541-73-1	1,3-Dichlorobenzene	100	77	UD	77	250
106-46-7	1,4-Dichlorobenzene	100	76	UD	76	250
95-50-1	1,2-Dichlorobenzene	100	73	UD	73	250
96-12-8	1,2-Dibromo-3-chloropropane	100	96	UD	96	250
1330-20-7	Xylenes (Total)	100	130	UD	130	500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	48	96	41 - 146	
4-Bromofluorobenzene	50.0	55	110	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1149494	9.857	1217120	9.845	
1,4-Difluorobenzene	2354754	10.456	2353990	10.438	
Chlorobenzene-d5	1352565	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1326447	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0033-047.5-20210129

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-15RE1 File ID: 212B5011.D

Sampled: 01/29/21 14:35 Prepared: 02/05/21 00:00 Analyzed: 02/05/21 12:56

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B05008 Sequence: AA64833 Calibration: 2102033 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	250	180	UD	180	620
74-87-3	Chloromethane	250	200	UD	200	620
75-01-4	Vinyl chloride	250	990	D	180	620
74-83-9	Bromomethane	250	240	UD	240	620
75-00-3	Chloroethane	250	240	UD	240	620
75-69-4	Trichlorofluoromethane	250	240	UD	240	620
76-13-1	Freon 113	250	180	UD	180	620
67-64-1	Acetone	250	2500	UD	2500	6200
75-35-4	1,1-Dichloroethene	250	240	UD	240	620
75-15-0	Carbon disulfide	250	620	UD	620	3100
75-09-2	Methylene Chloride	250	620	UD	620	3100
1634-04-4	Methyl-tert-Butyl Ether	250	150	UD	150	620
156-60-5	trans-1,2-Dichloroethene	250	180	UD	180	620
156-59-2	cis-1,2-Dichloroethene	250	21000	D	130	620
75-34-3	1,1-Dichloroethane	250	160	UD	160	620
78-93-3	2-Butanone	250	1100	UD	1100	3100
67-66-3	Chloroform	250	200	UD	200	620
71-55-6	1,1,1-Trichloroethane	250	200	UD	200	620
79-20-9	Methyl acetate	250	240	UD	240	620
110-82-7	Cyclohexane	250	230	UD	230	620
56-23-5	Carbon Tetrachloride	250	240	UD	240	620
107-06-2	1,2-Dichloroethane	250	160	UD	160	620
71-43-2	Benzene	250	180	UD	180	620
79-01-6	Trichloroethene	250	22000	D	220	620
78-87-5	1,2-Dichloropropane	250	200	UD	200	620
75-27-4	Bromodichloromethane	250	130	UD	130	620
108-10-1	4-Methyl-2-pentanone	250	620	UD	620	3100
591-78-6	2-Hexanone	250	620	UD	620	3100
10061-01-5	cis-1,3-Dichloropropene	250	150	UD	150	620
108-88-3	Toluene	250	180	UD	180	620
10061-02-6	trans-1,3-Dichloropropene	250	180	UD	180	620
79-00-5	1,1,2-Trichloroethane	250	190	UD	190	620
127-18-4	Tetrachloroethene	250	190	UD	190	620
124-48-1	Dibromochloromethane	250	120	UD	120	620
106-93-4	1,2-Dibromoethane	250	200	UD	200	620
108-90-7	Chlorobenzene	250	180	UD	180	620
100-41-4	Ethylbenzene	250	170	UD	170	620
75-25-2	Bromoform	250	190	UD	190	620
100-42-5	Styrene	250	150	UD	150	620
98-82-8	Isopropylbenzene	250	170	UD	170	620
79-34-5	1,1,2,2-Tetrachloroethane	250	140	UD	140	620

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0033-047.5-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-15RE1
File ID: 212B5011.D
Sampled: 01/29/21 14:35
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 12:56
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	250	180	UD	180	620
541-73-1	1,3-Dichlorobenzene	250	190	UD	190	620
106-46-7	1,4-Dichlorobenzene	250	190	UD	190	620
95-50-1	1,2-Dichlorobenzene	250	180	UD	180	620
96-12-8	1,2-Dibromo-3-chloropropane	250	240	UD	240	620
1330-20-7	Xylenes (Total)	250	320	UD	320	1200

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	49	97	41 - 146	
4-Bromofluorobenzene	50.0	47	94	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	228769	11.48	270209	11.46	
1,4-Difluorobenzene	424534	12.04	483052	12.01	
Chlorobenzene-d5	213521	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	140182	17	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0008-025.0-20210129

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-16 File ID: 215B4022.D

Sampled: 01/29/21 15:15 Prepared: 02/04/21 08:53 Analyzed: 02/04/21 17:59

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B04020 Sequence: AA64811 Calibration: 2011113 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.89	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	3.8		0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.76	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	41		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	14		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0008-025.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-16
File ID: 215B4022.D
Sampled: 01/29/21 15:15
Prepared: 02/04/21 08:53
Analyzed: 02/04/21 17:59
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04020
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	56	112	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1215488	9.862	1217120	9.845	
1,4-Difluorobenzene	2425935	10.456	2353990	10.438	
Chlorobenzene-d5	1382411	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1375428	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0024-060.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-17
File ID: 215B4036.D
Sampled: 01/29/21 15:45
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 00:55
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0024-060.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-17
File ID: 215B4036.D
Sampled: 01/29/21 15:45
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 00:55
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	55	110	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1292426	9.863	1217120	9.845	
1,4-Difluorobenzene	2695366	10.456	2353990	10.438	
Chlorobenzene-d5	1533203	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1432979	15.491	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-18
File ID: 215B4037.D
Sampled: 01/29/21 16:40
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 01:25
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	1.3	J	0.73	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	9.8		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-18
File ID: 215B4037.D
Sampled: 01/29/21 16:40
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 01:25
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	111	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1248483	9.863	1217120	9.845	
1,4-Difluorobenzene	2638675	10.456	2353990	10.438	
Chlorobenzene-d5	1501734	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1399603	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-18RE1
File ID: 215B5010.D
Sampled: 01/29/21 16:40
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 12:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	1	5.5		0.71	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	105	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	55	111	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1301216	9.862	1217120	9.845	
1,4-Difluorobenzene	2638883	10.456	2353990	10.438	
Chlorobenzene-d5	1521247	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1422637	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-18RE2
File ID: 215B5012.D
Sampled: 01/29/21 16:40
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 13:22
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	5	81	D	2.6	12

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	101	53 - 146	
Toluene-d8	50.0	46	93	41 - 146	
4-Bromofluorobenzene	50.0	53	105	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1236391	9.868	1217120	9.845	
1,4-Difluorobenzene	2433174	10.462	2353990	10.438	
Chlorobenzene-d5	1431100	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1339352	15.503	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-19
File ID: 215B4038.D
Sampled: 01/29/21 17:30
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 01:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	1.1	J	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	15		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	6.3		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-19
File ID: 215B4038.D
Sampled: 01/29/21 17:30
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 01:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	47	93	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1202815	9.863	1217120	9.845	
1,4-Difluorobenzene	2508689	10.456	2353990	10.438	
Chlorobenzene-d5	1469083	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1389638	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210129

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-19RE1
File ID: 215B5011.D
Sampled: 01/29/21 17:30
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 12:53
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	1	1.4	J	0.71	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	54	107	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1217200	9.863	1217120	9.845	
1,4-Difluorobenzene	2446801	10.462	2353990	10.438	
Chlorobenzene-d5	1419980	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1365299	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-20
File ID: 215B4039.D
Sampled: 01/31/21 14:40
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 02:24
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	25	18	UD	18	62
74-87-3	Chloromethane	25	20	UD	20	62
74-83-9	Bromomethane	25	24	UD	24	62
75-00-3	Chloroethane	25	24	UD	24	62
75-69-4	Trichlorofluoromethane	25	24	UD	24	62
76-13-1	Freon 113	25	18	UD	18	62
67-64-1	Acetone	25	250	UD	250	620
75-35-4	1,1-Dichloroethene	25	24	UD	24	62
75-15-0	Carbon disulfide	25	62	UD	62	310
75-09-2	Methylene Chloride	25	62	UD	62	310
1634-04-4	Methyl-tert-Butyl Ether	25	15	UD	15	62
156-60-5	trans-1,2-Dichloroethene	25	18	UD	18	62
156-59-2	cis-1,2-Dichloroethene	25	1400	D	13	62
75-34-3	1,1-Dichloroethane	25	16	UD	16	62
78-93-3	2-Butanone	25	110	UD	110	310
67-66-3	Chloroform	25	20	UD	20	62
71-55-6	1,1,1-Trichloroethane	25	20	UD	20	62
79-20-9	Methyl acetate	25	24	UD	24	62
110-82-7	Cyclohexane	25	23	UD	23	62
56-23-5	Carbon Tetrachloride	25	24	UD	24	62
107-06-2	1,2-Dichloroethane	25	16	UD	16	62
71-43-2	Benzene	25	18	UD	18	62
79-01-6	Trichloroethene	25	38	JD	22	62
78-87-5	1,2-Dichloropropane	25	20	UD	20	62
75-27-4	Bromodichloromethane	25	13	UD	13	62
108-10-1	4-Methyl-2-pentanone	25	62	UD	62	310
591-78-6	2-Hexanone	25	62	UD	62	310
10061-01-5	cis-1,3-Dichloropropene	25	15	UD	15	62
108-88-3	Toluene	25	18	UD	18	62
10061-02-6	trans-1,3-Dichloropropene	25	18	UD	18	62
79-00-5	1,1,2-Trichloroethane	25	19	UD	19	62
127-18-4	Tetrachloroethene	25	19	UD	19	62
124-48-1	Dibromochloromethane	25	12	UD	12	62
106-93-4	1,2-Dibromoethane	25	20	UD	20	62
108-90-7	Chlorobenzene	25	18	UD	18	62
100-41-4	Ethylbenzene	25	17	UD	17	62
75-25-2	Bromoform	25	19	UD	19	62
100-42-5	Styrene	25	15	UD	15	62
98-82-8	Isopropylbenzene	25	17	UD	17	62
79-34-5	1,1,2,2-Tetrachloroethane	25	14	UD	14	62
120-82-1	1,2,4-Trichlorobenzene	25	18	UD	18	62

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-20
File ID: 215B4039.D
Sampled: 01/31/21 14:40
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 02:24
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	25	19	UD	19	62
106-46-7	1,4-Dichlorobenzene	25	19	UD	19	62
95-50-1	1,2-Dichlorobenzene	25	18	UD	18	62
96-12-8	1,2-Dibromo-3-chloropropane	25	24	UD	24	62
1330-20-7	Xylenes (Total)	25	32	UD	32	120

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	107	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1171849	9.862	1217120	9.845	
1,4-Difluorobenzene	2414208	10.456	2353990	10.438	
Chlorobenzene-d5	1390675	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1341887	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-20RE1
File ID: 215B5013.D
Sampled: 01/31/21 14:40
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 13:52
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	25	210	D	18	62

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	101	53 - 146	
Toluene-d8	50.0	46	93	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1218553	9.868	1217120	9.845	
1,4-Difluorobenzene	2459794	10.462	2353990	10.438	
Chlorobenzene-d5	1415039	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1371545	15.503	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210131

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-21 File ID: 215B4040.D

Sampled: 01/31/21 15:30 Prepared: 02/04/21 13:17 Analyzed: 02/05/21 02:54

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B04041 Sequence: AA64821 Calibration: 2011113 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	56		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	12		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-21
File ID: 215B4040.D
Sampled: 01/31/21 15:30
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 02:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	48	97	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1166335	9.862	1217120	9.845	
1,4-Difluorobenzene	2364955	10.456	2353990	10.438	
Chlorobenzene-d5	1368132	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1346925	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-21RE1
File ID: 215B5014.D
Sampled: 01/31/21 15:30
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 14:21
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	1	12		0.71	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	46	91	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1225894	9.868	1217120	9.845	
1,4-Difluorobenzene	2468436	10.462	2353990	10.438	
Chlorobenzene-d5	1373917	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1368193	15.503	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-010.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-22
File ID: 215B4041.D
Sampled: 01/31/21 16:10
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 03:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	5	3.7	UD	3.7	12
74-87-3	Chloromethane	5	4.1	UD	4.1	12
74-83-9	Bromomethane	5	4.8	UD	4.8	12
75-00-3	Chloroethane	5	4.9	UD	4.9	12
75-69-4	Trichlorofluoromethane	5	4.7	UD	4.7	12
76-13-1	Freon 113	5	3.6	UD	3.6	12
67-64-1	Acetone	5	50	UD	50	120
75-35-4	1,1-Dichloroethene	5	4.7	UD	4.7	12
75-15-0	Carbon disulfide	5	12	UD	12	62
75-09-2	Methylene Chloride	5	12	UD	12	62
1634-04-4	Methyl-tert-Butyl Ether	5	3.0	UD	3.0	12
156-60-5	trans-1,2-Dichloroethene	5	3.6	UD	3.6	12
156-59-2	cis-1,2-Dichloroethene	5	360	D	2.6	12
75-34-3	1,1-Dichloroethane	5	3.1	UD	3.1	12
78-93-3	2-Butanone	5	22	UD	22	62
67-66-3	Chloroform	5	4.0	UD	4.0	12
71-55-6	1,1,1-Trichloroethane	5	4.0	UD	4.0	12
79-20-9	Methyl acetate	5	4.8	UD	4.8	12
110-82-7	Cyclohexane	5	4.6	UD	4.6	12
56-23-5	Carbon Tetrachloride	5	4.7	UD	4.7	12
107-06-2	1,2-Dichloroethane	5	3.2	UD	3.2	12
71-43-2	Benzene	5	3.6	UD	3.6	12
79-01-6	Trichloroethene	5	49	D	4.4	12
78-87-5	1,2-Dichloropropane	5	4.0	UD	4.0	12
75-27-4	Bromodichloromethane	5	2.6	UD	2.6	12
108-10-1	4-Methyl-2-pentanone	5	12	UD	12	62
591-78-6	2-Hexanone	5	12	UD	12	62
10061-01-5	cis-1,3-Dichloropropene	5	3.0	UD	3.0	12
108-88-3	Toluene	5	3.6	UD	3.6	12
10061-02-6	trans-1,3-Dichloropropene	5	3.6	UD	3.6	12
79-00-5	1,1,2-Trichloroethane	5	3.8	UD	3.8	12
127-18-4	Tetrachloroethene	5	3.8	UD	3.8	12
124-48-1	Dibromochloromethane	5	2.5	UD	2.5	12
106-93-4	1,2-Dibromoethane	5	3.9	UD	3.9	12
108-90-7	Chlorobenzene	5	3.6	UD	3.6	12
100-41-4	Ethylbenzene	5	3.4	UD	3.4	12
75-25-2	Bromoform	5	3.8	UD	3.8	12
100-42-5	Styrene	5	3.0	UD	3.0	12
98-82-8	Isopropylbenzene	5	3.4	UD	3.4	12
79-34-5	1,1,2,2-Tetrachloroethane	5	2.7	UD	2.7	12
120-82-1	1,2,4-Trichlorobenzene	5	3.5	UD	3.5	12

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-010.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-22
File ID: 215B4041.D
Sampled: 01/31/21 16:10
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 03:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	5	3.8	UD	3.8	12
106-46-7	1,4-Dichlorobenzene	5	3.8	UD	3.8	12
95-50-1	1,2-Dichlorobenzene	5	3.6	UD	3.6	12
96-12-8	1,2-Dibromo-3-chloropropane	5	4.8	UD	4.8	12
1330-20-7	Xylenes (Total)	5	6.5	UD	6.5	25

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	107	53 - 146	
Toluene-d8	50.0	48	95	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1143182	9.862	1217120	9.845	
1,4-Difluorobenzene	2352955	10.456	2353990	10.438	
Chlorobenzene-d5	1368339	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1310244	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-010.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-22RE1
File ID: 215B5015.D
Sampled: 01/31/21 16:10
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 14:51
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	5	30	D	3.6	12

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	47	95	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1301842	9.868	1217120	9.845	
1,4-Difluorobenzene	2645394	10.462	2353990	10.438	
Chlorobenzene-d5	1519218	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1381923	15.503	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0004-010.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-23
File ID: 215B4042.D
Sampled: 01/31/21 17:00
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 03:53
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	1.1	J	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	1.1	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	12		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	33		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0004-010.0-20210131

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-23
File ID: 215B4042.D
Sampled: 01/31/21 17:00
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 03:53
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	109	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1165698	9.862	1217120	9.845	
1,4-Difluorobenzene	2408044	10.456	2353990	10.438	
Chlorobenzene-d5	1365623	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1340939	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-24
File ID: 215B4043.D
Sampled: 02/01/21 08:30
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 04:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	500	370	UD	370	1200
74-87-3	Chloromethane	500	410	UD	410	1200
75-01-4	Vinyl chloride	500	360	UD	360	1200
74-83-9	Bromomethane	500	480	UD	480	1200
75-00-3	Chloroethane	500	490	UD	490	1200
75-69-4	Trichlorofluoromethane	500	470	UD	470	1200
76-13-1	Freon 113	500	21000	D	360	1200
67-64-1	Acetone	500	5000	UD	5000	12000
75-35-4	1,1-Dichloroethene	500	470	UD	470	1200
75-15-0	Carbon disulfide	500	1200	UD	1200	6200
75-09-2	Methylene Chloride	500	1200	UD	1200	6200
1634-04-4	Methyl-tert-Butyl Ether	500	300	UD	300	1200
156-60-5	trans-1,2-Dichloroethene	500	360	UD	360	1200
156-59-2	cis-1,2-Dichloroethene	500	2000	D	260	1200
75-34-3	1,1-Dichloroethane	500	310	UD	310	1200
78-93-3	2-Butanone	500	2200	UD	2200	6200
67-66-3	Chloroform	500	400	UD	400	1200
71-55-6	1,1,1-Trichloroethane	500	400	UD	400	1200
79-20-9	Methyl acetate	500	480	UD	480	1200
110-82-7	Cyclohexane	500	460	UD	460	1200
56-23-5	Carbon Tetrachloride	500	470	UD	470	1200
107-06-2	1,2-Dichloroethane	500	320	UD	320	1200
71-43-2	Benzene	500	360	UD	360	1200
78-87-5	1,2-Dichloropropane	500	400	UD	400	1200
75-27-4	Bromodichloromethane	500	260	UD	260	1200
108-10-1	4-Methyl-2-pentanone	500	1200	UD	1200	6200
591-78-6	2-Hexanone	500	1200	UD	1200	6200
10061-01-5	cis-1,3-Dichloropropene	500	300	UD	300	1200
108-88-3	Toluene	500	360	UD	360	1200
10061-02-6	trans-1,3-Dichloropropene	500	360	UD	360	1200
79-00-5	1,1,2-Trichloroethane	500	380	UD	380	1200
127-18-4	Tetrachloroethene	500	380	UD	380	1200
124-48-1	Dibromochloromethane	500	250	UD	250	1200
106-93-4	1,2-Dibromoethane	500	390	UD	390	1200
108-90-7	Chlorobenzene	500	360	UD	360	1200
100-41-4	Ethylbenzene	500	340	UD	340	1200
75-25-2	Bromoform	500	380	UD	380	1200
100-42-5	Styrene	500	300	UD	300	1200
98-82-8	Isopropylbenzene	500	340	UD	340	1200
79-34-5	1,1,2,2-Tetrachloroethane	500	270	UD	270	1200
120-82-1	1,2,4-Trichlorobenzene	500	350	UD	350	1200

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-24
File ID: 215B4043.D
Sampled: 02/01/21 08:30
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 04:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	500	380	UD	380	1200
106-46-7	1,4-Dichlorobenzene	500	380	UD	380	1200
95-50-1	1,2-Dichlorobenzene	500	360	UD	360	1200
96-12-8	1,2-Dibromo-3-chloropropane	500	480	UD	480	1200
1330-20-7	Xylenes (Total)	500	650	UD	650	2500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	99	53 - 146	
Toluene-d8	50.0	47	95	41 - 146	
4-Bromofluorobenzene	50.0	55	110	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1227487	9.862	1217120	9.845	
1,4-Difluorobenzene	2389558	10.456	2353990	10.438	
Chlorobenzene-d5	1365719	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1344390	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-24RE1
File ID: 215B5016.D
Sampled: 02/01/21 08:30
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 15:21
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
79-01-6	Trichloroethene	2000	50000	D	1800	5000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	101	53 - 146	
Toluene-d8	50.0	46	92	41 - 146	
4-Bromofluorobenzene	50.0	56	112	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1249348	9.868	1217120	9.845	
1,4-Difluorobenzene	2503361	10.462	2353990	10.438	
Chlorobenzene-d5	1382530	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1385695	15.503	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210201

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-25 File ID: 215B4044.D

Sampled: 02/01/21 09:15 Prepared: 02/04/21 13:17 Analyzed: 02/05/21 04:52

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B04041 Sequence: AA64821 Calibration: 2011113 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1000	740	UD	740	2500
74-87-3	Chloromethane	1000	820	UD	820	2500
75-01-4	Vinyl chloride	1000	710	UD	710	2500
74-83-9	Bromomethane	1000	950	UD	950	2500
75-00-3	Chloroethane	1000	980	UD	980	2500
75-69-4	Trichlorofluoromethane	1000	940	UD	940	2500
67-64-1	Acetone	1000	10000	UD	10000	25000
75-35-4	1,1-Dichloroethene	1000	940	UD	940	2500
75-15-0	Carbon disulfide	1000	2500	UD	2500	12000
75-09-2	Methylene Chloride	1000	2500	UD	2500	12000
1634-04-4	Methyl-tert-Butyl Ether	1000	600	UD	600	2500
156-60-5	trans-1,2-Dichloroethene	1000	730	UD	730	2500
156-59-2	cis-1,2-Dichloroethene	1000	11000	D	530	2500
75-34-3	1,1-Dichloroethane	1000	620	UD	620	2500
78-93-3	2-Butanone	1000	4500	UD	4500	12000
67-66-3	Chloroform	1000	800	UD	800	2500
71-55-6	1,1,1-Trichloroethane	1000	800	UD	800	2500
79-20-9	Methyl acetate	1000	950	UD	950	2500
110-82-7	Cyclohexane	1000	930	UD	930	2500
56-23-5	Carbon Tetrachloride	1000	940	UD	940	2500
107-06-2	1,2-Dichloroethane	1000	630	UD	630	2500
71-43-2	Benzene	1000	710	UD	710	2500
78-87-5	1,2-Dichloropropane	1000	800	UD	800	2500
75-27-4	Bromodichloromethane	1000	520	UD	520	2500
108-10-1	4-Methyl-2-pentanone	1000	2500	UD	2500	12000
591-78-6	2-Hexanone	1000	2500	UD	2500	12000
10061-01-5	cis-1,3-Dichloropropene	1000	590	UD	590	2500
108-88-3	Toluene	1000	720	UD	720	2500
10061-02-6	trans-1,3-Dichloropropene	1000	730	UD	730	2500
79-00-5	1,1,2-Trichloroethane	1000	760	UD	760	2500
127-18-4	Tetrachloroethene	1000	760	UD	760	2500
124-48-1	Dibromochloromethane	1000	500	UD	500	2500
106-93-4	1,2-Dibromoethane	1000	780	UD	780	2500
108-90-7	Chlorobenzene	1000	720	UD	720	2500
100-41-4	Ethylbenzene	1000	690	UD	690	2500
75-25-2	Bromoform	1000	750	UD	750	2500
100-42-5	Styrene	1000	610	UD	610	2500
98-82-8	Isopropylbenzene	1000	670	UD	670	2500
79-34-5	1,1,2,2-Tetrachloroethane	1000	540	UD	540	2500
120-82-1	1,2,4-Trichlorobenzene	1000	700	UD	700	2500
541-73-1	1,3-Dichlorobenzene	1000	770	UD	770	2500

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-25
File ID: 215B4044.D
Sampled: 02/01/21 09:15
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 04:52
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1000	760	UD	760	2500
95-50-1	1,2-Dichlorobenzene	1000	730	UD	730	2500
96-12-8	1,2-Dibromo-3-chloropropane	1000	960	UD	960	2500
1330-20-7	Xylenes (Total)	1000	1300	UD	1300	5000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	101	53 - 146	
Toluene-d8	50.0	52	105	41 - 146	
4-Bromofluorobenzene	50.0	53	107	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1208423	9.863	1217120	9.845	
1,4-Difluorobenzene	2150543	10.456	2353990	10.438	
Chlorobenzene-d5	1360253	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1338057	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-25RE1
File ID: 215B5017.D
Sampled: 02/01/21 09:15
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 15:50
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
76-13-1	Freon 113	10000	110000	D	7300	25000
79-01-6	Trichloroethene	10000	460000	D	8900	25000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	46	93	41 - 146	
4-Bromofluorobenzene	50.0	53	107	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1214526	9.868	1217120	9.845	
1,4-Difluorobenzene	2471006	10.462	2353990	10.438	
Chlorobenzene-d5	1419603	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1405346	15.503	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0016-010.0-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-26RE1
File ID: 212B5016.D
Sampled: 02/01/21 09:45
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 15:20
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	8.7		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	6.0		0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	71		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0016-010.0-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-26RE1
File ID: 212B5016.D
Sampled: 02/01/21 09:45
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 15:20
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	49	97	41 - 146	
4-Bromofluorobenzene	50.0	47	94	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	231489	11.49	270209	11.46	
1,4-Difluorobenzene	430295	12.04	483052	12.01	
Chlorobenzene-d5	218296	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	145622	17	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0045-030.0-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-27RE1
File ID: 212B5017.D
Sampled: 02/01/21 10:30
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 15:49
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	5.9		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.94	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	6.3		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	8.1		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0045-030.0-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-27RE1
File ID: 212B5017.D
Sampled: 02/01/21 10:30
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 15:49
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	49	99	41 - 146	
4-Bromofluorobenzene	50.0	48	95	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	233916	11.49	270209	11.46	
1,4-Difluorobenzene	432158	12.04	483052	12.01	
Chlorobenzene-d5	217606	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	142716	17.01	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-28
File ID: 215B4047.D
Sampled: 02/01/21 11:10
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 06:21
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
76-13-1	Freon 113	50	1100	D	36	120

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	46	93	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1196717	9.862	1217120	9.845	
1,4-Difluorobenzene	2475605	10.456	2353990	10.438	
Chlorobenzene-d5	1386352	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1358758	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210201

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE00180-28RE1 File ID: 212B5012.D

Sampled: 02/01/21 11:10 Prepared: 02/05/21 00:00 Analyzed: 02/05/21 13:25

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1B05008 Sequence: AA64833 Calibration: 2102033 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	10	7.4	UD	7.4	25
74-87-3	Chloromethane	10	8.2	UD	8.2	25
75-01-4	Vinyl chloride	10	7.1	UD	7.1	25
74-83-9	Bromomethane	10	9.5	UD	9.5	25
75-00-3	Chloroethane	10	9.8	UD	9.8	25
75-69-4	Trichlorofluoromethane	10	9.4	UD	9.4	25
67-64-1	Acetone	10	100	UD	100	250
75-35-4	1,1-Dichloroethene	10	9.4	UD	9.4	25
75-15-0	Carbon disulfide	10	25	UD	25	120
75-09-2	Methylene Chloride	10	25	UD	25	120
1634-04-4	Methyl-tert-Butyl Ether	10	6.0	UD	6.0	25
156-60-5	trans-1,2-Dichloroethene	10	7.3	UD	7.3	25
156-59-2	cis-1,2-Dichloroethene	10	140	D	5.3	25
75-34-3	1,1-Dichloroethane	10	6.2	UD	6.2	25
78-93-3	2-Butanone	10	45	UD	45	120
67-66-3	Chloroform	10	8.0	UD	8.0	25
71-55-6	1,1,1-Trichloroethane	10	8.0	UD	8.0	25
79-20-9	Methyl acetate	10	9.5	UD	9.5	25
110-82-7	Cyclohexane	10	9.3	UD	9.3	25
56-23-5	Carbon Tetrachloride	10	9.4	UD	9.4	25
107-06-2	1,2-Dichloroethane	10	6.3	UD	6.3	25
71-43-2	Benzene	10	7.1	UD	7.1	25
79-01-6	Trichloroethene	10	690	D	8.9	25
78-87-5	1,2-Dichloropropane	10	8.0	UD	8.0	25
75-27-4	Bromodichloromethane	10	5.2	UD	5.2	25
108-10-1	4-Methyl-2-pentanone	10	25	UD	25	120
591-78-6	2-Hexanone	10	25	UD	25	120
10061-01-5	cis-1,3-Dichloropropene	10	5.9	UD	5.9	25
108-88-3	Toluene	10	7.2	UD	7.2	25
10061-02-6	trans-1,3-Dichloropropene	10	7.3	UD	7.3	25
79-00-5	1,1,2-Trichloroethane	10	7.6	UD	7.6	25
127-18-4	Tetrachloroethene	10	7.6	UD	7.6	25
124-48-1	Dibromochloromethane	10	5.0	UD	5.0	25
106-93-4	1,2-Dibromoethane	10	7.8	UD	7.8	25
108-90-7	Chlorobenzene	10	7.2	UD	7.2	25
100-41-4	Ethylbenzene	10	6.9	UD	6.9	25
75-25-2	Bromoform	10	7.5	UD	7.5	25
100-42-5	Styrene	10	6.1	UD	6.1	25
98-82-8	Isopropylbenzene	10	6.7	UD	6.7	25
79-34-5	1,1,2,2-Tetrachloroethane	10	5.4	UD	5.4	25
120-82-1	1,2,4-Trichlorobenzene	10	7.0	UD	7.0	25

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-28RE1
File ID: 212B5012.D
Sampled: 02/01/21 11:10
Prepared: 02/05/21 00:00
Analyzed: 02/05/21 13:25
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05008
Sequence: AA64833
Calibration: 2102033
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	10	7.7	UD	7.7	25
106-46-7	1,4-Dichlorobenzene	10	7.6	UD	7.6	25
95-50-1	1,2-Dichlorobenzene	10	7.3	UD	7.3	25
96-12-8	1,2-Dibromo-3-chloropropane	10	9.6	UD	9.6	25
1330-20-7	Xylenes (Total)	10	13	UD	13	50

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	105	53 - 146	
Toluene-d8	50.0	50	99	41 - 146	
4-Bromofluorobenzene	50.0	48	96	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	227959	11.49	270209	11.46	
1,4-Difluorobenzene	417811	12.04	483052	12.01	
Chlorobenzene-d5	211871	14.63	235561	14.61	
1,4-Dichlorobenzene-d4	139704	17	156580	16.98	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-DRUM222803-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-29
File ID: 215B4048.D
Sampled: 02/01/21 12:00
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 06:51
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	50	37	UD	37	120
74-87-3	Chloromethane	50	41	UD	41	120
74-83-9	Bromomethane	50	48	UD	48	120
75-00-3	Chloroethane	50	49	UD	49	120
75-69-4	Trichlorofluoromethane	50	47	UD	47	120
76-13-1	Freon 113	50	970	D	36	120
67-64-1	Acetone	50	500	UD	500	1200
75-35-4	1,1-Dichloroethene	50	47	UD	47	120
75-15-0	Carbon disulfide	50	120	UD	120	620
75-09-2	Methylene Chloride	50	120	UD	120	620
1634-04-4	Methyl-tert-Butyl Ether	50	30	UD	30	120
156-60-5	trans-1,2-Dichloroethene	50	36	UD	36	120
156-59-2	cis-1,2-Dichloroethene	50	860	D	26	120
75-34-3	1,1-Dichloroethane	50	31	UD	31	120
78-93-3	2-Butanone	50	220	UD	220	620
67-66-3	Chloroform	50	40	UD	40	120
71-55-6	1,1,1-Trichloroethane	50	40	UD	40	120
79-20-9	Methyl acetate	50	48	UD	48	120
110-82-7	Cyclohexane	50	46	UD	46	120
56-23-5	Carbon Tetrachloride	50	47	UD	47	120
107-06-2	1,2-Dichloroethane	50	32	UD	32	120
71-43-2	Benzene	50	36	UD	36	120
79-01-6	Trichloroethene	50	4900	D	44	120
78-87-5	1,2-Dichloropropane	50	40	UD	40	120
75-27-4	Bromodichloromethane	50	26	UD	26	120
108-10-1	4-Methyl-2-pentanone	50	120	UD	120	620
591-78-6	2-Hexanone	50	120	UD	120	620
10061-01-5	cis-1,3-Dichloropropene	50	30	UD	30	120
108-88-3	Toluene	50	36	UD	36	120
10061-02-6	trans-1,3-Dichloropropene	50	36	UD	36	120
79-00-5	1,1,2-Trichloroethane	50	38	UD	38	120
127-18-4	Tetrachloroethene	50	38	UD	38	120
124-48-1	Dibromochloromethane	50	25	UD	25	120
106-93-4	1,2-Dibromoethane	50	39	UD	39	120
108-90-7	Chlorobenzene	50	36	UD	36	120
100-41-4	Ethylbenzene	50	34	UD	34	120
75-25-2	Bromoform	50	38	UD	38	120
100-42-5	Styrene	50	30	UD	30	120
98-82-8	Isopropylbenzene	50	34	UD	34	120
79-34-5	1,1,2,2-Tetrachloroethane	50	27	UD	27	120
120-82-1	1,2,4-Trichlorobenzene	50	35	UD	35	120

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-DRUM222803-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-29
File ID: 215B4048.D
Sampled: 02/01/21 12:00
Prepared: 02/04/21 13:17
Analyzed: 02/05/21 06:51
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B04041
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	50	38	UD	38	120
106-46-7	1,4-Dichlorobenzene	50	38	UD	38	120
95-50-1	1,2-Dichlorobenzene	50	36	UD	36	120
96-12-8	1,2-Dibromo-3-chloropropane	50	48	UD	48	120
1330-20-7	Xylenes (Total)	50	65	UD	65	250

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	48	95	41 - 146	
4-Bromofluorobenzene	50.0	53	105	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1189515	9.863	1217120	9.845	
1,4-Difluorobenzene	2390582	10.456	2353990	10.438	
Chlorobenzene-d5	1377443	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1377681	15.497	1366836	15.474	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-DRUM222803-20210201

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE00180-29RE1
File ID: 215B5018.D
Sampled: 02/01/21 12:00
Prepared: 02/05/21 11:42
Analyzed: 02/05/21 16:20
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1B05029
Sequence: AA64837
Calibration: 2011113
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	50	36	UD	36	120

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	46	91	41 - 146	
4-Bromofluorobenzene	50.0	54	109	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1261032	9.868	1217120	9.845	
1,4-Difluorobenzene	2472129	10.462	2353990	10.438	
Chlorobenzene-d5	1411018	13.241	1612072	13.217	
1,4-Dichlorobenzene-d4	1398266	15.503	1366836	15.474	

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-MW0043-035.0-20210128	01/28/21 15:20	02/01/21 13:25	02/04/21 08:53	6.73	NA	02/04/21 10:36	7.00	14.00	
HMPN-MW0044-045.0-20210128	01/28/21 16:05	02/01/21 13:25	02/04/21 08:53	6.70	NA	02/04/21 11:06	7.00	14.00	
HMPN-MW0041-035.0-20210128	01/28/21 16:45	02/01/21 13:25	02/04/21 08:53	6.67	NA	02/04/21 11:35	7.00	14.00	
HMPN-MW0041-035.0-20210128	01/28/21 16:45	02/01/21 13:25	02/05/21 00:00	7.30	NA	02/05/21 13:54	8.00	14.00	
HMPN-MW0042-042.5-20210128	01/28/21 17:35	02/01/21 13:25	02/04/21 08:53	6.64	NA	02/04/21 12:05	7.00	14.00	
HMPN-MW0037-010.0-20210129	01/29/21 09:20	02/01/21 13:25	02/04/21 08:53	5.98	NA	02/04/21 12:34	6.00	14.00	
HMPN-MW0037-010.0-20210129	01/29/21 09:20	02/01/21 13:25	02/05/21 00:00	6.61	NA	02/05/21 14:23	7.00	14.00	
HMPN-MW0038-020.0-20210129	01/29/21 09:55	02/01/21 13:25	02/04/21 08:53	5.96	NA	02/04/21 13:04	6.00	14.00	
HMPN-MW0038-020.0-20210129	01/29/21 09:55	02/01/21 13:25	02/05/21 00:00	6.59	NA	02/05/21 14:51	7.00	14.00	
HMPN-MW0046-015.0-20210129	01/29/21 10:30	02/01/21 13:25	02/04/21 08:53	5.93	NA	02/04/21 13:33	6.00	14.00	
HMPN-MW0047-025.0-20210129	01/29/21 11:00	02/01/21 13:25	02/04/21 08:53	5.91	NA	02/04/21 14:03	6.00	14.00	
HMPN-MW0036-015.0-20210129	01/29/21 11:30	02/01/21 13:25	02/04/21 08:53	5.89	NA	02/04/21 14:33	6.00	14.00	
HMPN-MW0011-025.0-20210129	01/29/21 12:05	02/01/21 13:25	02/04/21 08:53	5.87	NA	02/04/21 15:02	6.00	14.00	
HMPN-MW0029-015.0-20210129	01/29/21 12:30	02/01/21 13:25	02/04/21 08:53	5.85	NA	02/04/21 15:32	6.00	14.00	
HMPN-MW0030-025.0-20210129	01/29/21 13:00	02/01/21 13:25	02/04/21 08:53	5.83	NA	02/04/21 16:01	6.00	14.00	
HMPN-MW0031-035.0-20210129	01/29/21 13:30	02/01/21 13:25	02/04/21 08:53	5.81	NA	02/04/21 16:31	6.00	14.00	
HMPN-MW0032-042.5-20210129	01/29/21 14:00	02/01/21 13:25	02/04/21 08:53	5.79	NA	02/04/21 17:00	6.00	14.00	
HMPN-MW0033-047.5-20210129	01/29/21 14:35	02/01/21 13:25	02/05/21 00:00	6.39	NA	02/05/21 12:56	7.00	14.00	
HMPN-MW0008-025.0-20210129	01/29/21 15:15	02/01/21 13:25	02/04/21 08:53	5.73	NA	02/04/21 17:59	6.00	14.00	
HMPN-MW0024-060.0-20210129	01/29/21 15:45	02/01/21 13:25	02/04/21 13:17	5.90	NA	02/05/21 00:55	6.00	14.00	
HMPN-MW0035-035.0-20210129	01/29/21 16:40	02/01/21 13:25	02/04/21 13:17	5.86	NA	02/05/21 01:25	6.00	14.00	
HMPN-MW0035-035.0-20210129	01/29/21 16:40	02/01/21 13:25	02/05/21 11:42	6.79	NA	02/05/21 12:23	7.00	14.00	
HMPN-MW0035-035.0-20210129	01/29/21 16:40	02/01/21 13:25	02/05/21 11:42	6.79	NA	02/05/21 13:22	7.00	14.00	

HOLDING TIME SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-MW0034-015.0-20210129	01/29/21 17:30	02/01/21 13:25	02/04/21 13:17	5.82	NA	02/05/21 01:54	6.00	14.00	
HMPN-MW0034-015.0-20210129	01/29/21 17:30	02/01/21 13:25	02/05/21 11:42	6.76	NA	02/05/21 12:53	7.00	14.00	
HMPN-MW0039-035.0-20210131	01/31/21 14:40	02/01/21 13:25	02/04/21 13:17	3.94	NA	02/05/21 02:24	4.00	14.00	
HMPN-MW0039-035.0-20210131	01/31/21 14:40	02/01/21 13:25	02/05/21 11:42	4.88	NA	02/05/21 13:52	5.00	14.00	
HMPN-MW0040-042.5-20210131	01/31/21 15:30	02/01/21 13:25	02/04/21 13:17	3.91	NA	02/05/21 02:54	4.00	14.00	
HMPN-MW0040-042.5-20210131	01/31/21 15:30	02/01/21 13:25	02/05/21 11:42	4.84	NA	02/05/21 14:21	5.00	14.00	
HMPN-MW0009-010.0-20210131	01/31/21 16:10	02/01/21 13:25	02/04/21 13:17	3.88	NA	02/05/21 03:23	4.00	14.00	
HMPN-MW0009-010.0-20210131	01/31/21 16:10	02/01/21 13:25	02/05/21 11:42	4.81	NA	02/05/21 14:51	5.00	14.00	
HMPN-MW0004-010.0-20210131	01/31/21 17:00	02/01/21 13:25	02/04/21 13:17	3.85	NA	02/05/21 03:53	4.00	14.00	
HMPN-MW0027-042.5-20210201	02/01/21 08:30	02/01/21 13:25	02/04/21 13:17	3.20	NA	02/05/21 04:23	4.00	14.00	
HMPN-MW0027-042.5-20210201	02/01/21 08:30	02/01/21 13:25	02/05/21 11:42	4.13	NA	02/05/21 15:21	4.00	14.00	
HMPN-MW0028-047.5-20210201	02/01/21 09:15	02/01/21 13:25	02/04/21 13:17	3.17	NA	02/05/21 04:52	4.00	14.00	
HMPN-MW0028-047.5-20210201	02/01/21 09:15	02/01/21 13:25	02/05/21 11:42	4.10	NA	02/05/21 15:50	4.00	14.00	
HMPN-MW0016-010.0-20210201	02/01/21 09:45	02/01/21 13:25	02/05/21 00:00	3.59	NA	02/05/21 15:20	4.00	14.00	
HMPN-MW0045-030.0-20210201	02/01/21 10:30	02/01/21 13:25	02/05/21 00:00	3.56	NA	02/05/21 15:49	4.00	14.00	
HMPN-MW0002-035.0-20210201	02/01/21 11:10	02/01/21 13:25	02/04/21 13:17	3.09	NA	02/05/21 06:21	4.00	14.00	
HMPN-MW0002-035.0-20210201	02/01/21 11:10	02/01/21 13:25	02/05/21 00:00	3.53	NA	02/05/21 13:25	4.00	14.00	
HMPN-DRUM222803-20210201	02/01/21 12:00	02/01/21 13:25	02/04/21 13:17	3.05	NA	02/05/21 06:51	4.00	14.00	
HMPN-DRUM222803-20210201	02/01/21 12:00	02/01/21 13:25	02/05/21 11:42	3.99	NA	02/05/21 16:20	4.00	14.00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1B04020 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1B04020-BLK1	215B4005.D	02/04/21 00:00	
LCS	1B04020-BS1	215B4003.D	02/04/21 00:00	
HMPN-MW0043-035.0-20210128	1B04020-MS1	215B4023.D	02/04/21 00:00	
HMPN-MW0043-035.0-20210128	1B04020-MSD1	215B4024.D	02/04/21 00:00	
HMPN-MW0043-035.0-20210128	AE00180-01	215B4007.D	02/04/21 08:53	
HMPN-MW0044-045.0-20210128	AE00180-02	215B4008.D	02/04/21 08:53	
HMPN-MW0041-035.0-20210128	AE00180-03	215B4009.D	02/04/21 08:53	
HMPN-MW0042-042.5-20210128	AE00180-04	215B4010.D	02/04/21 08:53	
HMPN-MW0037-010.0-20210129	AE00180-05	215B4011.D	02/04/21 08:53	
HMPN-MW0038-020.0-20210129	AE00180-06	215B4012.D	02/04/21 08:53	
HMPN-MW0046-015.0-20210129	AE00180-07	215B4013.D	02/04/21 08:53	
HMPN-MW0047-025.0-20210129	AE00180-08	215B4014.D	02/04/21 08:53	
HMPN-MW0036-015.0-20210129	AE00180-09	215B4015.D	02/04/21 08:53	
HMPN-MW0011-025.0-20210129	AE00180-10	215B4016.D	02/04/21 08:53	
HMPN-MW0029-015.0-20210129	AE00180-11	215B4017.D	02/04/21 08:53	
HMPN-MW0030-025.0-20210129	AE00180-12	215B4018.D	02/04/21 08:53	
HMPN-MW0031-035.0-20210129	AE00180-13	215B4019.D	02/04/21 08:53	
HMPN-MW0032-042.5-20210129	AE00180-14	215B4020.D	02/04/21 08:53	
HMPN-MW0008-025.0-20210129	AE00180-16	215B4022.D	02/04/21 08:53	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1B04041 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1B04041-BLK1	215B4031.D	02/04/21 13:17	
LCS	1B04041-BS1	215B4027.D	02/04/21 13:17	
DGRS Influent	1B04041-MS1	215B4032.D	02/04/21 13:17	
DGRS Influent	1B04041-MSD1	215B5004.D	02/04/21 13:17	
HMPN-MW0024-060.0-20210129	AE00180-17	215B4036.D	02/04/21 13:17	
HMPN-MW0035-035.0-20210129	AE00180-18	215B4037.D	02/04/21 13:17	
HMPN-MW0034-015.0-20210129	AE00180-19	215B4038.D	02/04/21 13:17	
HMPN-MW0039-035.0-20210131	AE00180-20	215B4039.D	02/04/21 13:17	
HMPN-MW0040-042.5-20210131	AE00180-21	215B4040.D	02/04/21 13:17	
HMPN-MW0009-010.0-20210131	AE00180-22	215B4041.D	02/04/21 13:17	
HMPN-MW0004-010.0-20210131	AE00180-23	215B4042.D	02/04/21 13:17	
HMPN-MW0027-042.5-20210201	AE00180-24	215B4043.D	02/04/21 13:17	
HMPN-MW0028-047.5-20210201	AE00180-25	215B4044.D	02/04/21 13:17	
HMPN-MW0002-035.0-20210201	AE00180-28	215B4047.D	02/04/21 13:17	
HMPN-DRUM222803-20210201	AE00180-29	215B4048.D	02/04/21 13:17	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1B05008 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1B05008-BLK1	212B5009.D	02/05/21 00:00	
LCS	1B05008-BS1	212B5003.D	02/05/21 00:00	
MW-35	1B05008-MS1	212B5004.D	02/05/21 00:00	
MW-35	1B05008-MSD1	212B5005.D	02/05/21 00:00	
HMPN-MW0041-035.0-20210128	AE00180-03RE1	212B5013.D	02/05/21 00:00	
HMPN-MW0037-010.0-20210129	AE00180-05RE1	212B5014.D	02/05/21 00:00	
HMPN-MW0038-020.0-20210129	AE00180-06RE1	212B5015.D	02/05/21 00:00	
HMPN-MW0033-047.5-20210129	AE00180-15RE1	212B5011.D	02/05/21 00:00	
HMPN-MW0016-010.0-20210201	AE00180-26RE1	212B5016.D	02/05/21 00:00	
HMPN-MW0045-030.0-20210201	AE00180-27RE1	212B5017.D	02/05/21 00:00	
HMPN-MW0002-035.0-20210201	AE00180-28RE1	212B5012.D	02/05/21 00:00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1B05029 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1B05029-BLK1	215B5008.D	02/05/21 00:00	
LCS	1B05029-BS1	215B5005.D	02/05/21 00:00	
LCS Dup	1B05029-BSD1	215B5006.D	02/05/21 00:00	
HMPN-MW0035-035.0-20210129	AE00180-18RE1	215B5010.D	02/05/21 11:42	
HMPN-MW0035-035.0-20210129	AE00180-18RE2	215B5012.D	02/05/21 11:42	
HMPN-MW0034-015.0-20210129	AE00180-19RE1	215B5011.D	02/05/21 11:42	
HMPN-MW0039-035.0-20210131	AE00180-20RE1	215B5013.D	02/05/21 11:42	
HMPN-MW0040-042.5-20210131	AE00180-21RE1	215B5014.D	02/05/21 11:42	
HMPN-MW0009-010.0-20210131	AE00180-22RE1	215B5015.D	02/05/21 11:42	
HMPN-MW0027-042.5-20210201	AE00180-24RE1	215B5016.D	02/05/21 11:42	
HMPN-MW0028-047.5-20210201	AE00180-25RE1	215B5017.D	02/05/21 11:42	
HMPN-DRUM222803-20210201	AE00180-29RE1	215B5018.D	02/05/21 11:42	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B04020-BLK1	File ID:	215B4005.D
Prepared:	02/04/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/04/21 09:37	Instrument:	OVGCMS5		
Batch:	1B04020	Sequence:	AA64811	Calibration:	2011113

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B04020-BLK1	File ID:	215B4005.D
Prepared:	02/04/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/04/21 09:37	Instrument:	OVGCMS5		
Batch:	1B04020	Sequence:	AA64811	Calibration:	2011113

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	47	94	41 - 146	
4-Bromofluorobenzene	50.0	55	110	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1201664	9.857	1217120	9.845	
1,4-Difluorobenzene	2516659	10.45	2353990	10.438	
Chlorobenzene-d5	1454473	13.229	1612072	13.217	
1,4-Dichlorobenzene-d4	1382524	15.485	1366836	15.474	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B04041-BLK1	File ID:	215B4031.D
Prepared:	02/04/21 13:17	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/04/21 22:26	Instrument:	OVGCMS5		
Batch:	1B04041	Sequence:	AA64821	Calibration:	2011113

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B04041-BLK1	File ID:	215B4031.D
Prepared:	02/04/21 13:17	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/04/21 22:26	Instrument:	OVGCMS5		
Batch:	1B04041	Sequence:	AA64821	Calibration:	2011113

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	47	93	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1199534	9.857	1217120	9.845	
1,4-Difluorobenzene	2453816	10.456	2353990	10.438	
Chlorobenzene-d5	1404372	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1342519	15.491	1366836	15.474	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B05008-BLK1	File ID:	212B5009.D
Prepared:	02/05/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/05/21 11:59	Instrument:	OVGCMS2		
Batch:	1B05008	Sequence:	AA64833	Calibration:	2102033

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B05008-BLK1	File ID:	212B5009.D
Prepared:	02/05/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/05/21 11:59	Instrument:	OVGCMS2		
Batch:	1B05008	Sequence:	AA64833	Calibration:	2102033

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	105	53 - 146	
Toluene-d8	50.0	49	98	41 - 146	
4-Bromofluorobenzene	50.0	48	95	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	234982	11.48	270209	11.46	
1,4-Difluorobenzene	429848	12.03	483052	12.01	
Chlorobenzene-d5	218184	14.62	235561	14.61	
1,4-Dichlorobenzene-d4	144694	17	156580	16.98	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B05029-BLK1	File ID:	215B5008.D
Prepared:	02/05/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/05/21 11:24	Instrument:	OVGCMS5		
Batch:	1B05029	Sequence:	AA64837	Calibration:	2011113

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1B05029-BLK1	File ID:	215B5008.D
Prepared:	02/05/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	02/05/21 11:24	Instrument:	OVGCMS5		
Batch:	1B05029	Sequence:	AA64837	Calibration:	2011113

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	48	96	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1327701	9.863	1217120	9.845	
1,4-Difluorobenzene	2812736	10.456	2353990	10.438	
Chlorobenzene-d5	1652339	13.235	1612072	13.217	
1,4-Dichlorobenzene-d4	1515326	15.497	1366836	15.474	

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B04020	Laboratory ID:	1B04020-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	82	10 - 180
Chloromethane	20.0	11	57	33 - 154
Vinyl chloride	20.0	18	90	20 - 167
Bromomethane	20.0	8.4	42	10 - 173
Chloroethane	20.0	21	104	27 - 180
Trichlorofluoromethane	20.0	20	102	56 - 155
Freon 113	20.0	20	101	47 - 173
Acetone	100	70	70	10 - 180
1,1-Dichloroethene	20.0	19	96	47 - 139
Carbon disulfide	20.0	19	96	43 - 153
Methylene Chloride	20.0	22	108	43 - 142
Methyl-tert-Butyl Ether	20.0	19	96	51 - 145
trans-1,2-Dichloroethene	20.0	19	97	54 - 134
cis-1,2-Dichloroethene	20.0	20	101	56 - 128
1,1-Dichloroethane	20.0	17	86	57 - 142
2-Butanone	100	85	85	10 - 180
Chloroform	20.0	18	91	58 - 139
1,1,1-Trichloroethane	20.0	20	100	57 - 148
Methyl acetate	20.0	13	66 *	70 - 130
Cyclohexane	20.0	15	74	70 - 130
Carbon Tetrachloride	20.0	19	96	54 - 156
1,2-Dichloroethane	20.0	16	79	50 - 156
Benzene	20.0	18	91	56 - 136
Trichloroethene	20.0	20	99	62 - 135
1,2-Dichloropropane	20.0	15	75	61 - 133
Bromodichloromethane	20.0	18	88	58 - 135
4-Methyl-2-pentanone	100	91	91	19 - 180
2-Hexanone	100	66	66	12 - 180
cis-1,3-Dichloropropene	20.0	16	82	64 - 128
Toluene	20.0	23	113	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B04020	Laboratory ID:	1B04020-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	17	86	65 - 149
1,1,2-Trichloroethane	20.0	20	102	57 - 141
Tetrachloroethene	20.0	19	95	60 - 147
Dibromochloromethane	20.0	22	111	50 - 140
1,2-Dibromoethane	20.0	21	106	57 - 140
Chlorobenzene	20.0	23	114	51 - 139
Ethylbenzene	20.0	21	103	63 - 133
m,p-Xylenes	40.0	48	119	64 - 133
o-Xylene	20.0	22	111	61 - 129
Bromoform	20.0	19	96	46 - 148
Styrene	20.0	23	115	59 - 136
Isopropylbenzene	20.0	23	113	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	105	60 - 139
1,2,4-Trichlorobenzene	20.0	16	81	52 - 159
1,3-Dichlorobenzene	20.0	22	109	66 - 129
1,4-Dichlorobenzene	20.0	20	102	65 - 133
1,2-Dichlorobenzene	20.0	21	106	63 - 131
1,2-Dibromo-3-chloropropane	20.0	19	97	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B04041	Laboratory ID:	1B04041-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	82	10 - 180
Chloromethane	20.0	12	60	33 - 154
Vinyl chloride	20.0	18	92	20 - 167
Bromomethane	20.0	11	57	10 - 173
Chloroethane	20.0	22	111	27 - 180
Trichlorofluoromethane	20.0	20	98	56 - 155
Freon 113	20.0	20	102	47 - 173
Acetone	100	67	67	10 - 180
1,1-Dichloroethene	20.0	20	100	47 - 139
Carbon disulfide	20.0	18	92	43 - 153
Methylene Chloride	20.0	19	95	43 - 142
Methyl-tert-Butyl Ether	20.0	18	92	51 - 145
trans-1,2-Dichloroethene	20.0	20	99	54 - 134
cis-1,2-Dichloroethene	20.0	21	106	56 - 128
1,1-Dichloroethane	20.0	17	86	57 - 142
2-Butanone	100	82	82	10 - 180
Chloroform	20.0	20	98	58 - 139
1,1,1-Trichloroethane	20.0	20	98	57 - 148
Methyl acetate	20.0	8.9	44 *	70 - 130
Cyclohexane	20.0	15	73	70 - 130
Carbon Tetrachloride	20.0	16	79	54 - 156
1,2-Dichloroethane	20.0	15	74	50 - 156
Benzene	20.0	19	94	56 - 136
Trichloroethene	20.0	21	103	62 - 135
1,2-Dichloropropane	20.0	14	72	61 - 133
Bromodichloromethane	20.0	18	88	58 - 135
4-Methyl-2-pentanone	100	81	81	19 - 180
2-Hexanone	100	64	64	12 - 180
cis-1,3-Dichloropropene	20.0	16	80	64 - 128
Toluene	20.0	22	112	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B04041	Laboratory ID:	1B04041-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	19	93	65 - 149
1,1,2-Trichloroethane	20.0	20	99	57 - 141
Tetrachloroethene	20.0	19	97	60 - 147
Dibromochloromethane	20.0	23	115	50 - 140
1,2-Dibromoethane	20.0	22	109	57 - 140
Chlorobenzene	20.0	24	121	51 - 139
Ethylbenzene	20.0	22	110	63 - 133
m,p-Xylenes	40.0	50	124	64 - 133
o-Xylene	20.0	24	120	61 - 129
Bromoform	20.0	19	97	46 - 148
Styrene	20.0	24	122	59 - 136
Isopropylbenzene	20.0	24	118	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	102	60 - 139
1,2,4-Trichlorobenzene	20.0	15	76	52 - 159
1,3-Dichlorobenzene	20.0	22	109	66 - 129
1,4-Dichlorobenzene	20.0	21	106	65 - 133
1,2-Dichlorobenzene	20.0	21	106	63 - 131
1,2-Dibromo-3-chloropropane	20.0	18	88	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B05008	Laboratory ID:	1B05008-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	17	87	10 - 180
Chloromethane	20.0	19	97	33 - 154
Vinyl chloride	20.0	21	107	20 - 167
Bromomethane	20.0	19	97	10 - 173
Chloroethane	20.0	25	125	27 - 180
Trichlorofluoromethane	20.0	23	114	56 - 155
Freon 113	20.0	25	124	47 - 173
Acetone	100	130	127	10 - 180
1,1-Dichloroethene	20.0	22	111	47 - 139
Carbon disulfide	20.0	25	126	43 - 153
Methylene Chloride	20.0	23	115	43 - 142
Methyl-tert-Butyl Ether	20.0	23	114	51 - 145
trans-1,2-Dichloroethene	20.0	23	114	54 - 134
cis-1,2-Dichloroethene	20.0	22	112	56 - 128
1,1-Dichloroethane	20.0	24	120	57 - 142
2-Butanone	100	160	160	10 - 180
Chloroform	20.0	23	114	58 - 139
1,1,1-Trichloroethane	20.0	23	116	57 - 148
Methyl acetate	20.0	23	113	70 - 130
Cyclohexane	20.0	26	130	70 - 130
Carbon Tetrachloride	20.0	23	113	54 - 156
1,2-Dichloroethane	20.0	21	106	50 - 156
Benzene	20.0	23	114	56 - 136
Trichloroethene	20.0	22	111	62 - 135
1,2-Dichloropropane	20.0	22	108	61 - 133
Bromodichloromethane	20.0	21	104	58 - 135
4-Methyl-2-pentanone	100	110	108	19 - 180
2-Hexanone	100	110	105	12 - 180
cis-1,3-Dichloropropene	20.0	20	99	64 - 128
Toluene	20.0	21	104	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B05008	Laboratory ID:	1B05008-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	21	103	65 - 149
1,1,2-Trichloroethane	20.0	20	101	57 - 141
Tetrachloroethene	20.0	21	107	60 - 147
Dibromochloromethane	20.0	20	101	50 - 140
1,2-Dibromoethane	20.0	21	105	57 - 140
Chlorobenzene	20.0	20	101	51 - 139
Ethylbenzene	20.0	20	98	63 - 133
m,p-Xylenes	40.0	39	97	64 - 133
o-Xylene	20.0	19	96	61 - 129
Bromoform	20.0	20	100	46 - 148
Styrene	20.0	20	102	59 - 136
Isopropylbenzene	20.0	19	97	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	100	60 - 139
1,2,4-Trichlorobenzene	20.0	22	109	52 - 159
1,3-Dichlorobenzene	20.0	20	98	66 - 129
1,4-Dichlorobenzene	20.0	19	96	65 - 133
1,2-Dichlorobenzene	20.0	20	100	63 - 131
1,2-Dibromo-3-chloropropane	20.0	20	102	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B05029	Laboratory ID:	1B05029-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	79	10 - 180
Chloromethane	20.0	11	57	33 - 154
Vinyl chloride	20.0	18	91	20 - 167
Bromomethane	20.0	16	78	10 - 173
Chloroethane	20.0	23	117	27 - 180
Trichlorofluoromethane	20.0	19	95	56 - 155
Freon 113	20.0	20	102	47 - 173
Acetone	100	74	74	10 - 180
1,1-Dichloroethene	20.0	21	103	47 - 139
Carbon disulfide	20.0	19	97	43 - 153
Methylene Chloride	20.0	20	98	43 - 142
Methyl-tert-Butyl Ether	20.0	20	102	51 - 145
trans-1,2-Dichloroethene	20.0	20	101	54 - 134
cis-1,2-Dichloroethene	20.0	22	109	56 - 128
1,1-Dichloroethane	20.0	18	92	57 - 142
2-Butanone	100	87	87	10 - 180
Chloroform	20.0	19	96	58 - 139
1,1,1-Trichloroethane	20.0	20	100	57 - 148
Methyl acetate	20.0	13	67 *	70 - 130
Cyclohexane	20.0	16	80	70 - 130
Carbon Tetrachloride	20.0	16	78	54 - 156
1,2-Dichloroethane	20.0	16	80	50 - 156
Benzene	20.0	19	97	56 - 136
Trichloroethene	20.0	22	112	62 - 135
1,2-Dichloropropane	20.0	16	80	61 - 133
Bromodichloromethane	20.0	17	87	58 - 135
4-Methyl-2-pentanone	100	98	98	19 - 180
2-Hexanone	100	69	69	12 - 180
cis-1,3-Dichloropropene	20.0	17	86	64 - 128
Toluene	20.0	22	111	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B05029	Laboratory ID:	1B05029-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	19	96	65 - 149
1,1,2-Trichloroethane	20.0	19	97	57 - 141
Tetrachloroethene	20.0	19	96	60 - 147
Dibromochloromethane	20.0	23	113	50 - 140
1,2-Dibromoethane	20.0	23	115	57 - 140
Chlorobenzene	20.0	23	117	51 - 139
Ethylbenzene	20.0	22	108	63 - 133
m,p-Xylenes	40.0	48	119	64 - 133
o-Xylene	20.0	24	118	61 - 129
Bromoform	20.0	20	99	46 - 148
Styrene	20.0	24	118	59 - 136
Isopropylbenzene	20.0	23	115	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	104	60 - 139
1,2,4-Trichlorobenzene	20.0	15	76	52 - 159
1,3-Dichlorobenzene	20.0	22	109	66 - 129
1,4-Dichlorobenzene	20.0	21	105	65 - 133
1,2-Dichlorobenzene	20.0	21	103	63 - 131
1,2-Dibromo-3-chloropropane	20.0	20	98	48 - 150

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	15	77	3	26	10 - 180
Chloromethane	20.0	12	59	3	31	33 - 154
Vinyl chloride	20.0	18	90	1	24	20 - 167
Bromomethane	20.0	16	82	5	29	10 - 173
Chloroethane	20.0	23	116	1	22	27 - 180
Trichlorofluoromethane	20.0	18	92	3	22	56 - 155
Freon 113	20.0	20	99	3	30	47 - 173
Acetone	100	71	71	4	19	10 - 180
1,1-Dichloroethene	20.0	19	96	7	16	47 - 139

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B05029	Laboratory ID:	1B05029-BSD1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Carbon disulfide	20.0	19	94	4	26	43 - 153
Methylene Chloride	20.0	20	99	1	23	43 - 142
Methyl-tert-Butyl Ether	20.0	19	97	5	22	51 - 145
trans-1,2-Dichloroethene	20.0	19	95	6	20	54 - 134
cis-1,2-Dichloroethene	20.0	21	107	2	17	56 - 128
1,1-Dichloroethane	20.0	17	87	6	24	57 - 142
2-Butanone	100	89	89	2	29	10 - 180
Chloroform	20.0	20	100	4	17	58 - 139
1,1,1-Trichloroethane	20.0	19	94	6	25	57 - 148
Methyl acetate	20.0	14	68 *	1	20	70 - 130
Cyclohexane	20.0	15	76	5	20	70 - 130
Carbon Tetrachloride	20.0	15	76	4	27	54 - 156
1,2-Dichloroethane	20.0	15	74	7	18	50 - 156
Benzene	20.0	18	92	5	14	56 - 136
Trichloroethene	20.0	20	102	9	20	62 - 135
1,2-Dichloropropane	20.0	16	78	3	26	61 - 133
Bromodichloromethane	20.0	17	85	2	19	58 - 135
4-Methyl-2-pentanone	100	87	87	12	24	19 - 180
2-Hexanone	100	70	70	1	28	12 - 180
cis-1,3-Dichloropropene	20.0	16	79	9	20	64 - 128
Toluene	20.0	22	109	1	16	64 - 131
trans-1,3-Dichloropropene	20.0	19	93	3	17	65 - 149
1,1,2-Trichloroethane	20.0	20	101	4	16	57 - 141
Tetrachloroethene	20.0	19	93	2	21	60 - 147
Dibromochloromethane	20.0	21	107	5	18	50 - 140
1,2-Dibromoethane	20.0	21	103	10	16	57 - 140
Chlorobenzene	20.0	23	113	4	13	51 - 139
Ethylbenzene	20.0	20	102	6	18	63 - 133
m,p-Xylenes	40.0	45	113	6	18	64 - 133
o-Xylene	20.0	22	111	7	16	61 - 129

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B05029	Laboratory ID:	1B05029-BSD1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Bromoform	20.0	18	90	9	18	46 - 148
Styrene	20.0	23	114	3	32	59 - 136
Isopropylbenzene	20.0	22	110	4	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	98	6	17	60 - 139
1,2,4-Trichlorobenzene	20.0	14	69	9	24	52 - 159
1,3-Dichlorobenzene	20.0	21	105	4	23	66 - 129
1,4-Dichlorobenzene	20.0	20	102	3	23	65 - 133
1,2-Dichlorobenzene	20.0	21	104	0.9	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	17	87	12	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0043-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04020
Laboratory ID: 1B04020-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: HMPN-MW0043-035.0-20210128

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	20	99	10 - 180
Chloromethane	20.0	ND	10	52	33 - 154
Vinyl chloride	20.0	ND	18	91	20 - 167
Bromomethane	20.0	ND	13	66	10 - 173
Chloroethane	20.0	ND	23	115	27 - 180
Trichlorofluoromethane	20.0	ND	22	109	56 - 155
Freon 113	20.0	1.8	23	107	47 - 173
Acetone	100	ND	69	69	10 - 180
1,1-Dichloroethene	20.0	ND	21	107	47 - 139
Carbon disulfide	20.0	ND	18	92	43 - 153
Methylene Chloride	20.0	ND	19	97	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	19	95	51 - 145
trans-1,2-Dichloroethene	20.0	ND	21	104	54 - 134
cis-1,2-Dichloroethene	20.0	89	100	81	56 - 128
1,1-Dichloroethane	20.0	ND	18	89	57 - 142
2-Butanone	100	ND	84	84	10 - 180
Chloroform	20.0	ND	21	103	58 - 139
1,1,1-Trichloroethane	20.0	ND	21	105	57 - 148
Methyl acetate	20.0	ND	9.7	49 *	70 - 130
Cyclohexane	20.0	ND	15	75	70 - 130
Carbon Tetrachloride	20.0	ND	17	85	54 - 156
1,2-Dichloroethane	20.0	ND	17	83	50 - 156
Benzene	20.0	ND	20	98	56 - 136
Trichloroethene	20.0	25	47	112	62 - 135
1,2-Dichloropropane	20.0	ND	15	75	61 - 133
Bromodichloromethane	20.0	ND	19	97	58 - 135
4-Methyl-2-pentanone	100	ND	100	100	19 - 180
2-Hexanone	100	ND	70	70	12 - 180
cis-1,3-Dichloropropene	20.0	ND	16	79	64 - 128
Toluene	20.0	ND	23	113	64 - 131
trans-1,3-Dichloropropene	20.0	ND	18	92	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0043-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04020
Laboratory ID: 1B04020-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: HMPN-MW0043-035.0-20210128

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	21	104	57 - 141
Tetrachloroethene	20.0	ND	21	107	60 - 147
Dibromochloromethane	20.0	ND	23	117	50 - 140
1,2-Dibromoethane	20.0	ND	23	114	57 - 140
Chlorobenzene	20.0	ND	25	126	51 - 139
Ethylbenzene	20.0	ND	22	112	63 - 133
m,p-Xylenes	40.0	ND	51	128	64 - 133
o-Xylene	20.0	ND	25	125	61 - 129
Bromoform	20.0	ND	22	112	46 - 148
Styrene	20.0	ND	24	122	59 - 136
Isopropylbenzene	20.0	ND	24	122	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	23	113	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	14	71	52 - 159
1,3-Dichlorobenzene	20.0	ND	22	111	66 - 129
1,4-Dichlorobenzene	20.0	ND	21	104	65 - 133
1,2-Dichlorobenzene	20.0	ND	21	107	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	17	83	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0043-035.0-20210128

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04020
Laboratory ID: 1B04020-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: HMPN-MW0043-035.0-20210128

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #		% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	20	99		0.05	26	10 - 180
Chloromethane	20.0	13	63		19	31	33 - 154
Vinyl chloride	20.0	19	94		3	24	20 - 167
Bromomethane	20.0	17	84		25	29	10 - 173
Chloroethane	20.0	22	112		3	22	27 - 180
Trichlorofluoromethane	20.0	21	105		3	22	56 - 155
Freon 113	20.0	22	101		5	30	47 - 173
Acetone	100	70	70		2	19	10 - 180
1,1-Dichloroethene	20.0	20	102		4	16	47 - 139
Carbon disulfide	20.0	19	94		2	26	43 - 153
Methylene Chloride	20.0	19	95		1	23	43 - 142
Methyl-tert-Butyl Ether	20.0	20	98		3	22	51 - 145
trans-1,2-Dichloroethene	20.0	20	101		2	20	54 - 134
cis-1,2-Dichloroethene	20.0	110	87		1	17	56 - 128
1,1-Dichloroethane	20.0	18	88		2	24	57 - 142
2-Butanone	100	82	82		2	29	10 - 180
Chloroform	20.0	20	99		4	17	58 - 139
1,1,1-Trichloroethane	20.0	21	106		1	25	57 - 148
Methyl acetate	20.0	9.0	45	*	8	20	70 - 130
Cyclohexane	20.0	15	74		2	20	70 - 130
Carbon Tetrachloride	20.0	18	89		5	27	54 - 156
1,2-Dichloroethane	20.0	16	78		7	18	50 - 156
Benzene	20.0	19	94		5	14	56 - 136
Trichloroethene	20.0	45	103		4	20	62 - 135
1,2-Dichloropropane	20.0	15	75		0.3	26	61 - 133
Bromodichloromethane	20.0	18	89		9	19	58 - 135
4-Methyl-2-pentanone	100	98	98		2	24	19 - 180
2-Hexanone	100	70	70		0.1	28	12 - 180
cis-1,3-Dichloropropene	20.0	15	77		2	20	64 - 128
Toluene	20.0	23	114		0.6	16	64 - 131
trans-1,3-Dichloropropene	20.0	20	100		7	17	65 - 149
1,1,2-Trichloroethane	20.0	22	108		4	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0043-035.0-20210128

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1B04020	Laboratory ID:	1B04020-MSD1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: HMPN-MW0043-035.0-20210128

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	22	110	3	21	60 - 147
Dibromochloromethane	20.0	24	120	2	18	50 - 140
1,2-Dibromoethane	20.0	22	111	3	16	57 - 140
Chlorobenzene	20.0	25	127	0.6	13	51 - 139
Ethylbenzene	20.0	23	114	2	18	63 - 133
m,p-Xylenes	40.0	51	128	0.02	18	64 - 133
o-Xylene	20.0	24	121	3	16	61 - 129
Bromoform	20.0	21	107	4	18	46 - 148
Styrene	20.0	24	122	0.3	32	59 - 136
Isopropylbenzene	20.0	25	123	0.3	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	104	8	17	60 - 139
1,2,4-Trichlorobenzene	20.0	15	74	4	24	52 - 159
1,3-Dichlorobenzene	20.0	22	108	3	23	66 - 129
1,4-Dichlorobenzene	20.0	21	104	0.05	23	65 - 133
1,2-Dichlorobenzene	20.0	21	107	0.5	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	18	89	8	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

DGRS Influent

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04041
Laboratory ID: 1B04041-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: DGRS Influent

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	18	92	10 - 180
Chloromethane	20.0	ND	11	54	33 - 154
Vinyl chloride	20.0	ND	18	89	20 - 167
Bromomethane	20.0	ND	17	83	10 - 173
Chloroethane	20.0	ND	23	114	27 - 180
Trichlorofluoromethane	20.0	ND	22	110	56 - 155
Freon 113	20.0	ND	22	111	47 - 173
Acetone	100	ND	65	65	10 - 180
1,1-Dichloroethene	20.0	ND	20	101	47 - 139
Carbon disulfide	20.0	ND	18	90	43 - 153
Methylene Chloride	20.0	ND	19	94	43 - 142
Methyl-tert-Butyl Ether	20.0	48	63	77	51 - 145
trans-1,2-Dichloroethene	20.0	ND	20	99	54 - 134
cis-1,2-Dichloroethene	20.0	ND	21	103	56 - 128
1,1-Dichloroethane	20.0	ND	17	86	57 - 142
2-Butanone	100	ND	87	87	10 - 180
Chloroform	20.0	ND	20	102	58 - 139
1,1,1-Trichloroethane	20.0	ND	21	104	57 - 148
Methyl acetate	20.0	ND	7.8	39 *	70 - 130
Cyclohexane	20.0	11	23	60 *	70 - 130
Carbon Tetrachloride	20.0	ND	18	88	54 - 156
1,2-Dichloroethane	20.0	ND	15	77	50 - 156
Benzene	20.0	44	63	94	56 - 136
Trichloroethene	20.0	ND	23	117	62 - 135
1,2-Dichloropropane	20.0	ND	15	74	61 - 133
Bromodichloromethane	20.0	ND	19	96	58 - 135
4-Methyl-2-pentanone	100	ND	95	95	19 - 180
2-Hexanone	100	ND	60	60	12 - 180
cis-1,3-Dichloropropene	20.0	ND	16	80	64 - 128
Toluene	20.0	0.98	23	110	64 - 131
trans-1,3-Dichloropropene	20.0	ND	18	92	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

DGRS Influent

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04041
Laboratory ID: 1B04041-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: DGRS Influent

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	21	104	57 - 141
Tetrachloroethene	20.0	ND	21	105	60 - 147
Dibromochloromethane	20.0	ND	22	112	50 - 140
1,2-Dibromoethane	20.0	ND	22	108	57 - 140
Chlorobenzene	20.0	ND	24	122	51 - 139
Ethylbenzene	20.0	9.5	32	114	63 - 133
m,p-Xylenes	40.0	29	78	122	64 - 133
o-Xylene	20.0	39	62	115	61 - 129
Bromoform	20.0	ND	20	100	46 - 148
Styrene	20.0	ND	25	125	59 - 136
Isopropylbenzene	20.0	4.4	29	123	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	21	104	60 - 139
1,2,4-Trichlorobenzene	20.0	0.97	15	70	52 - 159
1,3-Dichlorobenzene	20.0	ND	22	109	66 - 129
1,4-Dichlorobenzene	20.0	ND	21	103	65 - 133
1,2-Dichlorobenzene	20.0	ND	21	106	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	17	85	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

DGRS Influent

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04041
Laboratory ID: 1B04041-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: DGRS Influent

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	18	89	3	26	10 - 180
Chloromethane	20.0	12	61	12	31	33 - 154
Vinyl chloride	20.0	20	100	12	24	20 - 167
Bromomethane	20.0	10	50	50 *	29	10 - 173
Chloroethane	20.0	23	114	0.2	22	27 - 180
Trichlorofluoromethane	20.0	22	109	2	22	56 - 155
Freon 113	20.0	21	105	6	30	47 - 173
Acetone	100	70	70	8	19	10 - 180
1,1-Dichloroethene	20.0	21	107	6	16	47 - 139
Carbon disulfide	20.0	19	97	8	26	43 - 153
Methylene Chloride	20.0	20	100	6	23	43 - 142
Methyl-tert-Butyl Ether	20.0	65	88	3	22	51 - 145
trans-1,2-Dichloroethene	20.0	21	104	4	20	54 - 134
cis-1,2-Dichloroethene	20.0	20	102	0.7	17	56 - 128
1,1-Dichloroethane	20.0	18	88	3	24	57 - 142
2-Butanone	100	87	87	0.6	29	10 - 180
Chloroform	20.0	20	98	4	17	58 - 139
1,1,1-Trichloroethane	20.0	20	102	2	25	57 - 148
Methyl acetate	20.0	12	59 *	41 *	20	70 - 130
Cyclohexane	20.0	26	77	13	20	70 - 130
Carbon Tetrachloride	20.0	19	95	8	27	54 - 156
1,2-Dichloroethane	20.0	15	77	0.6	18	50 - 156
Benzene	20.0	64	96	0.9	14	56 - 136
Trichloroethene	20.0	22	109	7	20	62 - 135
1,2-Dichloropropane	20.0	15	75	2	26	61 - 133
Bromodichloromethane	20.0	18	88	9	19	58 - 135
4-Methyl-2-pentanone	100	86	86	10	24	19 - 180
2-Hexanone	100	68	68	12	28	12 - 180
cis-1,3-Dichloropropene	20.0	16	80	0.3	20	64 - 128
Toluene	20.0	23	112	2	16	64 - 131
trans-1,3-Dichloropropene	20.0	18	91	0.7	17	65 - 149
1,1,2-Trichloroethane	20.0	21	105	0.8	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

DGRS Influent

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B04041
Laboratory ID: 1B04041-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: DGRS Influent

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	21	106	0.7	21	60 - 147
Dibromochloromethane	20.0	22	112	0.2	18	50 - 140
1,2-Dibromoethane	20.0	21	104	4	16	57 - 140
Chlorobenzene	20.0	23	117	4	13	51 - 139
Ethylbenzene	20.0	31	109	3	18	63 - 133
m,p-Xylenes	40.0	73	110	7	18	64 - 133
o-Xylene	20.0	60	106	3	16	61 - 129
Bromoform	20.0	19	96	3	18	46 - 148
Styrene	20.0	23	116	7	32	59 - 136
Isopropylbenzene	20.0	27	111	9	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	19	96	8	17	60 - 139
1,2,4-Trichlorobenzene	20.0	17	81	13	24	52 - 159
1,3-Dichlorobenzene	20.0	23	114	5	23	66 - 129
1,4-Dichlorobenzene	20.0	21	106	3	23	65 - 133
1,2-Dichlorobenzene	20.0	22	109	3	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	21	104	19	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-35

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B05008
Laboratory ID: 1B05008-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-35

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	18	88	10 - 180
Chloromethane	20.0	ND	20	100	33 - 154
Vinyl chloride	20.0	ND	22	109	20 - 167
Bromomethane	20.0	ND	17	83	10 - 173
Chloroethane	20.0	ND	24	120	27 - 180
Trichlorofluoromethane	20.0	ND	23	116	56 - 155
Freon 113	20.0	ND	24	121	47 - 173
Acetone	100	ND	110	112	10 - 180
1,1-Dichloroethene	20.0	ND	21	106	47 - 139
Carbon disulfide	20.0	ND	22	112	43 - 153
Methylene Chloride	20.0	ND	21	107	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	20	101	51 - 145
trans-1,2-Dichloroethene	20.0	ND	22	109	54 - 134
cis-1,2-Dichloroethene	20.0	ND	21	106	56 - 128
1,1-Dichloroethane	20.0	ND	23	114	57 - 142
2-Butanone	100	ND	150	146	10 - 180
Chloroform	20.0	ND	21	107	58 - 139
1,1,1-Trichloroethane	20.0	ND	22	112	57 - 148
Methyl acetate	20.0	ND	21	107	70 - 130
Cyclohexane	20.0	ND	26	128	70 - 130
Carbon Tetrachloride	20.0	ND	22	110	54 - 156
1,2-Dichloroethane	20.0	ND	20	101	50 - 156
Benzene	20.0	ND	21	106	56 - 136
Trichloroethene	20.0	ND	21	105	62 - 135
1,2-Dichloropropane	20.0	ND	20	99	61 - 133
Bromodichloromethane	20.0	ND	19	97	58 - 135
4-Methyl-2-pentanone	100	ND	100	101	19 - 180
2-Hexanone	100	ND	96	96	12 - 180
cis-1,3-Dichloropropene	20.0	ND	19	93	64 - 128
Toluene	20.0	ND	20	98	64 - 131
trans-1,3-Dichloropropene	20.0	ND	19	97	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-35

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B05008
Laboratory ID: 1B05008-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-35

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	18	92	57 - 141
Tetrachloroethene	20.0	ND	21	104	60 - 147
Dibromochloromethane	20.0	ND	18	92	50 - 140
1,2-Dibromoethane	20.0	ND	19	95	57 - 140
Chlorobenzene	20.0	ND	19	95	51 - 139
Ethylbenzene	20.0	ND	19	93	63 - 133
m,p-Xylenes	40.0	ND	37	92	64 - 133
o-Xylene	20.0	ND	18	90	61 - 129
Bromoform	20.0	ND	19	94	46 - 148
Styrene	20.0	ND	19	95	59 - 136
Isopropylbenzene	20.0	ND	18	92	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	19	93	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	20	101	52 - 159
1,3-Dichlorobenzene	20.0	ND	19	93	66 - 129
1,4-Dichlorobenzene	20.0	ND	18	90	65 - 133
1,2-Dichlorobenzene	20.0	ND	19	93	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	19	95	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-35

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B05008
Laboratory ID: 1B05008-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-35

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	17	86	2	26	10 - 180
Chloromethane	20.0	20	99	1	31	33 - 154
Vinyl chloride	20.0	21	106	3	24	20 - 167
Bromomethane	20.0	17	86	4	29	10 - 173
Chloroethane	20.0	24	121	0.7	22	27 - 180
Trichlorofluoromethane	20.0	23	113	3	22	56 - 155
Freon 113	20.0	24	119	2	30	47 - 173
Acetone	100	95	95	17	19	10 - 180
1,1-Dichloroethene	20.0	21	103	3	16	47 - 139
Carbon disulfide	20.0	21	105	6	26	43 - 153
Methylene Chloride	20.0	21	104	2	23	43 - 142
Methyl-tert-Butyl Ether	20.0	18	89	13	22	51 - 145
trans-1,2-Dichloroethene	20.0	21	107	2	20	54 - 134
cis-1,2-Dichloroethene	20.0	21	105	0.8	17	56 - 128
1,1-Dichloroethane	20.0	22	112	1	24	57 - 142
2-Butanone	100	120	125	15	29	10 - 180
Chloroform	20.0	21	106	1	17	58 - 139
1,1,1-Trichloroethane	20.0	22	110	2	25	57 - 148
Methyl acetate	20.0	19	94	13	20	70 - 130
Cyclohexane	20.0	25	125	2	20	70 - 130
Carbon Tetrachloride	20.0	22	108	3	27	54 - 156
1,2-Dichloroethane	20.0	19	93	8	18	50 - 156
Benzene	20.0	21	105	1	14	56 - 136
Trichloroethene	20.0	21	103	1	20	62 - 135
1,2-Dichloropropane	20.0	20	98	1	26	61 - 133
Bromodichloromethane	20.0	19	95	2	19	58 - 135
4-Methyl-2-pentanone	100	87	87	15	24	19 - 180
2-Hexanone	100	86	86	12	28	12 - 180
cis-1,3-Dichloropropene	20.0	17	87	7	20	64 - 128
Toluene	20.0	19	97	0.9	16	64 - 131
trans-1,3-Dichloropropene	20.0	18	88	10	17	65 - 149
1,1,2-Trichloroethane	20.0	17	84	9	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-35

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1B05008
Laboratory ID: 1B05008-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-35

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	20	102	2	21	60 - 147
Dibromochloromethane	20.0	17	85	8	18	50 - 140
1,2-Dibromoethane	20.0	17	87	9	16	57 - 140
Chlorobenzene	20.0	18	92	2	13	51 - 139
Ethylbenzene	20.0	18	92	1	18	63 - 133
m,p-Xylenes	40.0	36	90	2	18	64 - 133
o-Xylene	20.0	18	89	1	16	61 - 129
Bromoform	20.0	17	84	11	18	46 - 148
Styrene	20.0	18	92	3	32	59 - 136
Isopropylbenzene	20.0	18	91	1	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	16	82	12	17	60 - 139
1,2,4-Trichlorobenzene	20.0	18	89	13	24	52 - 159
1,3-Dichlorobenzene	20.0	18	90	3	23	66 - 129
1,4-Dichlorobenzene	20.0	18	90	0.2	23	65 - 133
1,2-Dichlorobenzene	20.0	18	89	5	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	17	83	12	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA63653
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA63653-SCV1)			Lab File ID: 205KN012.D		Analyzed: 11/19/20 13:24			
Dibromofluoromethane	50.0	100	70 - 130	9.422	9.4205	0.0015	+/-0.5	
Toluene-d8	50.0	104	70 - 130	11.772	11.77275	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	105	70 - 130	14.322	14.322	0.0000	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64808
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA64808-SCV1)			Lab File ID: 212B4012.D		Analyzed: 02/04/21 13:15			
Dibromofluoromethane	50.0	99	70 - 130	11.07	11.06875	0.0013	+/-0.5	
Toluene-d8	50.0	97	70 - 130	13.24	13.2325	0.0075	+/-0.5	
4-Bromofluorobenzene	50.0	99	70 - 130	15.73	15.73	0.0000	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64811
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA64811-CCV1)			Lab File ID: 215B4002.D		Analyzed: 02/04/21 08:08			
Dibromofluoromethane	50.0	108	80 - 120	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	97	80 - 120	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	80 - 120	14.334	14.322	0.0120	+/-0.5	
LCS (1B04020-BS1)			Lab File ID: 215B4003.D		Analyzed: 02/04/21 08:38			
Dibromofluoromethane	50.0	108	53 - 146	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	107	41 - 142	14.328	14.322	0.0060	+/-0.5	
Blank (1B04020-BLK1)			Lab File ID: 215B4005.D		Analyzed: 02/04/21 09:37			
Dibromofluoromethane	50.0	106	53 - 146	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.328	14.322	0.0060	+/-0.5	
Instrument RL Check (AA64811-CRL1)			Lab File ID: 215B4006.D		Analyzed: 02/04/21 10:06			
Dibromofluoromethane	50.0	110	1 - 199	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	95	1 - 199	11.778	11.77275	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	108	1 - 199	14.328	14.322	0.0060	+/-0.5	
HMPN-MW0043-035.0-20210128 (AE00180-01)			Lab File ID: 215B4007.D		Analyzed: 02/04/21 10:36			
Dibromofluoromethane	50.0	109	53 - 146	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.778	11.77275	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.328	14.322	0.0060	+/-0.5	
HMPN-MW0044-045.0-20210128 (AE00180-02)			Lab File ID: 215B4008.D		Analyzed: 02/04/21 11:06			
Dibromofluoromethane	50.0	106	53 - 146	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	92	41 - 146	11.778	11.77275	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.328	14.322	0.0060	+/-0.5	
HMPN-MW0041-035.0-20210128 (AE00180-03)			Lab File ID: 215B4009.D		Analyzed: 02/04/21 11:35			
Dibromofluoromethane	50.0	109	53 - 146	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.778	11.77275	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.328	14.322	0.0060	+/-0.5	
HMPN-MW0042-042.5-20210128 (AE00180-04)			Lab File ID: 215B4010.D		Analyzed: 02/04/21 12:05			
Dibromofluoromethane	50.0	109	53 - 146	9.428	9.4205	0.0075	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.778	11.77275	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.328	14.322	0.0060	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64811
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0037-010.0-20210129 (AE00180-05)			Lab File ID: 215B4011.D		Analyzed: 02/04/21 12:34			
Dibromofluoromethane	50.0	107	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.328	14.322	0.0060	+/-0.5	
HMPN-MW0038-020.0-20210129 (AE00180-06)			Lab File ID: 215B4012.D		Analyzed: 02/04/21 13:04			
Dibromofluoromethane	50.0	110	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.328	14.322	0.0060	+/-0.5	
HMPN-MW0046-015.0-20210129 (AE00180-07)			Lab File ID: 215B4013.D		Analyzed: 02/04/21 13:33			
Dibromofluoromethane	50.0	102	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	92	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0047-025.0-20210129 (AE00180-08)			Lab File ID: 215B4014.D		Analyzed: 02/04/21 14:03			
Dibromofluoromethane	50.0	105	53 - 146	9.433	9.4205	0.0125	+/-0.5	
Toluene-d8	50.0	92	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	111	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0036-015.0-20210129 (AE00180-09)			Lab File ID: 215B4015.D		Analyzed: 02/04/21 14:33			
Dibromofluoromethane	50.0	103	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0011-025.0-20210129 (AE00180-10)			Lab File ID: 215B4016.D		Analyzed: 02/04/21 15:02			
Dibromofluoromethane	50.0	105	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0029-015.0-20210129 (AE00180-11)			Lab File ID: 215B4017.D		Analyzed: 02/04/21 15:32			
Dibromofluoromethane	50.0	108	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0030-025.0-20210129 (AE00180-12)			Lab File ID: 215B4018.D		Analyzed: 02/04/21 16:01			
Dibromofluoromethane	50.0	109	53 - 146	9.433	9.4205	0.0125	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.334	14.322	0.0120	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64811
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0031-035.0-20210129 (AE00180-13)			Lab File ID: 215B4019.D		Analyzed: 02/04/21 16:31			
Dibromofluoromethane	50.0	107	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0032-042.5-20210129 (AE00180-14)			Lab File ID: 215B4020.D		Analyzed: 02/04/21 17:00			
Dibromofluoromethane	50.0	104	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0008-025.0-20210129 (AE00180-16)			Lab File ID: 215B4022.D		Analyzed: 02/04/21 17:59			
Dibromofluoromethane	50.0	106	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	112	41 - 142	14.334	14.322	0.0120	+/-0.5	
Matrix Spike (1B04020-MS1)			Lab File ID: 215B4023.D		Analyzed: 02/04/21 18:29			
Dibromofluoromethane	50.0	109	53 - 146	9.433	9.4205	0.0125	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.334	14.322	0.0120	+/-0.5	
Matrix Spike Dup (1B04020-MSD1)			Lab File ID: 215B4024.D		Analyzed: 02/04/21 18:59			
Dibromofluoromethane	50.0	110	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	111	41 - 142	14.334	14.322	0.0120	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64821
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA64821-CCV1)				Lab File ID: 215B4026.D		Analyzed: 02/04/21 19:58		
Dibromofluoromethane	50.0	106	80 - 120	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	98	80 - 120	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	108	80 - 120	14.334	14.322	0.0120	+/-0.5	
LCS (1B04041-BS1)				Lab File ID: 215B4027.D		Analyzed: 02/04/21 20:27		
Dibromofluoromethane	50.0	106	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.334	14.322	0.0120	+/-0.5	
Instrument RL Check (AA64821-CRL1)				Lab File ID: 215B4028.D		Analyzed: 02/04/21 20:57		
Dibromofluoromethane	50.0	105	1 - 199	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	94	1 - 199	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	107	1 - 199	14.334	14.322	0.0120	+/-0.5	
Blank (1B04041-BLK1)				Lab File ID: 215B4031.D		Analyzed: 02/04/21 22:26		
Dibromofluoromethane	50.0	104	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.334	14.322	0.0120	+/-0.5	
Matrix Spike (1B04041-MS1)				Lab File ID: 215B4032.D		Analyzed: 02/04/21 22:56		
Dibromofluoromethane	50.0	105	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	97	41 - 146	11.784	11.77275	0.0113	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0024-060.0-20210129 (AE00180-17)				Lab File ID: 215B4036.D		Analyzed: 02/05/21 00:55		
Dibromofluoromethane	50.0	104	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0035-035.0-20210129 (AE00180-18)				Lab File ID: 215B4037.D		Analyzed: 02/05/21 01:25		
Dibromofluoromethane	50.0	111	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0034-015.0-20210129 (AE00180-19)				Lab File ID: 215B4038.D		Analyzed: 02/05/21 01:54		
Dibromofluoromethane	50.0	106	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.34	14.322	0.0180	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64821
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0039-035.0-20210131 (AE00180-20)			Lab File ID: 215B4039.D		Analyzed: 02/05/21 02:24			
Dibromofluoromethane	50.0	107	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0040-042.5-20210131 (AE00180-21)			Lab File ID: 215B4040.D		Analyzed: 02/05/21 02:54			
Dibromofluoromethane	50.0	106	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	97	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.334	14.322	0.0120	+/-0.5	
HMPN-MW0009-010.0-20210131 (AE00180-22)			Lab File ID: 215B4041.D		Analyzed: 02/05/21 03:23			
Dibromofluoromethane	50.0	107	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0004-010.0-20210131 (AE00180-23)			Lab File ID: 215B4042.D		Analyzed: 02/05/21 03:53			
Dibromofluoromethane	50.0	109	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0027-042.5-20210201 (AE00180-24)			Lab File ID: 215B4043.D		Analyzed: 02/05/21 04:23			
Dibromofluoromethane	50.0	99	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0028-047.5-20210201 (AE00180-25)			Lab File ID: 215B4044.D		Analyzed: 02/05/21 04:52			
Dibromofluoromethane	50.0	101	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	105	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	107	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0002-035.0-20210201 (AE00180-28)			Lab File ID: 215B4047.D		Analyzed: 02/05/21 06:21			
Dibromofluoromethane	50.0	104	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-DRUM222803-20210201 (AE00180-29)			Lab File ID: 215B4048.D		Analyzed: 02/05/21 06:51			
Dibromofluoromethane	50.0	105	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	105	41 - 142	14.34	14.322	0.0180	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64821
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA64821-CCV2)			Lab File ID: 215B5003.D		Analyzed: 02/05/21 08:55			
Dibromofluoromethane	50.0	100	80 - 120	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	80 - 120	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	107	80 - 120	14.34	14.322	0.0180	+/-0.5	
Matrix Spike Dup (1B04041-MSD1)			Lab File ID: 215B5004.D		Analyzed: 02/05/21 09:25			
Dibromofluoromethane	50.0	105	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	97	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	107	41 - 142	14.334	14.322	0.0120	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64833
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA64833-CCV1)			Lab File ID: 212B5002.D		Analyzed: 02/05/21 08:20			
Dibromofluoromethane	50.0	102	80 - 120	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	98	80 - 120	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	96	80 - 120	15.75	15.73	0.0200	+/-0.5	
LCS (1B05008-BS1)			Lab File ID: 212B5003.D		Analyzed: 02/05/21 08:55			
Dibromofluoromethane	50.0	106	53 - 146	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	100	41 - 146	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	15.75	15.73	0.0200	+/-0.5	
Matrix Spike (1B05008-MS1)			Lab File ID: 212B5004.D		Analyzed: 02/05/21 09:35			
Dibromofluoromethane	50.0	105	53 - 146	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	96	41 - 146	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	96	41 - 142	15.75	15.73	0.0200	+/-0.5	
Matrix Spike Dup (1B05008-MSD1)			Lab File ID: 212B5005.D		Analyzed: 02/05/21 10:04			
Dibromofluoromethane	50.0	102	53 - 146	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	98	41 - 146	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	94	41 - 142	15.74	15.73	0.0100	+/-0.5	
Blank (1B05008-BLK1)			Lab File ID: 212B5009.D		Analyzed: 02/05/21 11:59			
Dibromofluoromethane	50.0	105	53 - 146	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	98	41 - 146	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	95	41 - 142	15.75	15.73	0.0200	+/-0.5	
HMPN-MW0033-047.5-20210129 (AE00180-15RE1)			Lab File ID: 212B5011.D		Analyzed: 02/05/21 12:56			
Dibromofluoromethane	50.0	105	53 - 146	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	97	41 - 146	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	94	41 - 142	15.75	15.73	0.0200	+/-0.5	
HMPN-MW0002-035.0-20210201 (AE00180-28RE1)			Lab File ID: 212B5012.D		Analyzed: 02/05/21 13:25			
Dibromofluoromethane	50.0	105	53 - 146	11.09	11.06875	0.0213	+/-0.5	
Toluene-d8	50.0	99	41 - 146	13.25	13.2325	0.0175	+/-0.5	
4-Bromofluorobenzene	50.0	96	41 - 142	15.75	15.73	0.0200	+/-0.5	
HMPN-MW0041-035.0-20210128 (AE00180-03RE1)			Lab File ID: 212B5013.D		Analyzed: 02/05/21 13:54			
Dibromofluoromethane	50.0	103	53 - 146	11.1	11.06875	0.0313	+/-0.5	
Toluene-d8	50.0	98	41 - 146	13.26	13.2325	0.0275	+/-0.5	
4-Bromofluorobenzene	50.0	94	41 - 142	15.76	15.73	0.0300	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64833
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0037-010.0-20210129 (AE00180-05RE1)			Lab File ID: 212B5014.D		Analyzed: 02/05/21 14:23			
Dibromofluoromethane	50.0	104	53 - 146	11.1	11.06875	0.0313	+/-0.5	
Toluene-d8	50.0	98	41 - 146	13.26	13.2325	0.0275	+/-0.5	
4-Bromofluorobenzene	50.0	93	41 - 142	15.76	15.73	0.0300	+/-0.5	
HMPN-MW0038-020.0-20210129 (AE00180-06RE1)			Lab File ID: 212B5015.D		Analyzed: 02/05/21 14:51			
Dibromofluoromethane	50.0	112	53 - 146	11.1	11.06875	0.0313	+/-0.5	
Toluene-d8	50.0	102	41 - 146	13.26	13.2325	0.0275	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	15.76	15.73	0.0300	+/-0.5	
HMPN-MW0016-010.0-20210201 (AE00180-26RE1)			Lab File ID: 212B5016.D		Analyzed: 02/05/21 15:20			
Dibromofluoromethane	50.0	104	53 - 146	11.1	11.06875	0.0313	+/-0.5	
Toluene-d8	50.0	97	41 - 146	13.26	13.2325	0.0275	+/-0.5	
4-Bromofluorobenzene	50.0	94	41 - 142	15.75	15.73	0.0200	+/-0.5	
HMPN-MW0045-030.0-20210201 (AE00180-27RE1)			Lab File ID: 212B5017.D		Analyzed: 02/05/21 15:49			
Dibromofluoromethane	50.0	108	53 - 146	11.1	11.06875	0.0313	+/-0.5	
Toluene-d8	50.0	99	41 - 146	13.26	13.2325	0.0275	+/-0.5	
4-Bromofluorobenzene	50.0	95	41 - 142	15.76	15.73	0.0300	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64837
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA64837-CCV1)			Lab File ID: 215B5003.D		Analyzed: 02/05/21 08:55			
Dibromofluoromethane	50.0	100	80 - 120	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	80 - 120	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	107	80 - 120	14.34	14.322	0.0180	+/-0.5	
LCS (1B05029-BS1)			Lab File ID: 215B5005.D		Analyzed: 02/05/21 09:55			
Dibromofluoromethane	50.0	103	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	104	41 - 142	14.334	14.322	0.0120	+/-0.5	
LCS Dup (1B05029-BSD1)			Lab File ID: 215B5006.D		Analyzed: 02/05/21 10:25			
Dibromofluoromethane	50.0	105	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.334	14.322	0.0120	+/-0.5	
Blank (1B05029-BLK1)			Lab File ID: 215B5008.D		Analyzed: 02/05/21 11:24			
Dibromofluoromethane	50.0	105	53 - 146	9.434	9.4205	0.0135	+/-0.5	
Toluene-d8	50.0	96	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.34	14.322	0.0180	+/-0.5	
Instrument RL Check (AA64837-CRL1)			Lab File ID: 215B5009.D		Analyzed: 02/05/21 11:53			
Dibromofluoromethane	50.0	105	1 - 199	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	94	1 - 199	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	101	1 - 199	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0035-035.0-20210129 (AE00180-18RE1)			Lab File ID: 215B5010.D		Analyzed: 02/05/21 12:23			
Dibromofluoromethane	50.0	105	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	111	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0034-015.0-20210129 (AE00180-19RE1)			Lab File ID: 215B5011.D		Analyzed: 02/05/21 12:53			
Dibromofluoromethane	50.0	102	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	94	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	107	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0035-035.0-20210129 (AE00180-18RE2)			Lab File ID: 215B5012.D		Analyzed: 02/05/21 13:22			
Dibromofluoromethane	50.0	101	53 - 146	9.445	9.4205	0.0245	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.79	11.77275	0.0172	+/-0.5	
4-Bromofluorobenzene	50.0	105	41 - 142	14.34	14.322	0.0180	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA64837
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0039-035.0-20210131 (AE00180-20RE1)			Lab File ID: 215B5013.D		Analyzed: 02/05/21 13:52			
Dibromofluoromethane	50.0	101	53 - 146	9.445	9.4205	0.0245	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.796	11.77275	0.0232	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.346	14.322	0.0240	+/-0.5	
HMPN-MW0040-042.5-20210131 (AE00180-21RE1)			Lab File ID: 215B5014.D		Analyzed: 02/05/21 14:21			
Dibromofluoromethane	50.0	102	53 - 146	9.439	9.4205	0.0185	+/-0.5	
Toluene-d8	50.0	91	41 - 146	11.795	11.77275	0.0222	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0009-010.0-20210131 (AE00180-22RE1)			Lab File ID: 215B5015.D		Analyzed: 02/05/21 14:51			
Dibromofluoromethane	50.0	102	53 - 146	9.445	9.4205	0.0245	+/-0.5	
Toluene-d8	50.0	95	41 - 146	11.795	11.77275	0.0222	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.34	14.322	0.0180	+/-0.5	
HMPN-MW0027-042.5-20210201 (AE00180-24RE1)			Lab File ID: 215B5016.D		Analyzed: 02/05/21 15:21			
Dibromofluoromethane	50.0	101	53 - 146	9.445	9.4205	0.0245	+/-0.5	
Toluene-d8	50.0	92	41 - 146	11.796	11.77275	0.0232	+/-0.5	
4-Bromofluorobenzene	50.0	112	41 - 142	14.346	14.322	0.0240	+/-0.5	
HMPN-MW0028-047.5-20210201 (AE00180-25RE1)			Lab File ID: 215B5017.D		Analyzed: 02/05/21 15:50			
Dibromofluoromethane	50.0	104	53 - 146	9.445	9.4205	0.0245	+/-0.5	
Toluene-d8	50.0	93	41 - 146	11.796	11.77275	0.0232	+/-0.5	
4-Bromofluorobenzene	50.0	107	41 - 142	14.346	14.322	0.0240	+/-0.5	
HMPN-DRUM222803-20210201 (AE00180-29RE1)			Lab File ID: 215B5018.D		Analyzed: 02/05/21 16:20			
Dibromofluoromethane	50.0	102	53 - 146	9.44	9.4205	0.0195	+/-0.5	
Toluene-d8	50.0	91	41 - 146	11.796	11.77275	0.0232	+/-0.5	
4-Bromofluorobenzene	50.0	109	41 - 142	14.346	14.322	0.0240	+/-0.5	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA63653
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA63653-CAL1)			Lab File ID: 205KN003.D			Analyzed: 11/19/20 08:46			
Pentafluorobenzene	1250058	9.851	1217120	9.845	103	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2384669	10.444	2353990	10.438	101	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1608704	13.223	1612072	13.217	100	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1323293	15.48	1366836	15.474	97	50 - 200	0.0060	+/-0.50	
Cal Standard (AA63653-CAL2)			Lab File ID: 205KN004.D			Analyzed: 11/19/20 09:16			
Pentafluorobenzene	1204238	9.845	1217120	9.845	99	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2405138	10.438	2353990	10.438	102	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1568806	13.217	1612072	13.217	97	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1312583	15.48	1366836	15.474	96	50 - 200	0.0060	+/-0.50	
Cal Standard (AA63653-CAL3)			Lab File ID: 205KN005.D			Analyzed: 11/19/20 09:47			
Pentafluorobenzene	1203996	9.845	1217120	9.845	99	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2450219	10.438	2353990	10.438	104	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1607155	13.217	1612072	13.217	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1325758	15.48	1366836	15.474	97	50 - 200	0.0060	+/-0.50	
Cal Standard (AA63653-CAL4)			Lab File ID: 205KN006.D			Analyzed: 11/19/20 10:18			
Pentafluorobenzene	1172592	9.845	1217120	9.845	96	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2346408	10.438	2353990	10.438	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1580434	13.223	1612072	13.217	98	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1299188	15.48	1366836	15.474	95	50 - 200	0.0060	+/-0.50	
Cal Standard (AA63653-CAL5)			Lab File ID: 205KN007.D			Analyzed: 11/19/20 10:49			
Pentafluorobenzene	1203065	9.845	1217120	9.845	99	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2330356	10.438	2353990	10.438	99	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1579586	13.217	1612072	13.217	98	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1295652	15.48	1366836	15.474	95	50 - 200	0.0060	+/-0.50	
Cal Standard (AA63653-CAL6)			Lab File ID: 205KN008.D			Analyzed: 11/19/20 11:20			
Pentafluorobenzene	1217120	9.845	1217120	9.845	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2353990	10.438	2353990	10.438	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1612072	13.217	1612072	13.217	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1366836	15.474	1366836	15.474	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA63653-CAL7)			Lab File ID: 205KN009.D			Analyzed: 11/19/20 11:51			
Pentafluorobenzene	1208553	9.845	1217120	9.845	99	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2324329	10.438	2353990	10.438	99	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1614423	13.217	1612072	13.217	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1389872	15.48	1366836	15.474	102	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA63653
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA63653-CAL8)			Lab File ID: 205KN010.D			Analyzed: 11/19/20 12:22			
Pentafluorobenzene	1285587	9.845	1217120	9.845	106	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2302813	10.438	2353990	10.438	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1664856	13.218	1612072	13.217	103	50 - 200	0.0010	+/-0.50	
1,4-Dichlorobenzene-d4	1435917	15.48	1366836	15.474	105	50 - 200	0.0060	+/-0.50	
Secondary Cal Check (AA63653-SCV1)			Lab File ID: 205KN012.D			Analyzed: 11/19/20 13:24			
Pentafluorobenzene	1335071	9.851	1217120	9.845	110	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2438645	10.444	2353990	10.438	104	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1652574	13.223	1612072	13.217	103	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1403353	15.48	1366836	15.474	103	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64808
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA64808-CAL1)			Lab File ID: 212B4002.D			Analyzed: 02/04/21 08:28			
Pentafluorobenzene	178435	11.46	270209	11.46	66	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	304980	12.01	483052	12.01	63	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	172086	14.61	235561	14.61	73	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	142234	16.98	156580	16.98	91	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64808-CAL2)			Lab File ID: 212B4003.D			Analyzed: 02/04/21 08:57			
Pentafluorobenzene	199854	11.45	270209	11.46	74	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	343837	12.01	483052	12.01	71	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	187069	14.61	235561	14.61	79	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	145922	16.98	156580	16.98	93	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64808-CAL3)			Lab File ID: 212B4004.D			Analyzed: 02/04/21 09:26			
Pentafluorobenzene	215886	11.45	270209	11.46	80	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	379240	12.01	483052	12.01	79	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	199483	14.61	235561	14.61	85	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	149519	16.98	156580	16.98	95	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64808-CAL4)			Lab File ID: 212B4005.D			Analyzed: 02/04/21 09:54			
Pentafluorobenzene	270209	11.46	270209	11.46	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	483052	12.01	483052	12.01	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	235561	14.61	235561	14.61	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	156580	16.98	156580	16.98	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA64808-CAL5)			Lab File ID: 212B4006.D			Analyzed: 02/04/21 10:23			
Pentafluorobenzene	251747	11.46	270209	11.46	93	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	453865	12.01	483052	12.01	94	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	225182	14.61	235561	14.61	96	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	152185	16.97	156580	16.98	97	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA64808-CAL6)			Lab File ID: 212B4007.D			Analyzed: 02/04/21 10:52			
Pentafluorobenzene	268442	11.47	270209	11.46	99	50 - 200	0.0100	+/-0.50	
1,4-Difluorobenzene	494605	12.02	483052	12.01	102	50 - 200	0.0100	+/-0.50	
Chlorobenzene-d5	245390	14.61	235561	14.61	104	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	165726	16.97	156580	16.98	106	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA64808-CAL7)			Lab File ID: 212B4008.D			Analyzed: 02/04/21 11:20			
Pentafluorobenzene	261684	11.47	270209	11.46	97	50 - 200	0.0100	+/-0.50	
1,4-Difluorobenzene	489998	12.02	483052	12.01	101	50 - 200	0.0100	+/-0.50	
Chlorobenzene-d5	245966	14.61	235561	14.61	104	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	165062	16.97	156580	16.98	105	50 - 200	-0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64808
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA64808-CAL8)			Lab File ID: 212B4009.D			Analyzed: 02/04/21 11:49			
Pentafluorobenzene	260297	11.46	270209	11.46	96	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	490462	12.01	483052	12.01	102	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	244146	14.61	235561	14.61	104	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	165719	16.98	156580	16.98	106	50 - 200	0.0000	+/-0.50	
Secondary Cal Check (AA64808-SCV1)			Lab File ID: 212B4012.D			Analyzed: 02/04/21 13:15			
Pentafluorobenzene	249415	11.47	270209	11.46	92	50 - 200	0.0100	+/-0.50	
1,4-Difluorobenzene	452987	12.02	483052	12.01	94	50 - 200	0.0100	+/-0.50	
Chlorobenzene-d5	227625	14.61	235561	14.61	97	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	158064	16.98	156580	16.98	101	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64811
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA64811-CCV1)			Lab File ID: 215B4002.D			Analyzed: 02/04/21 08:08			
Pentafluorobenzene	1260521	9.851	1217120	9.845	104	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2600662	10.45	2353990	10.438	110	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1622445	13.229	1612072	13.217	101	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1538501	15.491	1366836	15.474	113	50 - 200	0.0170	+/-0.50	
LCS (1B04020-BS1)			Lab File ID: 215B4003.D			Analyzed: 02/04/21 08:38			
Pentafluorobenzene	1339042	9.857	1217120	9.845	110	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2747146	10.45	2353990	10.438	117	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1645340	13.229	1612072	13.217	102	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1473422	15.485	1366836	15.474	108	50 - 200	0.0110	+/-0.50	
Blank (1B04020-BLK1)			Lab File ID: 215B4005.D			Analyzed: 02/04/21 09:37			
Pentafluorobenzene	1201664	9.857	1217120	9.845	99	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2516659	10.45	2353990	10.438	107	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1454473	13.229	1612072	13.217	90	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1382524	15.485	1366836	15.474	101	50 - 200	0.0110	+/-0.50	
Instrument RL Check (AA64811-CRL1)			Lab File ID: 215B4006.D			Analyzed: 02/04/21 10:06			
Pentafluorobenzene	1180646	9.857	1217120	9.845	97	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2478135	10.45	2353990	10.438	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1428043	13.229	1612072	13.217	89	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1374637	15.491	1366836	15.474	101	50 - 200	0.0170	+/-0.50	
HMPN-MW0043-035.0-20210128 (AE00180-01)			Lab File ID: 215B4007.D			Analyzed: 02/04/21 10:36			
Pentafluorobenzene	1186548	9.851	1217120	9.845	97	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2448503	10.45	2353990	10.438	104	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1456942	13.229	1612072	13.217	90	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1373360	15.485	1366836	15.474	100	50 - 200	0.0110	+/-0.50	
HMPN-MW0044-045.0-20210128 (AE00180-02)			Lab File ID: 215B4008.D			Analyzed: 02/04/21 11:06			
Pentafluorobenzene	1186771	9.857	1217120	9.845	98	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2477777	10.45	2353990	10.438	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1441644	13.229	1612072	13.217	89	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1332138	15.491	1366836	15.474	97	50 - 200	0.0170	+/-0.50	
HMPN-MW0041-035.0-20210128 (AE00180-03)			Lab File ID: 215B4009.D			Analyzed: 02/04/21 11:35			
Pentafluorobenzene	1157451	9.857	1217120	9.845	95	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2390240	10.45	2353990	10.438	102	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1422553	13.229	1612072	13.217	88	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1351947	15.486	1366836	15.474	99	50 - 200	0.0120	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64811
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0042-042.5-20210128 (AE00180-04)			Lab File ID: 215B4010.D			Analyzed: 02/04/21 12:05			
Pentafluorobenzene	1180192	9.857	1217120	9.845	97	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2405496	10.45	2353990	10.438	102	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1398495	13.229	1612072	13.217	87	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1332643	15.485	1366836	15.474	97	50 - 200	0.0110	+/-0.50	
HMPN-MW0037-010.0-20210129 (AE00180-05)			Lab File ID: 215B4011.D			Analyzed: 02/04/21 12:34			
Pentafluorobenzene	1216684	9.857	1217120	9.845	100	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2482323	10.45	2353990	10.438	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1385442	13.229	1612072	13.217	86	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1355439	15.485	1366836	15.474	99	50 - 200	0.0110	+/-0.50	
HMPN-MW0038-020.0-20210129 (AE00180-06)			Lab File ID: 215B4012.D			Analyzed: 02/04/21 13:04			
Pentafluorobenzene	1180318	9.857	1217120	9.845	97	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2454660	10.45	2353990	10.438	104	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1424205	13.229	1612072	13.217	88	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1381669	15.491	1366836	15.474	101	50 - 200	0.0170	+/-0.50	
HMPN-MW0046-015.0-20210129 (AE00180-07)			Lab File ID: 215B4013.D			Analyzed: 02/04/21 13:33			
Pentafluorobenzene	1187500	9.857	1217120	9.845	98	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2415397	10.45	2353990	10.438	103	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1358505	13.229	1612072	13.217	84	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1315950	15.491	1366836	15.474	96	50 - 200	0.0170	+/-0.50	
HMPN-MW0047-025.0-20210129 (AE00180-08)			Lab File ID: 215B4014.D			Analyzed: 02/04/21 14:03			
Pentafluorobenzene	1217323	9.857	1217120	9.845	100	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2502226	10.45	2353990	10.438	106	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1407587	13.235	1612072	13.217	87	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1372086	15.491	1366836	15.474	100	50 - 200	0.0170	+/-0.50	
HMPN-MW0036-015.0-20210129 (AE00180-09)			Lab File ID: 215B4015.D			Analyzed: 02/04/21 14:33			
Pentafluorobenzene	1178944	9.857	1217120	9.845	97	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2372364	10.45	2353990	10.438	101	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1372897	13.229	1612072	13.217	85	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1346543	15.491	1366836	15.474	99	50 - 200	0.0170	+/-0.50	
HMPN-MW0011-025.0-20210129 (AE00180-10)			Lab File ID: 215B4016.D			Analyzed: 02/04/21 15:02			
Pentafluorobenzene	1215606	9.857	1217120	9.845	100	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2438959	10.45	2353990	10.438	104	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1392403	13.235	1612072	13.217	86	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1353015	15.491	1366836	15.474	99	50 - 200	0.0170	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64811
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0029-015.0-20210129 (AE00180-11)			Lab File ID: 215B4017.D			Analyzed: 02/04/21 15:32			
Pentafluorobenzene	1149886	9.862	1217120	9.845	94	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2385404	10.45	2353990	10.438	101	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1381654	13.235	1612072	13.217	86	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1358096	15.491	1366836	15.474	99	50 - 200	0.0170	+/-0.50	
HMPN-MW0030-025.0-20210129 (AE00180-12)			Lab File ID: 215B4018.D			Analyzed: 02/04/21 16:01			
Pentafluorobenzene	1174117	9.862	1217120	9.845	96	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2417037	10.45	2353990	10.438	103	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1426949	13.235	1612072	13.217	89	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1359965	15.491	1366836	15.474	99	50 - 200	0.0170	+/-0.50	
HMPN-MW0031-035.0-20210129 (AE00180-13)			Lab File ID: 215B4019.D			Analyzed: 02/04/21 16:31			
Pentafluorobenzene	1206545	9.857	1217120	9.845	99	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2436731	10.45	2353990	10.438	104	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1382941	13.235	1612072	13.217	86	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1338681	15.491	1366836	15.474	98	50 - 200	0.0170	+/-0.50	
HMPN-MW0032-042.5-20210129 (AE00180-14)			Lab File ID: 215B4020.D			Analyzed: 02/04/21 17:00			
Pentafluorobenzene	1149494	9.857	1217120	9.845	94	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2354754	10.456	2353990	10.438	100	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1352565	13.235	1612072	13.217	84	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1326447	15.491	1366836	15.474	97	50 - 200	0.0170	+/-0.50	
HMPN-MW0008-025.0-20210129 (AE00180-16)			Lab File ID: 215B4022.D			Analyzed: 02/04/21 17:59			
Pentafluorobenzene	1215488	9.862	1217120	9.845	100	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2425935	10.456	2353990	10.438	103	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1382411	13.235	1612072	13.217	86	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1375428	15.497	1366836	15.474	101	50 - 200	0.0230	+/-0.50	
Matrix Spike (1B04020-MS1)			Lab File ID: 215B4023.D			Analyzed: 02/04/21 18:29			
Pentafluorobenzene	1224240	9.857	1217120	9.845	101	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2429321	10.45	2353990	10.438	103	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1479376	13.229	1612072	13.217	92	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1463989	15.491	1366836	15.474	107	50 - 200	0.0170	+/-0.50	
Matrix Spike Dup (1B04020-MSD1)			Lab File ID: 215B4024.D			Analyzed: 02/04/21 18:59			
Pentafluorobenzene	1251293	9.857	1217120	9.845	103	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2574120	10.45	2353990	10.438	109	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1495094	13.229	1612072	13.217	93	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1484776	15.491	1366836	15.474	109	50 - 200	0.0170	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64821
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA64821-CCV1)			Lab File ID: 215B4026.D			Analyzed: 02/04/21 19:58			
Pentafluorobenzene	1293715	9.857	1217120	9.845	106	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2598501	10.45	2353990	10.438	110	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1639441	13.229	1612072	13.217	102	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1519108	15.491	1366836	15.474	111	50 - 200	0.0170	+/-0.50	
LCS (1B04041-BS1)			Lab File ID: 215B4027.D			Analyzed: 02/04/21 20:27			
Pentafluorobenzene	1351558	9.857	1217120	9.845	111	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2773360	10.456	2353990	10.438	118	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1610114	13.229	1612072	13.217	100	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1496937	15.491	1366836	15.474	110	50 - 200	0.0170	+/-0.50	
Instrument RL Check (AA64821-CRL1)			Lab File ID: 215B4028.D			Analyzed: 02/04/21 20:57			
Pentafluorobenzene	1275996	9.857	1217120	9.845	105	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2624030	10.456	2353990	10.438	111	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1530993	13.229	1612072	13.217	95	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1445019	15.491	1366836	15.474	106	50 - 200	0.0170	+/-0.50	
Blank (1B04041-BLK1)			Lab File ID: 215B4031.D			Analyzed: 02/04/21 22:26			
Pentafluorobenzene	1199534	9.857	1217120	9.845	99	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2453816	10.456	2353990	10.438	104	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1404372	13.235	1612072	13.217	87	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1342519	15.491	1366836	15.474	98	50 - 200	0.0170	+/-0.50	
Matrix Spike (1B04041-MS1)			Lab File ID: 215B4032.D			Analyzed: 02/04/21 22:56			
Pentafluorobenzene	1219153	9.857	1217120	9.845	100	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2488311	10.45	2353990	10.438	106	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1517810	13.229	1612072	13.217	94	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1493687	15.491	1366836	15.474	109	50 - 200	0.0170	+/-0.50	
HMPN-MW0024-060.0-20210129 (AE00180-17)			Lab File ID: 215B4036.D			Analyzed: 02/05/21 00:55			
Pentafluorobenzene	1292426	9.863	1217120	9.845	106	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2695366	10.456	2353990	10.438	115	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1533203	13.235	1612072	13.217	95	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1432979	15.491	1366836	15.474	105	50 - 200	0.0170	+/-0.50	
HMPN-MW0035-035.0-20210129 (AE00180-18)			Lab File ID: 215B4037.D			Analyzed: 02/05/21 01:25			
Pentafluorobenzene	1248483	9.863	1217120	9.845	103	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2638675	10.456	2353990	10.438	112	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1501734	13.235	1612072	13.217	93	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1399603	15.497	1366836	15.474	102	50 - 200	0.0230	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64821
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0034-015.0-20210129 (AE00180-19)			Lab File ID: 215B4038.D			Analyzed: 02/05/21 01:54			
Pentafluorobenzene	1202815	9.863	1217120	9.845	99	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2508689	10.456	2353990	10.438	107	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1469083	13.235	1612072	13.217	91	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1389638	15.497	1366836	15.474	102	50 - 200	0.0230	+/-0.50	
HMPN-MW0039-035.0-20210131 (AE00180-20)			Lab File ID: 215B4039.D			Analyzed: 02/05/21 02:24			
Pentafluorobenzene	1171849	9.862	1217120	9.845	96	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2414208	10.456	2353990	10.438	103	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1390675	13.235	1612072	13.217	86	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1341887	15.497	1366836	15.474	98	50 - 200	0.0230	+/-0.50	
HMPN-MW0040-042.5-20210131 (AE00180-21)			Lab File ID: 215B4040.D			Analyzed: 02/05/21 02:54			
Pentafluorobenzene	1166335	9.862	1217120	9.845	96	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2364955	10.456	2353990	10.438	100	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1368132	13.235	1612072	13.217	85	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1346925	15.497	1366836	15.474	99	50 - 200	0.0230	+/-0.50	
HMPN-MW0009-010.0-20210131 (AE00180-22)			Lab File ID: 215B4041.D			Analyzed: 02/05/21 03:23			
Pentafluorobenzene	1143182	9.862	1217120	9.845	94	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2352955	10.456	2353990	10.438	100	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1368339	13.235	1612072	13.217	85	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1310244	15.497	1366836	15.474	96	50 - 200	0.0230	+/-0.50	
HMPN-MW0004-010.0-20210131 (AE00180-23)			Lab File ID: 215B4042.D			Analyzed: 02/05/21 03:53			
Pentafluorobenzene	1165698	9.862	1217120	9.845	96	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2408044	10.456	2353990	10.438	102	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1365623	13.235	1612072	13.217	85	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1340939	15.497	1366836	15.474	98	50 - 200	0.0230	+/-0.50	
HMPN-MW0027-042.5-20210201 (AE00180-24)			Lab File ID: 215B4043.D			Analyzed: 02/05/21 04:23			
Pentafluorobenzene	1227487	9.862	1217120	9.845	101	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2389558	10.456	2353990	10.438	102	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1365719	13.235	1612072	13.217	85	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1344390	15.497	1366836	15.474	98	50 - 200	0.0230	+/-0.50	
HMPN-MW0028-047.5-20210201 (AE00180-25)			Lab File ID: 215B4044.D			Analyzed: 02/05/21 04:52			
Pentafluorobenzene	1208423	9.863	1217120	9.845	99	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2150543	10.456	2353990	10.438	91	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1360253	13.235	1612072	13.217	84	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1338057	15.497	1366836	15.474	98	50 - 200	0.0230	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64821
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0002-035.0-20210201 (AE00180-28)			Lab File ID: 215B4047.D			Analyzed: 02/05/21 06:21			
Pentafluorobenzene	1196717	9.862	1217120	9.845	98	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2475605	10.456	2353990	10.438	105	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1386352	13.235	1612072	13.217	86	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1358758	15.497	1366836	15.474	99	50 - 200	0.0230	+/-0.50	
HMPN-DRUM222803-20210201 (AE00180-29)			Lab File ID: 215B4048.D			Analyzed: 02/05/21 06:51			
Pentafluorobenzene	1189515	9.863	1217120	9.845	98	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2390582	10.456	2353990	10.438	102	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1377443	13.235	1612072	13.217	85	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1377681	15.497	1366836	15.474	101	50 - 200	0.0230	+/-0.50	
Calibration Check (AA64821-CCV2)			Lab File ID: 215B5003.D			Analyzed: 02/05/21 08:55			
Pentafluorobenzene	1433703	9.862	1217120	9.845	118	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2851329	10.456	2353990	10.438	121	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1754524	13.235	1612072	13.217	109	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1532689	15.497	1366836	15.474	112	50 - 200	0.0230	+/-0.50	
Matrix Spike Dup (1B04041-MSD1)			Lab File ID: 215B5004.D			Analyzed: 02/05/21 09:25			
Pentafluorobenzene	1389215	9.862	1217120	9.845	114	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2814121	10.456	2353990	10.438	120	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1673313	13.235	1612072	13.217	104	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1519337	15.497	1366836	15.474	111	50 - 200	0.0230	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64833
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA64833-CCV1)			Lab File ID: 212B5002.D			Analyzed: 02/05/21 08:20			
Pentafluorobenzene	244296	11.48	270209	11.46	90	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	457783	12.03	483052	12.01	95	50 - 200	0.0200	+/-0.50	
Chlorobenzene-d5	236601	14.62	235561	14.61	100	50 - 200	0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	162124	16.99	156580	16.98	104	50 - 200	0.0100	+/-0.50	
LCS (1B05008-BS1)			Lab File ID: 212B5003.D			Analyzed: 02/05/21 08:55			
Pentafluorobenzene	244069	11.48	270209	11.46	90	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	453646	12.03	483052	12.01	94	50 - 200	0.0200	+/-0.50	
Chlorobenzene-d5	228231	14.62	235561	14.61	97	50 - 200	0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	154910	16.99	156580	16.98	99	50 - 200	0.0100	+/-0.50	
Matrix Spike (1B05008-MS1)			Lab File ID: 212B5004.D			Analyzed: 02/05/21 09:35			
Pentafluorobenzene	243922	11.48	270209	11.46	90	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	453297	12.03	483052	12.01	94	50 - 200	0.0200	+/-0.50	
Chlorobenzene-d5	230097	14.63	235561	14.61	98	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	156245	16.99	156580	16.98	100	50 - 200	0.0100	+/-0.50	
Matrix Spike Dup (1B05008-MSD1)			Lab File ID: 212B5005.D			Analyzed: 02/05/21 10:04			
Pentafluorobenzene	237657	11.48	270209	11.46	88	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	440198	12.03	483052	12.01	91	50 - 200	0.0200	+/-0.50	
Chlorobenzene-d5	222229	14.63	235561	14.61	94	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	147097	16.99	156580	16.98	94	50 - 200	0.0100	+/-0.50	
Blank (1B05008-BLK1)			Lab File ID: 212B5009.D			Analyzed: 02/05/21 11:59			
Pentafluorobenzene	234982	11.48	270209	11.46	87	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	429848	12.03	483052	12.01	89	50 - 200	0.0200	+/-0.50	
Chlorobenzene-d5	218184	14.62	235561	14.61	93	50 - 200	0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	144694	17	156580	16.98	92	50 - 200	0.0200	+/-0.50	
HMPN-MW0033-047.5-20210129 (AE00180-15RE1)			Lab File ID: 212B5011.D			Analyzed: 02/05/21 12:56			
Pentafluorobenzene	228769	11.48	270209	11.46	85	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	424534	12.04	483052	12.01	88	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	213521	14.63	235561	14.61	91	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	140182	17	156580	16.98	90	50 - 200	0.0200	+/-0.50	
HMPN-MW0002-035.0-20210201 (AE00180-28RE1)			Lab File ID: 212B5012.D			Analyzed: 02/05/21 13:25			
Pentafluorobenzene	227959	11.49	270209	11.46	84	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	417811	12.04	483052	12.01	86	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	211871	14.63	235561	14.61	90	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	139704	17	156580	16.98	89	50 - 200	0.0200	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64833
Instrument: OVGCMS2
Matrix: Water
Calibration: 2102033

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0041-035.0-20210128 (AE00180-03RE1)			Lab File ID: 212B5013.D			Analyzed: 02/05/21 13:54			
Pentafluorobenzene	228312	11.49	270209	11.46	84	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	422708	12.03	483052	12.01	88	50 - 200	0.0200	+/-0.50	
Chlorobenzene-d5	211162	14.63	235561	14.61	90	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	136325	17	156580	16.98	87	50 - 200	0.0200	+/-0.50	
HMPN-MW0037-010.0-20210129 (AE00180-05RE1)			Lab File ID: 212B5014.D			Analyzed: 02/05/21 14:23			
Pentafluorobenzene	223623	11.48	270209	11.46	83	50 - 200	0.0200	+/-0.50	
1,4-Difluorobenzene	414444	12.04	483052	12.01	86	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	206398	14.63	235561	14.61	88	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	133311	17	156580	16.98	85	50 - 200	0.0200	+/-0.50	
HMPN-MW0038-020.0-20210129 (AE00180-06RE1)			Lab File ID: 212B5015.D			Analyzed: 02/05/21 14:51			
Pentafluorobenzene	233178	11.49	270209	11.46	86	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	430268	12.04	483052	12.01	89	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	216243	14.63	235561	14.61	92	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	143648	17.01	156580	16.98	92	50 - 200	0.0300	+/-0.50	
HMPN-MW0016-010.0-20210201 (AE00180-26RE1)			Lab File ID: 212B5016.D			Analyzed: 02/05/21 15:20			
Pentafluorobenzene	231489	11.49	270209	11.46	86	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	430295	12.04	483052	12.01	89	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	218296	14.63	235561	14.61	93	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	145622	17	156580	16.98	93	50 - 200	0.0200	+/-0.50	
HMPN-MW0045-030.0-20210201 (AE00180-27RE1)			Lab File ID: 212B5017.D			Analyzed: 02/05/21 15:49			
Pentafluorobenzene	233916	11.49	270209	11.46	87	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	432158	12.04	483052	12.01	89	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	217606	14.63	235561	14.61	92	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	142716	17.01	156580	16.98	91	50 - 200	0.0300	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64837
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA64837-CCV1)			Lab File ID: 215B5003.D			Analyzed: 02/05/21 08:55			
Pentafluorobenzene	1433703	9.862	1217120	9.845	118	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2851329	10.456	2353990	10.438	121	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1754524	13.235	1612072	13.217	109	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1532689	15.497	1366836	15.474	112	50 - 200	0.0230	+/-0.50	
LCS (1B05029-BS1)			Lab File ID: 215B5005.D			Analyzed: 02/05/21 09:55			
Pentafluorobenzene	1403144	9.863	1217120	9.845	115	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2918098	10.456	2353990	10.438	124	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1740615	13.235	1612072	13.217	108	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1551647	15.497	1366836	15.474	114	50 - 200	0.0230	+/-0.50	
LCS Dup (1B05029-BSD1)			Lab File ID: 215B5006.D			Analyzed: 02/05/21 10:25			
Pentafluorobenzene	1362429	9.862	1217120	9.845	112	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2888423	10.456	2353990	10.438	123	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1725791	13.235	1612072	13.217	107	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1561950	15.497	1366836	15.474	114	50 - 200	0.0230	+/-0.50	
Blank (1B05029-BLK1)			Lab File ID: 215B5008.D			Analyzed: 02/05/21 11:24			
Pentafluorobenzene	1327701	9.863	1217120	9.845	109	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2812736	10.456	2353990	10.438	119	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1652339	13.235	1612072	13.217	102	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1515326	15.497	1366836	15.474	111	50 - 200	0.0230	+/-0.50	
Instrument RL Check (AA64837-CRL1)			Lab File ID: 215B5009.D			Analyzed: 02/05/21 11:53			
Pentafluorobenzene	1311528	9.863	1217120	9.845	108	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2733912	10.456	2353990	10.438	116	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1652764	13.235	1612072	13.217	103	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1510157	15.497	1366836	15.474	110	50 - 200	0.0230	+/-0.50	
HMPN-MW0035-035.0-20210129 (AE00180-18RE1)			Lab File ID: 215B5010.D			Analyzed: 02/05/21 12:23			
Pentafluorobenzene	1301216	9.862	1217120	9.845	107	50 - 200	0.0170	+/-0.50	
1,4-Difluorobenzene	2638883	10.456	2353990	10.438	112	50 - 200	0.0180	+/-0.50	
Chlorobenzene-d5	1521247	13.235	1612072	13.217	94	50 - 200	0.0180	+/-0.50	
1,4-Dichlorobenzene-d4	1422637	15.497	1366836	15.474	104	50 - 200	0.0230	+/-0.50	
HMPN-MW0034-015.0-20210129 (AE00180-19RE1)			Lab File ID: 215B5011.D			Analyzed: 02/05/21 12:53			
Pentafluorobenzene	1217200	9.863	1217120	9.845	100	50 - 200	0.0180	+/-0.50	
1,4-Difluorobenzene	2446801	10.462	2353990	10.438	104	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1419980	13.241	1612072	13.217	88	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1365299	15.497	1366836	15.474	100	50 - 200	0.0230	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64837
Instrument: OVGCMS5
Matrix: Water
Calibration: 2011113

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0035-035.0-20210129 (AE00180-18RE2)			Lab File ID: 215B5012.D			Analyzed: 02/05/21 13:22			
Pentafluorobenzene	1236391	9.868	1217120	9.845	102	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2433174	10.462	2353990	10.438	103	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1431100	13.241	1612072	13.217	89	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1339352	15.503	1366836	15.474	98	50 - 200	0.0290	+/-0.50	
HMPN-MW0039-035.0-20210131 (AE00180-20RE1)			Lab File ID: 215B5013.D			Analyzed: 02/05/21 13:52			
Pentafluorobenzene	1218553	9.868	1217120	9.845	100	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2459794	10.462	2353990	10.438	104	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1415039	13.241	1612072	13.217	88	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1371545	15.503	1366836	15.474	100	50 - 200	0.0290	+/-0.50	
HMPN-MW0040-042.5-20210131 (AE00180-21RE1)			Lab File ID: 215B5014.D			Analyzed: 02/05/21 14:21			
Pentafluorobenzene	1225894	9.868	1217120	9.845	101	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2468436	10.462	2353990	10.438	105	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1373917	13.241	1612072	13.217	85	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1368193	15.503	1366836	15.474	100	50 - 200	0.0290	+/-0.50	
HMPN-MW0009-010.0-20210131 (AE00180-22RE1)			Lab File ID: 215B5015.D			Analyzed: 02/05/21 14:51			
Pentafluorobenzene	1301842	9.868	1217120	9.845	107	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2645394	10.462	2353990	10.438	112	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1519218	13.241	1612072	13.217	94	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1381923	15.503	1366836	15.474	101	50 - 200	0.0290	+/-0.50	
HMPN-MW0027-042.5-20210201 (AE00180-24RE1)			Lab File ID: 215B5016.D			Analyzed: 02/05/21 15:21			
Pentafluorobenzene	1249348	9.868	1217120	9.845	103	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2503361	10.462	2353990	10.438	106	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1382530	13.241	1612072	13.217	86	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1385695	15.503	1366836	15.474	101	50 - 200	0.0290	+/-0.50	
HMPN-MW0028-047.5-20210201 (AE00180-25RE1)			Lab File ID: 215B5017.D			Analyzed: 02/05/21 15:50			
Pentafluorobenzene	1214526	9.868	1217120	9.845	100	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2471006	10.462	2353990	10.438	105	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1419603	13.241	1612072	13.217	88	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1405346	15.503	1366836	15.474	103	50 - 200	0.0290	+/-0.50	
HMPN-DRUM222803-20210201 (AE00180-29RE1)			Lab File ID: 215B5018.D			Analyzed: 02/05/21 16:20			
Pentafluorobenzene	1261032	9.868	1217120	9.845	104	50 - 200	0.0230	+/-0.50	
1,4-Difluorobenzene	2472129	10.462	2353990	10.438	105	50 - 200	0.0240	+/-0.50	
Chlorobenzene-d5	1411018	13.241	1612072	13.217	88	50 - 200	0.0240	+/-0.50	
1,4-Dichlorobenzene-d4	1398266	15.503	1366836	15.474	102	50 - 200	0.0290	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA63653		
Calibration:	2011113	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA63653-TUN1	205KN002.D	11/19/20 08:07
Cal Standard	AA63653-CAL1	205KN003.D	11/19/20 08:46
Cal Standard	AA63653-CAL2	205KN004.D	11/19/20 09:16
Cal Standard	AA63653-CAL3	205KN005.D	11/19/20 09:47
Cal Standard	AA63653-CAL4	205KN006.D	11/19/20 10:18
Cal Standard	AA63653-CAL5	205KN007.D	11/19/20 10:49
Cal Standard	AA63653-CAL6	205KN008.D	11/19/20 11:20
Cal Standard	AA63653-CAL7	205KN009.D	11/19/20 11:51
Cal Standard	AA63653-CAL8	205KN010.D	11/19/20 12:22
Secondary Cal Check	AA63653-SCV1	205KN012.D	11/19/20 13:24

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA64808		
Calibration:	2102033	Instrument:	OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA64808-TUN1	212B4001.D	02/04/21 07:46
Cal Standard	AA64808-CAL1	212B4002.D	02/04/21 08:28
Cal Standard	AA64808-CAL2	212B4003.D	02/04/21 08:57
Cal Standard	AA64808-CAL3	212B4004.D	02/04/21 09:26
Cal Standard	AA64808-CAL4	212B4005.D	02/04/21 09:54
Cal Standard	AA64808-CAL5	212B4006.D	02/04/21 10:23
Cal Standard	AA64808-CAL6	212B4007.D	02/04/21 10:52
Cal Standard	AA64808-CAL7	212B4008.D	02/04/21 11:20
Cal Standard	AA64808-CAL8	212B4009.D	02/04/21 11:49
Secondary Cal Check	AA64808-SCV1	212B4012.D	02/04/21 13:15

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64811
Calibration: 2011113
Instrument: OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA64811-CCV1	215B4002.D	02/04/21 08:08
LCS	1B04020-BS1	215B4003.D	02/04/21 08:38
Blank	1B04020-BLK1	215B4005.D	02/04/21 09:37
Instrument RL Check	AA64811-CRL1	215B4006.D	02/04/21 10:06
HMPN-MW0043-035.0-20210128	AE00180-01	215B4007.D	02/04/21 10:36
HMPN-MW0044-045.0-20210128	AE00180-02	215B4008.D	02/04/21 11:06
HMPN-MW0041-035.0-20210128	AE00180-03	215B4009.D	02/04/21 11:35
HMPN-MW0042-042.5-20210128	AE00180-04	215B4010.D	02/04/21 12:05
HMPN-MW0037-010.0-20210129	AE00180-05	215B4011.D	02/04/21 12:34
HMPN-MW0038-020.0-20210129	AE00180-06	215B4012.D	02/04/21 13:04
HMPN-MW0046-015.0-20210129	AE00180-07	215B4013.D	02/04/21 13:33
HMPN-MW0047-025.0-20210129	AE00180-08	215B4014.D	02/04/21 14:03
HMPN-MW0036-015.0-20210129	AE00180-09	215B4015.D	02/04/21 14:33
HMPN-MW0011-025.0-20210129	AE00180-10	215B4016.D	02/04/21 15:02
HMPN-MW0029-015.0-20210129	AE00180-11	215B4017.D	02/04/21 15:32
HMPN-MW0030-025.0-20210129	AE00180-12	215B4018.D	02/04/21 16:01
HMPN-MW0031-035.0-20210129	AE00180-13	215B4019.D	02/04/21 16:31
HMPN-MW0032-042.5-20210129	AE00180-14	215B4020.D	02/04/21 17:00
HMPN-MW0008-025.0-20210129	AE00180-16	215B4022.D	02/04/21 17:59
HMPN-MW0043-035.0-20210128	1B04020-MS1	215B4023.D	02/04/21 18:29
HMPN-MW0043-035.0-20210128	1B04020-MSD1	215B4024.D	02/04/21 18:59

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64821
Calibration: 2011113
Instrument: OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA64821-CCV1	215B4026.D	02/04/21 19:58
LCS	1B04041-BS1	215B4027.D	02/04/21 20:27
Instrument RL Check	AA64821-CRL1	215B4028.D	02/04/21 20:57
Blank	1B04041-BLK1	215B4031.D	02/04/21 22:26
DGRS Influent	1B04041-MS1	215B4032.D	02/04/21 22:56
HMPN-MW0024-060.0-20210129	AE00180-17	215B4036.D	02/05/21 00:55
HMPN-MW0035-035.0-20210129	AE00180-18	215B4037.D	02/05/21 01:25
HMPN-MW0034-015.0-20210129	AE00180-19	215B4038.D	02/05/21 01:54
HMPN-MW0039-035.0-20210131	AE00180-20	215B4039.D	02/05/21 02:24
HMPN-MW0040-042.5-20210131	AE00180-21	215B4040.D	02/05/21 02:54
HMPN-MW0009-010.0-20210131	AE00180-22	215B4041.D	02/05/21 03:23
HMPN-MW0004-010.0-20210131	AE00180-23	215B4042.D	02/05/21 03:53
HMPN-MW0027-042.5-20210201	AE00180-24	215B4043.D	02/05/21 04:23
HMPN-MW0028-047.5-20210201	AE00180-25	215B4044.D	02/05/21 04:52
HMPN-MW0002-035.0-20210201	AE00180-28	215B4047.D	02/05/21 06:21
HMPN-DRUM222803-20210201	AE00180-29	215B4048.D	02/05/21 06:51
Calibration Check	AA64821-CCV2	215B5003.D	02/05/21 08:55
DGRS Influent	1B04041-MSD1	215B5004.D	02/05/21 09:25

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA64833		
Calibration:	2102033	Instrument:	OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA64833-TUN1	212B5001.D	02/05/21 07:51
Calibration Check	AA64833-CCV1	212B5002.D	02/05/21 08:20
LCS	1B05008-BS1	212B5003.D	02/05/21 08:55
MW-35	1B05008-MS1	212B5004.D	02/05/21 09:35
MW-35	1B05008-MSD1	212B5005.D	02/05/21 10:04
Blank	1B05008-BLK1	212B5009.D	02/05/21 11:59
HMPN-MW0033-047.5-20210129	AE00180-15RE1	212B5011.D	02/05/21 12:56
HMPN-MW0002-035.0-20210201	AE00180-28RE1	212B5012.D	02/05/21 13:25
HMPN-MW0041-035.0-20210128	AE00180-03RE1	212B5013.D	02/05/21 13:54
HMPN-MW0037-010.0-20210129	AE00180-05RE1	212B5014.D	02/05/21 14:23
HMPN-MW0038-020.0-20210129	AE00180-06RE1	212B5015.D	02/05/21 14:51
HMPN-MW0016-010.0-20210201	AE00180-26RE1	212B5016.D	02/05/21 15:20
HMPN-MW0045-030.0-20210201	AE00180-27RE1	212B5017.D	02/05/21 15:49

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA64837		
Calibration:	2011113	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA64837-CCV1	215B5003.D	02/05/21 08:55
LCS	1B05029-BS1	215B5005.D	02/05/21 09:55
LCS Dup	1B05029-BSD1	215B5006.D	02/05/21 10:25
Blank	1B05029-BLK1	215B5008.D	02/05/21 11:24
Instrument RL Check	AA64837-CRL1	215B5009.D	02/05/21 11:53
HMPN-MW0035-035.0-20210129	AE00180-18RE1	215B5010.D	02/05/21 12:23
HMPN-MW0034-015.0-20210129	AE00180-19RE1	215B5011.D	02/05/21 12:53
HMPN-MW0035-035.0-20210129	AE00180-18RE2	215B5012.D	02/05/21 13:22
HMPN-MW0039-035.0-20210131	AE00180-20RE1	215B5013.D	02/05/21 13:52
HMPN-MW0040-042.5-20210131	AE00180-21RE1	215B5014.D	02/05/21 14:21
HMPN-MW0009-010.0-20210131	AE00180-22RE1	215B5015.D	02/05/21 14:51
HMPN-MW0027-042.5-20210201	AE00180-24RE1	215B5016.D	02/05/21 15:21
HMPN-MW0028-047.5-20210201	AE00180-25RE1	215B5017.D	02/05/21 15:50
HMPN-DRUM222803-20210201	AE00180-29RE1	215B5018.D	02/05/21 16:20

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	205KN002.D	Injection Date:	11/19/20
Instrument ID:	OVGCMS5	Injection Time:	08:07
Sequence:	AA63653	Lab Sample ID:	AA63653-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	155	PASS
96	5 - 9% of 95	7.22	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	64.6	PASS
175	5 - 9% of 174	5.13	PASS
176	95 - 105% of 174	97.9	PASS
177	5 - 10% of 176	5.82	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	212B4001.D	Injection Date:	02/04/21
Instrument ID:	OVGCMS2	Injection Time:	07:46
Sequence:	AA64808	Lab Sample ID:	AA64808-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	132	PASS
96	5 - 9% of 95	6.62	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	75.7	PASS
175	5 - 9% of 174	7.26	PASS
176	95 - 105% of 174	96.3	PASS
177	5 - 10% of 176	6.87	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	212B5001.D	Injection Date:	02/05/21
Instrument ID:	OVGCMS2	Injection Time:	07:51
Sequence:	AA64833	Lab Sample ID:	AA64833-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	137	PASS
96	5 - 9% of 95	6.73	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	72.9	PASS
175	5 - 9% of 174	7.43	PASS
176	95 - 105% of 174	97.9	PASS
177	5 - 10% of 176	6.54	PASS

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B4002.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64811	Injection Date:	02/04/21
Lab Sample ID:	AA64811-CCV1	Injection Time:	08:08

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	19	0.6454795	0.5999384		-7.1	20	
Chloromethane	A	20.0	10	0.7429916	0.3821694		-49	20	*
Vinyl chloride	A	20.0	16	0.6032767	0.4903667		-19	20	
Bromomethane	A	20.0	18	0.2658711	0.1489721		-7.7	20	
Chloroethane	A	20.0	20	0.3233106	0.2628734		-1	20	
Trichlorofluoromethane	A	20.0	19	0.739293	0.7126299		-3.6	20	
Freon 113	A	50.0	46	0.2891047	0.2674124		-7.5	20	
Acetone	A	250	180	0.1178043	8.686726E-02		-26	20	*
1,1-Dichloroethene	A	50.0	46	0.4316853	0.3963131		-8.2	20	
Carbon disulfide	A	250	240	1.413985	1.365541		-3.4	20	
Methylene Chloride	A	50.0	49	0.5959536	0.5104691		-2.5	20	
Methyl-tert-Butyl Ether	A	50.0	46	1.264184	1.152908		-8.8	20	
trans-1,2-Dichloroethene	A	50.0	47	0.4994822	0.4734503		-5.2	20	
cis-1,2-Dichloroethene	A	50.0	50	0.5290745	0.5278175		-0.2	20	
1,1-Dichloroethane	A	50.0	41	1.027426	0.8375196		-19	20	
2-Butanone	A	250	230	5.654494E-02	5.206831E-02		-8.9	20	
Chloroform	A	50.0	48	0.9811366	0.9413496		-4.1	20	
1,1,1-Trichloroethane	A	50.0	48	0.8099887	0.7818172		-3.5	20	
Methyl acetate	A	50.0	28	0.4097982	0.2067455		-44	20	*
Cyclohexane	A	50.0	31	1.084118	0.7005722		-37	20	*
Carbon Tetrachloride	A	50.0	45	0.3247415	0.3394686		-9.4	20	
1,2-Dichloroethane	A	50.0	40	0.3947961	0.334857		-20	20	
Benzene	A	50.0	43	1.143102	0.9744619		-15	20	
Trichloroethene	A	50.0	51	0.2308676	0.2362768		2.3	20	
1,2-Dichloropropane	A	50.0	36	0.3327441	0.2417		-27	20	*
Bromodichloromethane	A	50.0	44	0.3384447	0.3294946		-11	20	
4-Methyl-2-pentanone	A	250	260	3.573082E-02	3.469409E-02		2.3	20	
2-Hexanone	A	250	190	0.1672315	0.1165393		-30	20	*
cis-1,3-Dichloropropene	A	50.0	42	0.4465376	0.4151966		-17	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B4002.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64811	Injection Date:	02/04/21
Lab Sample ID:	AA64811-CCV1	Injection Time:	08:08

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	54	1.066872	1.148301		7.6	20	
trans-1,3-Dichloropropene	A	50.0	48	0.5606682	0.6091596		-4.1	20	
1,1,2-Trichloroethane	A	50.0	55	0.3401845	0.3936466		9.2	20	
Tetrachloroethene	A	50.0	51	0.2798513	0.2983349		1.7	20	
Dibromochloromethane	A	50.0	58	0.2803526	0.3889667		15	20	
1,2-Dibromoethane	A	50.0	57	0.3355065	0.3855699		15	20	
Chlorobenzene	A	50.0	60	1.074819	1.289321		20	20	
Ethylbenzene	A	50.0	55	0.6263821	0.7076585		9.1	20	
m,p-Xylenes	A	100	120	0.7525839	0.90526		20	20	
o-Xylene	A	50.0	62	0.7718014	0.9504156		23	20	*
Bromoform	A	50.0	49	0.1740972	0.189056		-1.6	20	
Styrene	A	50.0	64	1.260238	1.620434		29	20	*
Isopropylbenzene	A	50.0	61	2.031474	2.480165		22	20	*
1,1,2,2-Tetrachloroethane	A	50.0	56	0.5037271	0.5658589		12	20	
1,2,4-Trichlorobenzene	A	50.0	40	0.4097947	0.3792614		-21	20	*
1,3-Dichlorobenzene	A	50.0	59	1.008577	1.198789		19	20	
1,4-Dichlorobenzene	A	50.0	56	1.081206	1.20759		12	20	
1,2-Dichlorobenzene	A	50.0	57	0.9520015	1.084527		14	20	
1,2-Dibromo-3-chloropropane	A	50.0	49	7.396002E-02	7.641139E-02		-2.5	20	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B4026.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64821	Injection Date:	02/04/21
Lab Sample ID:	AA64821-CCV1	Injection Time:	19:58

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	18	0.6454795	0.5775982		-11	20	
Chloromethane	A	20.0	11	0.7429916	0.3943855		-47	20	*
Vinyl chloride	A	20.0	15	0.6032767	0.4607062		-24	20	*
Bromomethane	A	20.0	27	0.2658711	0.2279134		36	20	*
Chloroethane	A	20.0	19	0.3233106	0.2533035		-4.6	20	
Trichlorofluoromethane	A	20.0	18	0.739293	0.6736665		-8.9	20	
Freon 113	A	50.0	45	0.2891047	0.25856		-11	20	
Acetone	A	250	170	0.1178043	0.0778224		-34	20	*
1,1-Dichloroethene	A	50.0	44	0.4316853	0.3811775		-12	20	
Carbon disulfide	A	250	230	1.413985	1.303153		-7.8	20	
Methylene Chloride	A	50.0	40	0.5959536	0.41925		-20	20	
Methyl-tert-Butyl Ether	A	50.0	42	1.264184	1.05225		-17	20	
trans-1,2-Dichloroethene	A	50.0	43	0.4994822	0.4297283		-14	20	
cis-1,2-Dichloroethene	A	50.0	47	0.5290745	0.4971126		-6	20	
1,1-Dichloroethane	A	50.0	38	1.027426	0.7747116		-25	20	*
2-Butanone	A	250	190	5.654494E-02	4.433295E-02		-22	20	*
Chloroform	A	50.0	45	0.9811366	0.8835315		-9.9	20	
1,1,1-Trichloroethane	A	50.0	45	0.8099887	0.7342854		-9.3	20	
Methyl acetate	A	50.0	19	0.4097982	0.1411006		-62	20	*
Cyclohexane	A	50.0	29	1.084118	0.6574006		-41	20	*
Carbon Tetrachloride	A	50.0	43	0.3247415	0.3241146		-14	20	
1,2-Dichloroethane	A	50.0	38	0.3947961	0.3146834		-25	20	*
Benzene	A	50.0	41	1.143102	0.9291776		-19	20	
Trichloroethene	A	50.0	50	0.2308676	0.2306487		-0.09	20	
1,2-Dichloropropane	A	50.0	34	0.3327441	0.2272106		-32	20	*
Bromodichloromethane	A	50.0	43	0.3384447	0.3177659		-14	20	
4-Methyl-2-pentanone	A	250	230	3.573082E-02	3.157728E-02		-6.9	20	
2-Hexanone	A	250	170	0.1672315	0.1029873		-38	20	*
cis-1,3-Dichloropropene	A	50.0	39	0.4465376	0.3849677		-23	20	*

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B4026.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64821	Injection Date:	02/04/21
Lab Sample ID:	AA64821-CCV1	Injection Time:	19:58

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	50	1.066872	1.062671		-0.4	20	
trans-1,3-Dichloropropene	A	50.0	44	0.5606682	0.5623533		-11	20	
1,1,2-Trichloroethane	A	50.0	50	0.3401845	0.3607071		0.060	20	
Tetrachloroethene	A	50.0	46	0.2798513	0.2715175		-7.5	20	
Dibromochloromethane	A	50.0	52	0.2803526	0.347846		4.6	20	
1,2-Dibromoethane	A	50.0	50	0.3355065	0.3325859		-0.9	20	
Chlorobenzene	A	50.0	56	1.074819	1.212492		13	20	
Ethylbenzene	A	50.0	53	0.6263821	0.6932607		6.9	20	
m,p-Xylenes	A	100	110	0.7525839	0.8576631		14	20	
o-Xylene	A	50.0	58	0.7718014	0.8917485		16	20	
Bromoform	A	50.0	48	0.1740972	0.1830868		-4.2	20	
Styrene	A	50.0	60	1.260238	1.50702		20	20	
Isopropylbenzene	A	50.0	57	2.031474	2.329723		15	20	
1,1,2,2-Tetrachloroethane	A	50.0	50	0.5037271	0.5002461		-0.7	20	
1,2,4-Trichlorobenzene	A	50.0	36	0.4097947	0.341875		-28	20	*
1,3-Dichlorobenzene	A	50.0	55	1.008577	1.105226		9.6	20	
1,4-Dichlorobenzene	A	50.0	53	1.081206	1.136302		5.1	20	
1,2-Dichlorobenzene	A	50.0	52	0.9520015	0.9948542		4.5	20	
1,2-Dibromo-3-chloropropane	A	50.0	41	7.396002E-02	6.311006E-02		-19	20	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B5003.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64821	Injection Date:	02/05/21
Lab Sample ID:	AA64821-CCV2	Injection Time:	08:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	18	0.6454795	0.5832048		-9.6	20	
Chloromethane	A	20.0	12	0.7429916	0.4455839		-40	20	*
Vinyl chloride	A	20.0	16	0.6032767	0.4950398		-18	20	
Bromomethane	A	20.0	19	0.2658711	0.1513145		-6.4	20	
Chloroethane	A	20.0	19	0.3233106	0.250003		-5.8	20	
Trichlorofluoromethane	A	20.0	19	0.739293	0.711155		-3.8	20	
Freon 113	A	50.0	44	0.2891047	0.2534019		-12	20	
Acetone	A	250	160	0.1178043	7.554159E-02		-36	20	*
1,1-Dichloroethene	A	50.0	45	0.4316853	0.3924899		-9.1	20	
Carbon disulfide	A	250	230	1.413985	1.279563		-9.5	20	
Methylene Chloride	A	50.0	41	0.5959536	0.4254061		-19	20	
Methyl-tert-Butyl Ether	A	50.0	40	1.264184	1.005044		-21	20	*
trans-1,2-Dichloroethene	A	50.0	42	0.4994822	0.4209247		-16	20	
cis-1,2-Dichloroethene	A	50.0	46	0.5290745	0.4863106		-8.1	20	
1,1-Dichloroethane	A	50.0	37	1.027426	0.7553301		-27	20	*
2-Butanone	A	250	200	5.654494E-02	4.518132E-02		-21	20	*
Chloroform	A	50.0	41	0.9811366	0.8024263		-18	20	
1,1,1-Trichloroethane	A	50.0	41	0.8099887	0.6671221		-18	20	
Methyl acetate	A	50.0	25	0.4097982	0.1810312		-51	20	*
Cyclohexane	A	50.0	30	1.084118	0.6722703		-40	20	*
Carbon Tetrachloride	A	50.0	36	0.3247415	0.2680764		-28	20	*
1,2-Dichloroethane	A	50.0	34	0.3947961	0.2851193		-32	20	*
Benzene	A	50.0	40	1.143102	0.9057741		-21	20	*
Trichloroethene	A	50.0	49	0.2308676	0.2270941		-1.6	20	
1,2-Dichloropropane	A	50.0	34	0.3327441	0.2290921		-31	20	*
Bromodichloromethane	A	50.0	42	0.3384447	0.3128138		-15	20	
4-Methyl-2-pentanone	A	250	220	3.573082E-02	2.926481E-02		-14	20	
2-Hexanone	A	250	170	0.1672315	0.102295		-39	20	*
cis-1,3-Dichloropropene	A	50.0	41	0.4465376	0.4066237		-18	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B5003.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64821	Injection Date:	02/05/21
Lab Sample ID:	AA64821-CCV2	Injection Time:	08:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	49	1.066872	1.052798		-1.3	20	
trans-1,3-Dichloropropene	A	50.0	44	0.5606682	0.5634451		-11	20	
1,1,2-Trichloroethane	A	50.0	49	0.3401845	0.3523833		-2.2	20	
Tetrachloroethene	A	50.0	46	0.2798513	0.2694241		-8.2	20	
Dibromochloromethane	A	50.0	52	0.2803526	0.3430013		3.3	20	
1,2-Dibromoethane	A	50.0	51	0.3355065	0.3453848		2.9	20	
Chlorobenzene	A	50.0	55	1.074819	1.19247		11	20	
Ethylbenzene	A	50.0	53	0.6263821	0.6868872		5.9	20	
m,p-Xylenes	A	100	110	0.7525839	0.8398742		12	20	
o-Xylene	A	50.0	56	0.7718014	0.8623917		12	20	
Bromoform	A	50.0	45	0.1740972	0.1718221		-9.3	20	
Styrene	A	50.0	60	1.260238	1.501755		19	20	
Isopropylbenzene	A	50.0	55	2.031474	2.235197		10	20	
1,1,2,2-Tetrachloroethane	A	50.0	49	0.5037271	0.4982069		-1.1	20	
1,2,4-Trichlorobenzene	A	50.0	37	0.4097947	0.3580211		-25	20	*
1,3-Dichlorobenzene	A	50.0	56	1.008577	1.123075		11	20	
1,4-Dichlorobenzene	A	50.0	52	1.081206	1.121205		3.7	20	
1,2-Dichlorobenzene	A	50.0	52	0.9520015	0.9952763		4.5	20	
1,2-Dibromo-3-chloropropane	A	50.0	43	7.396002E-02	6.638529E-02		-15	20	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2102033
Lab File ID:	212B5002.D	Calibration Date:	02/05/21 09:02
Sequence:	AA64833	Injection Date:	02/05/21
Lab Sample ID:	AA64833-CCV1	Injection Time:	08:20

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	50.0	48	1.054413	0.9869871		-4.5	20	
Chloromethane	A	50.0	46	1.003268	0.9212922		-8.2	20	
Vinyl chloride	A	50.0	50	0.9128604	0.9184678		0.60	20	
Bromomethane	A	50.0	67	0.5607726	0.4395651		35	20	*
Chloroethane	A	50.0	56	0.5053238	0.5020835		13	20	
Trichlorofluoromethane	A	50.0	53	0.9153286	0.9616203		5.1	20	
Freon 113	A	50.0	53	0.5252336	0.5528048		5.2	20	
Acetone	A	250	280	0.1217703	0.1234633		12	20	
1,1-Dichloroethene	A	50.0	49	0.5294919	0.5150187		-2.6	20	
Carbon disulfide	A	250	240	2.00533	1.930074		-3.8	20	
Methylene Chloride	A	50.0	50	0.6476308	0.5969725		-0.2	20	
Methyl-tert-Butyl Ether	A	50.0	53	1.312879	1.383093		5.3	20	
trans-1,2-Dichloroethene	A	50.0	49	0.5934929	0.5794569		-2.4	20	
cis-1,2-Dichloroethene	A	50.0	51	0.6402571	0.6532076		2.0	20	
1,1-Dichloroethane	A	50.0	52	1.147441	1.195722		4.2	20	
2-Butanone	A	250	270	4.359378E-02	4.267937E-02		10	20	
Chloroform	A	50.0	51	1.084474	1.111107		2.5	20	
1,1,1-Trichloroethane	A	50.0	51	0.8134746	0.8306931		2.1	20	
Methyl acetate	A	50.0	51	8.201479E-02	7.135606E-02		2.0	20	
Cyclohexane	A	50.0	53	0.9589924	1.016071		6.0	20	
Carbon Tetrachloride	A	50.0	50	0.4519301	0.456238		1.0	20	
1,2-Dichloroethane	A	50.0	49	0.4235912	0.4174467		-1.5	20	
Benzene	A	50.0	49	1.215592	1.193397		-1.8	20	
Trichloroethene	A	50.0	49	0.3303171	0.3248351		-1.7	20	
1,2-Dichloropropane	A	50.0	50	0.3972719	0.379243		0.70	20	
Bromodichloromethane	A	50.0	51	0.4774664	0.4594426		1.3	20	
4-Methyl-2-pentanone	A	250	270	3.231915E-02	3.085348E-02		7.3	20	
2-Hexanone	A	250	270	0.1710998	0.1741135		9.0	20	
cis-1,3-Dichloropropene	A	50.0	50	0.6050803	0.6098588		0.80	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2102033
Lab File ID:	212B5002.D	Calibration Date:	02/05/21 09:02
Sequence:	AA64833	Injection Date:	02/05/21
Lab Sample ID:	AA64833-CCV1	Injection Time:	08:20

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	50.0	48	1.447043	1.402627		-3.1	20
trans-1,3-Dichloropropene	A	50.0	49	0.935145	0.9198228		-1.6	20
1,1,2-Trichloroethane	A	50.0	48	0.4686471	0.4537343		-3.2	20
Tetrachloroethene	A	50.0	49	0.4322202	0.4271241		-1.2	20
Dibromochloromethane	A	50.0	50	0.6477466	0.6472754		-0.07	20
1,2-Dibromoethane	A	50.0	51	0.4889192	0.5027155		2.8	20
Chlorobenzene	A	50.0	48	1.568211	1.509326		-3.8	20
Ethylbenzene	A	50.0	49	0.811089	0.7878707		-2.9	20
m,p-Xylenes	A	100	94	0.9669566	0.905273		-6.4	20
o-Xylene	A	50.0	48	0.9874885	0.9423333		-4.6	20
Bromoform	A	50.0	51	0.3083202	0.3164526		2.6	20
Styrene	A	50.0	50	1.748504	1.649608		0.30	20
Isopropylbenzene	A	50.0	48	2.44146	2.341943		-4.1	20
1,1,2,2-Tetrachloroethane	A	50.0	50	0.5122098	0.4845838		0.90	20
1,2,4-Trichlorobenzene	A	50.0	49	0.548923	0.5420111		-1.3	20
1,3-Dichlorobenzene	A	50.0	48	1.487847	1.432206		-3.7	20
1,4-Dichlorobenzene	A	50.0	48	1.492944	1.42375		-4.6	20
1,2-Dichlorobenzene	A	50.0	49	1.27471	1.259635		-1.2	20
1,2-Dibromo-3-chloropropane	A	50.0	48	9.403054E-02	8.316474E-02		-3.5	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B5003.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64837	Injection Date:	02/05/21
Lab Sample ID:	AA64837-CCV1	Injection Time:	08:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	18	0.6454795	0.5832048		-9.6	20	
Chloromethane	A	20.0	12	0.7429916	0.4455839		-40	20	*
Vinyl chloride	A	20.0	16	0.6032767	0.4950398		-18	20	
Bromomethane	A	20.0	19	0.2658711	0.1513145		-6.4	20	
Chloroethane	A	20.0	19	0.3233106	0.250003		-5.8	20	
Trichlorofluoromethane	A	20.0	19	0.739293	0.711155		-3.8	20	
Freon 113	A	50.0	44	0.2891047	0.2534019		-12	20	
Acetone	A	250	160	0.1178043	7.554159E-02		-36	20	*
1,1-Dichloroethene	A	50.0	45	0.4316853	0.3924899		-9.1	20	
Carbon disulfide	A	250	230	1.413985	1.279563		-9.5	20	
Methylene Chloride	A	50.0	41	0.5959536	0.4254061		-19	20	
Methyl-tert-Butyl Ether	A	50.0	40	1.264184	1.005044		-21	20	*
trans-1,2-Dichloroethene	A	50.0	42	0.4994822	0.4209247		-16	20	
cis-1,2-Dichloroethene	A	50.0	46	0.5290745	0.4863106		-8.1	20	
1,1-Dichloroethane	A	50.0	37	1.027426	0.7553301		-27	20	*
2-Butanone	A	250	200	5.654494E-02	4.518132E-02		-21	20	*
Chloroform	A	50.0	41	0.9811366	0.8024263		-18	20	
1,1,1-Trichloroethane	A	50.0	41	0.8099887	0.6671221		-18	20	
Methyl acetate	A	50.0	25	0.4097982	0.1810312		-51	20	*
Cyclohexane	A	50.0	30	1.084118	0.6722703		-40	20	*
Carbon Tetrachloride	A	50.0	36	0.3247415	0.2680764		-28	20	*
1,2-Dichloroethane	A	50.0	34	0.3947961	0.2851193		-32	20	*
Benzene	A	50.0	40	1.143102	0.9057741		-21	20	*
Trichloroethene	A	50.0	49	0.2308676	0.2270941		-1.6	20	
1,2-Dichloropropane	A	50.0	34	0.3327441	0.2290921		-31	20	*
Bromodichloromethane	A	50.0	42	0.3384447	0.3128138		-15	20	
4-Methyl-2-pentanone	A	250	220	3.573082E-02	2.926481E-02		-14	20	
2-Hexanone	A	250	170	0.1672315	0.102295		-39	20	*
cis-1,3-Dichloropropene	A	50.0	41	0.4465376	0.4066237		-18	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2011113
Lab File ID:	215B5003.D	Calibration Date:	11/19/20 00:00
Sequence:	AA64837	Injection Date:	02/05/21
Lab Sample ID:	AA64837-CCV1	Injection Time:	08:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	49	1.066872	1.052798		-1.3	20	
trans-1,3-Dichloropropene	A	50.0	44	0.5606682	0.5634451		-11	20	
1,1,2-Trichloroethane	A	50.0	49	0.3401845	0.3523833		-2.2	20	
Tetrachloroethene	A	50.0	46	0.2798513	0.2694241		-8.2	20	
Dibromochloromethane	A	50.0	52	0.2803526	0.3430013		3.3	20	
1,2-Dibromoethane	A	50.0	51	0.3355065	0.3453848		2.9	20	
Chlorobenzene	A	50.0	55	1.074819	1.19247		11	20	
Ethylbenzene	A	50.0	53	0.6263821	0.6868872		5.9	20	
m,p-Xylenes	A	100	110	0.7525839	0.8398742		12	20	
o-Xylene	A	50.0	56	0.7718014	0.8623917		12	20	
Bromoform	A	50.0	45	0.1740972	0.1718221		-9.3	20	
Styrene	A	50.0	60	1.260238	1.501755		19	20	
Isopropylbenzene	A	50.0	55	2.031474	2.235197		10	20	
1,1,2,2-Tetrachloroethane	A	50.0	49	0.5037271	0.4982069		-1.1	20	
1,2,4-Trichlorobenzene	A	50.0	37	0.4097947	0.3580211		-25	20	*
1,3-Dichlorobenzene	A	50.0	56	1.008577	1.123075		11	20	
1,4-Dichlorobenzene	A	50.0	52	1.081206	1.121205		3.7	20	
1,2-Dichlorobenzene	A	50.0	52	0.9520015	0.9952763		4.5	20	
1,2-Dibromo-3-chloropropane	A	50.0	43	7.396002E-02	6.638529E-02		-15	20	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE00180-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA63653	Instrument:	OVGCMS5
Calibration:	2011113		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0F0994	MS Tune (lower conc.)	AA63653-TUN1	205KN002.D	11/19/20 08:07
A0K1094	8260 CAL 1 PPB	AA63653-CAL1	205KN003.D	11/19/20 08:46
A0K1095	8260 CAL 2 PPB	AA63653-CAL2	205KN004.D	11/19/20 09:16
A0K1096	8260 CAL 5 PPB	AA63653-CAL3	205KN005.D	11/19/20 09:47
A0K1097	8260 CAL 10 PPB	AA63653-CAL4	205KN006.D	11/19/20 10:18
A0K1098	8260 CAL 20 PPB	AA63653-CAL5	205KN007.D	11/19/20 10:49
A0K1099	8260 CAL 50 PPB	AA63653-CAL6	205KN008.D	11/19/20 11:20
A0K1100	8260 CAL 80 PPB	AA63653-CAL7	205KN009.D	11/19/20 11:51
A0K1101	8260 CAL 100 PPB	AA63653-CAL8	205KN010.D	11/19/20 12:22
A0K1038	8260 SCV 50 PPB/20 Gases (Surr. Lower Conc.)	AA63653-SCV1	205KN012.D	11/19/20 13:24

INITIAL CALIBRATION STANDARDS

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA64808
Instrument: OVGCMS2
Calibration: 2102033

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0I0903	MS Tune	AA64808-TUN1	212B4001.D	02/04/21 07:46
A1B0650	8260 Cal 1PPB	AA64808-CAL1	212B4002.D	02/04/21 08:28
A1B0651	8260 Cal 2 PPB	AA64808-CAL2	212B4003.D	02/04/21 08:57
A1B0652	8260 Cal 5 PPB	AA64808-CAL3	212B4004.D	02/04/21 09:26
A1B0653	8260 Cal 10 PPB	AA64808-CAL4	212B4005.D	02/04/21 09:54
A1B0654	8260 Cal 20 PPB	AA64808-CAL5	212B4006.D	02/04/21 10:23
A1B0655	8260 Cal 50 PPB	AA64808-CAL6	212B4007.D	02/04/21 10:52
A1B0656	8260 Cal 80PPB	AA64808-CAL7	212B4008.D	02/04/21 11:20
A1B0657	8260 Cal 100 PPB	AA64808-CAL8	212B4009.D	02/04/21 11:49
A1B0663	8260 SCV 50 PPB	AA64808-SCV1	212B4012.D	02/04/21 13:15

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2011113
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 11/19/20 00:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	0.731806	2	0.5311658	5	0.6196449	10	0.5826494	20	0.6291202	50	0.6876832
Chloromethane	1	0.9635553	2	0.7678092	5	0.7533414	10	0.6436211	20	0.6665122	50	0.6618772
Vinyl chloride	1	0.6389704	2	0.4961021	5	0.5937063	10	0.518373	20	0.6097052	50	0.6178544
Bromomethane	1	0.5487745	2	0.3936929	5	0.2468862	10	0.1795339	20	0.1536388	50	0.1805656
Chloroethane	1	0.5095364	2	0.3356687	5	0.2733979	10	0.2639921	20	0.2971223	50	0.2601461
Trichlorofluoromethane	1	0.796403	2	0.6188353	5	0.6866136	10	0.7074541	20	0.7578705	50	0.7930894
Freon 113	1	0.2609479	2	0.2643996	5	0.2925508	10	0.3082914	20	0.2611185	50	0.3063124
Acetone	5	0.1640884	10	7.640101E-02	25	0.1132944	50	0.1270502	100	0.1080203	250	0.1165466
1,1-Dichloroethene	1	0.5304954	2	0.3722686	5	0.3921026	10	0.3748874	20	0.4134066	50	0.4489426
Carbon disulfide	5	1.625549	10	1.279116	25	1.418201	50	1.427008	100	1.452276	250	1.421308
Methylene Chloride	1	0.949196	2	0.6799528	5	0.584977	10	0.4949633	20	0.4791616	50	0.5261996
Methyl-tert-Butyl Ether	1	1.207824	2	1.067003	5	1.181117	10	1.225797	20	1.218685	50	1.417615
trans-1,2-Dichloroethene	1	0.6322907	2	0.4293379	5	0.4477091	10	0.4308276	20	0.4738958	50	0.5202946
cis-1,2-Dichloroethene	1	0.5540143	2	0.424397	5	0.5243456	10	0.4742059	20	0.5250755	50	0.5758438
1,1-Dichloroethane	1	1.150187	2	0.7455129	5	1.073417	10	0.9430262	20	0.9854351	50	1.108909
2-Butanone	5	0.0948676	10	2.903081E-02	25	6.102678E-02	50	0.0450745	100	4.561931E-02	250	5.804341E-02
Chloroform	1	1.008433	2	0.8175709	5	1.016573	10	0.9572895	20	0.9442549	50	1.031745
1,1,1-Trichloroethane	1	0.8856789	2	0.6484806	5	0.7444128	10	0.6971223	20	0.8036702	50	0.8940367
Methyl acetate	1	0.7524051	2	0.3734104	5	0.3421025	10	0.3735826	20	0.3312477	50	0.3623833
Cyclohexane	1	1.445653	2	0.8159309	5	1.111773	10	0.900795	20	1.011174	50	1.139422
Carbon Tetrachloride	1	0.3562759	2	0.265754	5	0.2802362	10	0.2692435	20	0.3099687	50	0.358654
1,2-Dichloroethane	1	0.52978	2	0.3246383	5	0.3561682	10	0.3270765	20	0.3804547	50	0.3951041
Benzene	1	1.368953	2	0.8953644	5	1.012387	10	1.019627	20	1.160622	50	1.20187
Trichloroethene	1	0.2433461	2	0.2067345	5	0.2092384	10	0.2186576	20	0.2226559	50	0.2443388
1,2-Dichloropropane	1	0.4168922	2	0.2741735	5	0.2789057	10	0.3037835	20	0.3161759	50	0.336891
Bromodichloromethane	1	0.3390617	2	0.2184906	5	0.3136005	10	0.3123434	20	0.3305471	50	0.3770309
4-Methyl-2-pentanone	5	5.360492E-02	10	3.485663E-02	25	3.163227E-02	50	3.145233E-02	100	3.245856E-02	250	3.359233E-02
2-Hexanone	5	0.1888606	10	0.1362687	25	0.1491622	50	0.1581622	100	0.1619347	250	0.1747743
cis-1,3-Dichloropropene	1	0.38758	2	0.337174	5	0.3962381	10	0.3859495	20	0.4436114	50	0.5153998
Toluene	1	1.301234	2	0.8125606	5	1.029104	10	0.9467653	20	1.065835	50	1.125779
trans-1,3-Dichloropropene	1	0.5782294	2	0.3963364	5	0.5391328	10	0.5150579	20	0.5581557	50	0.6082166

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2011113
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 11/19/20 00:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	1	0.4258708	2	0.2571382	5	0.3085141	10	0.3163403	20	0.3319446	50	0.354357
Tetrachloroethene	1	0.3547887	2	0.216805	5	0.2447617	10	0.2609188	20	0.2888004	50	0.2808423
Dibromochloromethane	1	0.261577	2	0.1928537	5	0.2186472	10	0.2340749	20	0.271185	50	0.3243124
1,2-Dibromoethane	1	0.3776332	2	0.275273	5	0.3089372	10	0.289778	20	0.3254935	50	0.3684265
Chlorobenzene	1	1.227137	2	0.9187082	5	1.088831	10	1.029964	20	1.028877	50	1.084228
Ethylbenzene	1	0.8370092	2	0.5046991	5	0.5351257	10	0.5817041	20	0.6079204	50	0.6386446
m,p-Xylenes	2	0.7709622	4	0.6304954	10	0.7519001	20	0.7265378	40	0.7815244	100	0.7925899
o-Xylene	1	0.827343	2	0.5495581	5	0.7980935	10	0.715101	20	0.7577872	50	0.8412149
Bromoform	1	0.2244042	2	0.1325052	5	0.1113209	10	0.1336911	20	0.151421	50	0.198042
Styrene	1	1.184587	2	0.9487151	5	1.197756	10	1.179467	20	1.329056	50	1.37226
Isopropylbenzene	1	2.11919	2	1.612596	5	1.9581	10	1.86924	20	2.054396	50	2.203894
1,1,2,2-Tetrachloroethane	1	0.5748727	2	0.4241761	5	0.4667316	10	0.4666946	20	0.48922	50	0.5296984
1,2,4-Trichlorobenzene	1	0.444006	2	0.2155102	5	0.3665073	10	0.3682377	20	0.3931939	50	0.481305
1,3-Dichlorobenzene	1	1.059554	2	0.8308046	5	0.914986	10	0.9259784	20	1.006449	50	1.075948
1,4-Dichlorobenzene	1	1.342371	2	0.9420738	5	0.9853156	10	0.9772104	20	1.047961	50	1.090424
1,2-Dichlorobenzene	1	1.133196	2	0.6932895	5	0.9302226	10	0.8814044	20	0.8963441	50	1.002858
1,2-Dibromo-3-chloropropane	1	0.1462261	2	0.0374643	5	3.684685E-02	10	6.679172E-02	20	6.657845E-02	50	7.807374E-02
Dibromofluoromethane	50	0.4987681	55	0.5168814	57.5	0.5405413	50	0.5403508	65	0.5020478	50	0.5574545
Toluene-d8	50	1.241808	55	1.219018	57.5	1.232296	50	1.264503	65	1.198608	50	1.317554
4-Bromofluorobenzene	50	0.9421565	55	0.8971015	57.5	0.892347	50	0.9405353	65	0.8691396	50	0.9269369

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2011113
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 11/19/20 00:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	80	0.70919	100	0.6725768								
Chloromethane	80	0.754096	100	0.7331207								
Vinyl chloride	80	0.6865886	100	0.6649138								
Bromomethane	80	0.2051834	100	0.2186939								
Chloroethane	80	~~0.1749365~~	100	~~0.1284219~~								
Trichlorofluoromethane	80	~~0.8301317~~	100	0.814785								
Freon 113	80	0.3132915	100	0.3059256								
Acetone	400	0.1217886	500	0.1152447								
1,1-Dichloroethene	80	0.4650106	100	0.4563686								
Carbon disulfide	400	1.39256	500	1.295861								
Methylene Chloride	80	0.5379475	100	0.5152308								
Methyl-tert-Butyl Ether	80	1.459444	100	1.335989								
trans-1,2-Dichloroethene	80	0.5437929	100	0.517709								
cis-1,2-Dichloroethene	80	0.6019223	100	0.5527918								
1,1-Dichloroethane	80	1.134374	100	1.078543								
2-Butanone	400	6.102308E-02	500	5.767404E-02								
Chloroform	80	1.078098	100	0.9951283								
1,1,1-Trichloroethane	80	0.9329545	100	0.8735539								
Methyl acetate	80	0.3852903	100	0.3579641								
Cyclohexane	80	1.150511	100	1.097683								
Carbon Tetrachloride	80	0.3766286	100	0.3811714								
1,2-Dichloroethane	80	0.4259138	100	0.4192331								
Benzene	80	1.233887	100	1.252102								
Trichloroethene	80	0.2480525	100	0.2539173								
1,2-Dichloropropane	80	0.3671019	100	0.3680292								
Bromodichloromethane	80	0.405243	100	0.4112405								
4-Methyl-2-pentanone	400	3.457471E-02	500	3.367481E-02								
2-Hexanone	400	0.1842147	500	0.1844748								
cis-1,3-Dichloropropene	80	0.5492152	100	0.5571325								
Toluene	80	1.145043	100	1.108659								
trans-1,3-Dichloropropene	80	0.6603691	100	0.6298476								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2011113
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 11/19/20 00:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	80	0.3689886	100	0.3583223								
Tetrachloroethene	80	0.2965475	100	0.2953463								
Dibromochloromethane	80	0.3768537	100	0.3633167								
1,2-Dibromoethane	80	0.3782567	100	0.360254								
Chlorobenzene	80	1.134842	100	1.085963								
Ethylbenzene	80	0.6600876	100	0.6458658								
m,p-Xylenes	160	0.7997641	200	0.7668973								
o-Xylene	80	0.8625415	100	0.8227721								
Bromoform	80	0.2162944	100	0.2250987								
Styrene	80	1.466473	100	1.403591								
Isopropylbenzene	80	2.273953	100	2.16042								
1,1,2,2-Tetrachloroethane	80	0.5602106	100	0.5182127								
1,2,4-Trichlorobenzene	80	0.5236953	100	0.485902								
1,3-Dichlorobenzene	80	1.133433	100	1.121463								
1,4-Dichlorobenzene	80	1.14285	100	1.121445								
1,2-Dichlorobenzene	80	1.071346	100	1.007351								
1,2-Dibromo-3-chloropropane	80	8.573901E-02	100	~~8.239508E-02~~								
Dibromofluoromethane	70	0.5077306	75	0.4842722								
Toluene-d8	70	1.203106	75	1.255696								
4-Bromofluorobenzene	70	0.8681085	75	0.8442992								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Calibration: 2011113
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 11/19/20 00:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.6454795	10.47099	3.97125	7.848416E-02			20	
Chloromethane	0.7429916	13.64009	4.39275	4.507071E-02			20	
Vinyl chloride	0.6032767	11.0407	4.575	4.400144E-02			20	
Bromomethane	0.2658711	51.25071	5.221	5.968524E-02		0.9984319	0.99	
Chloroethane	0.3233106	29.51129	5.432333	0.1760207	0.9952741		0.99	
Trichlorofluoromethane	0.739293	9.643804	5.680714	0.1191043			20	
Freon 113	0.2891047	7.985007	6.54225	5.909168E-02			20	
Acetone	0.1178043	20.49874	7.39275	7.521591E-02	0.9984468		0.99	
1,1-Dichloroethene	0.4316853	12.51718	6.52275	4.626374E-02			20	
Carbon disulfide	1.413985	7.516358	6.611625	4.231748E-02			20	
Methylene Chloride	0.5959536	26.19116	7.33075	6.734604E-02	0.9988511		0.99	
Methyl-tert-Butyl Ether	1.264184	10.32773	7.62475	5.009821E-02			20	
trans-1,2-Dichloroethene	0.4994822	13.81611	7.540375	0.0786285			20	
cis-1,2-Dichloroethene	0.5290745	10.75978	8.94375	6.951434E-02			20	
1,1-Dichloroethane	1.027426	13.07056	8.305375	3.359958E-02			20	
2-Butanone	5.654494E-02	33.55672	9.542875	0.1054762		0.9965506	0.99	
Chloroform	0.9811366	7.973652	9.21525	9.664849E-02			20	
1,1,1-Trichloroethane	0.8099887	12.78922	9.4765	4.549804E-02			20	
Methyl acetate	0.4097982	34.05137	7.5195	0.1021645	0.9973892		0.99	
Cyclohexane	1.084118	17.43103	9.1825	2.763801E-02	0.9983605		0.99	
Carbon Tetrachloride	0.3247415	15.07661	9.40325	3.946246E-02	0.997318		0.99	
1,2-Dichloroethane	0.3947961	16.85402	10.083	6.413568E-02	0.998277		0.99	
Benzene	1.143102	13.57666	9.871	4.625673E-02			20	
Trichloroethene	0.2308676	8.071231	10.4425	2.481194E-02			20	
1,2-Dichloropropane	0.3327441	14.79548	10.97825	3.768472E-02		0.9995583	0.99	
Bromodichloromethane	0.3384447	18.35051	11.0095	2.483783E-02		0.9995909	0.99	
4-Methyl-2-pentanone	3.573082E-02	20.51705	12.12775	4.882009E-02	0.9995377		0.99	
2-Hexanone	0.1672315	11.31414	12.874	0.0309941			20	
cis-1,3-Dichloropropene	0.4465376	18.76753	11.60275	0.0283524		0.999376	0.99	
Toluene	1.066872	13.57287	11.82575	3.641946E-02			20	

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2011113
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 11/19/20 00:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
trans-1,3-Dichloropropene	0.5606682	14.59159	12.1935	6.110681E-02	0.9976126		0.99	
1,1,2-Trichloroethane	0.3401845	14.58738	12.35775	3.776279E-02	0.9991086		0.99	
Tetrachloroethene	0.2798513	14.65878	12.20475	6.050502E-02	0.9992435		0.99	
Dibromochloromethane	0.2803526	24.18079	12.54425	2.540952E-02		0.9966995	0.99	
1,2-Dibromoethane	0.3355065	12.24976	12.80675	5.029451E-02			20	
Chlorobenzene	1.074819	8.299772	13.238	2.555814E-02			20	
Ethylbenzene	0.6263821	16.13499	13.20525	2.269002E-02	0.9993938		0.99	
m,p-Xylenes	0.7525839	7.241605	13.32075	3.483174E-02			20	
o-Xylene	0.7718014	13.16143	13.726	2.743597E-02			20	
Bromoform	0.1740972	26.85684	13.86988	2.962488E-02		0.9990525	0.99	
Styrene	1.260238	13.19508	13.77575	6.052145E-02			20	
Isopropylbenzene	2.031474	10.53359	13.99225	2.532555E-02			20	
1,1,2,2-Tetrachloroethane	0.5037271	10.18228	14.463	1.928567E-02			20	
1,2,4-Trichlorobenzene	0.4097947	23.81543	18.13363	0.0263798		0.9955535	0.99	
1,3-Dichlorobenzene	1.008577	10.77426	15.4075	2.626486E-02			20	
1,4-Dichlorobenzene	1.081206	11.81261	15.49775	7.350592E-03			20	
1,2-Dichlorobenzene	0.9520015	14.21603	16.01475	1.858857E-02			20	
1,2-Dibromo-3-chloropropane	7.396002E-02	49.9638	17.07629	4.554431E-02		0.9992021	0.99	
Dibromofluoromethane	0.5185058	4.852246	9.4205	3.503454E-02			20	
Toluene-d8	1.241574	3.107317	11.77275	1.495661E-03			20	
4-Bromofluorobenzene	0.8975781	4.047299	14.322	1.411585E-02			20	

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2102033
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 02/05/21 09:02

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	1.337462	2	1.247911	5	0.9449432	10	0.8895337	20	0.9380152	50	0.9944346
Chloromethane	1	1.172416	2	1.131201	5	0.8616121	10	0.8303943	20	0.8614303	50	0.9522727
Vinyl chloride	1	1.036512	2	1.069531	5	0.8144113	10	0.8046179	20	0.8372592	50	0.8877784
Bromomethane	1	0.9356348	2	0.9942258	5	0.8005614	10	0.4639002	20	0.3631126	50	0.3399654
Chloroethane	1	0.6865245	2	0.6149489	5	0.4903051	10	0.4394931	20	0.4655666	50	0.4563071
Trichlorofluoromethane	1	0.9294701	2	1.021496	5	0.8167273	10	0.8307273	20	0.87436	50	0.9344477
Freon 113	1	0.5806036	2	0.4828525	5	0.4785859	10	0.4796842	20	0.5200062	50	0.5380902
Acetone	5	0.1835963	10	0.1462067	25	0.1069917	50	0.1019988	100	0.1024521	250	0.1109946
1,1-Dichloroethene	1	0.7047384	2	0.5700411	5	0.4713599	10	0.4408624	20	0.4770166	50	0.5025033
Carbon disulfide	5	2.351332	10	2.261026	25	1.876879	50	1.871984	100	1.898783	250	1.915777
Methylene Chloride	1	0.9754252	2	0.7118947	5	0.6029108	10	0.5451891	20	0.5619431	50	0.5763368
Methyl-tert-Butyl Ether	1	1.508673	2	1.361744	5	1.239497	10	1.13823	20	1.21501	50	1.320684
trans-1,2-Dichloroethene	1	0.7700283	2	0.6059423	5	0.5522822	10	0.5096055	20	0.5451306	50	0.5632688
cis-1,2-Dichloroethene	1	0.7366828	2	0.6851251	5	0.5860964	10	0.5619539	20	0.5953	50	0.6226969
1,1-Dichloroethane	1	1.168773	2	1.188493	5	1.147411	10	1.048688	20	1.121354	50	1.137851
2-Butanone	5	5.150335E-02	10	6.279584E-02	25	4.476437E-02	50	3.696768E-02	100	3.535097E-02	250	0.039429
Chloroform	1	1.099	2	1.230398	5	0.9986289	10	0.9957662	20	1.045097	50	1.066729
1,1,1-Trichloroethane	1	0.9129375	2	0.8576261	5	0.7663767	10	0.7245873	20	0.7687182	50	0.7966786
Methyl acetate	1	0.1384258	2	0.1138331	5	7.439111E-02	10	0.0582327	20	0.0618776	50	6.750807E-02
Cyclohexane	1	1.015496	2	0.9368089	5	0.9209027	10	0.8668475	20	0.9303388	50	0.9637724
Carbon Tetrachloride	1	0.5021641	2	0.4661366	5	0.4361618	10	0.4050185	20	0.4345675	50	0.4458204
1,2-Dichloroethane	1	0.5036396	2	0.4797331	5	0.4094505	10	0.3674035	20	0.3871195	50	0.4036251
Benzene	1	1.483376	2	1.321047	5	1.185661	10	1.078528	20	1.154269	50	1.155142
Trichloroethene	1	0.3657617	2	0.3319887	5	0.3135745	10	0.2888923	20	0.3201668	50	0.3277059
1,2-Dichloropropane	1	0.5416749	2	0.4611197	5	0.3624881	10	0.331455	20	0.356681	50	0.3638479
Bromodichloromethane	1	0.636927	2	0.5252489	5	0.4513237	10	0.4099041	20	0.4357794	50	0.4481051
4-Methyl-2-pentanone	5	4.593744E-02	10	4.153131E-02	25	3.145238E-02	50	2.627046E-02	100	2.622145E-02	250	2.947039E-02
2-Hexanone	5	0.2275887	10	0.2062605	25	0.164951	50	0.140871	100	0.1459256	250	0.1618071
cis-1,3-Dichloropropene	1	0.7313594	2	0.6453639	5	0.5855659	10	0.5205651	20	0.5551651	50	0.5882977
Toluene	1	1.682008	2	1.548359	5	1.389492	10	1.284062	20	1.353594	50	1.403602
trans-1,3-Dichloropropene	1	1.08899	2	0.9941519	5	0.8988736	10	0.8307402	20	0.8643342	50	0.9195607

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2102033
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 02/05/21 09:02

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	1	0.5770371	2	0.499281	5	0.4457021	10	0.4150305	20	0.4267104	50	0.4539549
Tetrachloroethene	1	0.4166521	2	0.4243087	5	0.433671	10	0.4059883	20	0.4300299	50	0.4376014
Dibromochloromethane	1	0.7092384	2	0.6548386	5	0.6184487	10	0.5671143	20	0.6139367	50	0.6600187
1,2-Dibromoethane	1	0.534907	2	0.5086359	5	0.4468551	10	0.4239454	20	0.4558424	50	0.5006602
Chlorobenzene	1	1.801715	2	1.701912	5	1.552112	10	1.376756	20	1.478215	50	1.50954
Ethylbenzene	1	0.9512686	2	0.87441	5	0.7796654	10	0.7004767	20	0.7649923	50	0.7764294
m,p-Xylenes	2	1.182548	4	1.091776	10	0.9567733	20	0.8290952	40	0.8966747	100	0.9041403
o-Xylene	1	1.223226	2	1.085027	5	0.9547179	10	0.8329265	20	0.904757	50	0.9337911
Bromoform	1	0.3196076	2	0.3179308	5	0.2969677	10	0.2696117	20	0.2884556	50	0.3188312
Styrene	1	2.291006	2	2.008751	5	1.718843	10	1.440052	20	1.579334	50	1.631627
Isopropylbenzene	1	2.967412	2	2.684972	5	2.373335	10	2.076044	20	2.257785	50	2.332226
1,1,2,2-Tetrachloroethane	1	0.7231849	2	0.5689077	5	0.4999925	10	0.422502	20	0.4366579	50	0.4776641
1,2,4-Trichlorobenzene	1	0.5821393	2	0.5708529	5	0.5302336	10	0.4676523	20	0.5045832	50	0.5469993
1,3-Dichlorobenzene	1	1.699312	2	1.541063	5	1.424836	10	1.281517	20	1.377731	50	1.460091
1,4-Dichlorobenzene	1	1.731302	2	1.626725	5	1.43547	10	1.27941	20	1.374856	50	1.43371
1,2-Dichlorobenzene	1	1.411407	2	1.297268	5	1.202121	10	1.094393	20	1.195289	50	1.279721
1,2-Dibromo-3-chloropropane	1	0.115303	2	0.1363742	5	8.908567E-02	10	7.797931E-02	20	0.0747117	50	8.462764E-02
Dibromofluoromethane	50	0.4778211	55	0.4794	60	0.5204522	50	0.5129844	65	0.5266185	50	0.5190879
Toluene-d8	50	0.9247951	55	0.9066638	60	0.9224941	50	0.8475009	65	0.8643167	50	0.8499914
4-Bromofluorobenzene	50	0.7781051	55	0.7428421	60	0.7573995	50	0.6855634	65	0.6970191	50	0.7137536

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2102033
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 02/05/21 09:02

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	80	1.035242	100	1.047761								
Chloromethane	80	1.072116	100	1.1447								
Vinyl chloride	80	0.919451	100	0.9333223								
Bromomethane	80	0.3140309	100	0.2747496								
Chloroethane	80	0.4502759	100	0.4391695								
Trichlorofluoromethane	80	0.9525157	100	0.9628847								
Freon 113	80	0.5629022	100	0.559144								
Acetone	400	0.1126038	500	0.1093182								
1,1-Dichloroethene	80	0.5349415	100	0.5344722								
Carbon disulfide	400	1.936238	500	1.930624								
Methylene Chloride	80	0.6084772	100	0.5988698								
Methyl-tert-Butyl Ether	80	1.3757	100	1.343492								
trans-1,2-Dichloroethene	80	0.6005144	100	0.601171								
cis-1,2-Dichloroethene	80	0.6682201	100	0.6659816								
1,1-Dichloroethane	80	1.191903	100	1.175054								
2-Butanone	400	3.974689E-02	500	3.819214E-02								
Chloroform	80	1.12568	100	1.114494								
1,1,1-Trichloroethane	80	0.8442339	100	0.8366385								
Methyl acetate	80	7.265203E-02	100	6.919788E-02								
Cyclohexane	80	1.022295	100	1.015478								
Carbon Tetrachloride	80	0.4658795	100	0.4596921								
1,2-Dichloroethane	80	0.4244163	100	0.4133419								
Benzene	80	1.185794	100	1.160917								
Trichloroethene	80	0.3487323	100	0.3457149								
1,2-Dichloropropane	80	0.3850092	100	0.3758997								
Bromodichloromethane	80	0.4611358	100	0.4513071								
4-Methyl-2-pentanone	400	2.936849E-02	500	2.830128E-02								
2-Hexanone	400	0.1644803	500	0.1569143								
cis-1,3-Dichloropropene	80	0.6138686	100	0.6004563								
Toluene	80	1.464834	100	1.450392								
trans-1,3-Dichloropropene	80	0.944719	100	0.9397901								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2102033
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 02/05/21 09:02

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	80	0.4719758	100	0.4594853								
Tetrachloroethene	80	0.4558023	100	0.453708								
Dibromochloromethane	80	0.6888681	100	0.6695092								
1,2-Dibromoethane	80	0.5258527	100	0.5146552								
Chlorobenzene	80	1.57383	100	1.551606								
Ethylbenzene	80	0.8238054	100	0.8176644								
m,p-Xylenes	160	0.9405886	200	0.9340569								
o-Xylene	80	0.9866201	100	0.9788426								
Bromoform	80	0.3338063	100	0.3213507								
Styrene	80	1.700654	100	1.617764								
Isopropylbenzene	80	2.434442	100	2.405466								
1,1,2,2-Tetrachloroethane	80	0.4942502	100	0.4745193								
1,2,4-Trichlorobenzene	80	0.5989757	100	0.5899474								
1,3-Dichlorobenzene	80	1.580311	100	1.537917								
1,4-Dichlorobenzene	80	1.54164	100	1.520438								
1,2-Dichlorobenzene	80	1.37604	100	1.341439								
1,2-Dibromo-3-chloropropane	80	8.877725E-02	100	0.0853855								
Dibromofluoromethane	70	0.5389652	75	0.5564387								
Toluene-d8	70	0.8634773	75	0.8811705								
4-Bromofluorobenzene	70	0.6991704	75	0.7103018								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Calibration: 2102033
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 02/05/21 09:02

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	1.054413	14.96476	5.89	0.425663	0.9989438		0.99	
Chloromethane	1.003268	14.21594	6.3575	0.4096043			20	
Vinyl chloride	0.9128604	10.80098	6.5525	0.4218322			20	
Bromomethane	0.5607726	53.31909	7.205	0.2224201	0.995		0.99	
Chloroethane	0.5053238	18.44314	7.43875	0.3001491	0.9993979		0.99	
Trichlorofluoromethane	0.9153286	7.618433	7.70125	0.2347553			20	
Freon 113	0.5252336	7.841525	8.525	0.2177851			20	
Acetone	0.1217703	23.55152	9.24125	0.1068927	0.9993213		0.99	
1,1-Dichloroethene	0.5294919	15.49619	8.49	0.2090049	0.9985825		0.99	
Carbon disulfide	2.00533	9.40711	8.6075	0.2035073			20	
Methylene Chloride	0.6476308	21.8686	9.20125	0.1698144	0.9992379		0.99	
Methyl-tert-Butyl Ether	1.312879	8.690892	9.52125	0.1027142			20	
trans-1,2-Dichloroethene	0.5934929	13.26964	9.43	9.908017E-02			20	
cis-1,2-Dichloroethene	0.6402571	9.173725	10.6675	6.592946E-02			20	
1,1-Dichloroethane	1.147441	4.088278	10.105	0.1294405			20	
2-Butanone	4.359378E-02	21.34022	11.17125	2.697663E-02	0.998794		0.99	
Chloroform	1.084474	7.074928	10.8875	6.626004E-02			20	
1,1,1-Trichloroethane	0.8134746	7.45283	11.18375	6.557541E-02			20	
Methyl acetate	8.201479E-02	34.75121	9.38375	0.1269103	0.9976746		0.99	
Cyclohexane	0.9589924	5.801573	10.95125	0.0901754			20	
Carbon Tetrachloride	0.4519301	6.351877	11.14625	4.887193E-02			20	
1,2-Dichloroethane	0.4235912	10.83723	11.66625	4.571402E-02			20	
Benzene	1.215592	10.48916	11.525	3.962501E-02			20	
Trichloroethene	0.3303171	7.183729	12.0375	3.180391E-02			20	
1,2-Dichloropropane	0.3972719	17.50226	12.48875	2.369355E-02	0.9991427		0.99	
Bromodichloromethane	0.4774664	15.12562	12.5075	3.780596E-02	0.9996007		0.99	
4-Methyl-2-pentanone	3.231915E-02	22.73138	13.5125	3.595128E-02	0.9988323		0.99	
2-Hexanone	0.1710998	17.59475	14.21375	3.634812E-02	0.9986558		0.99	
cis-1,3-Dichloropropene	0.6050803	10.44582	13.05	5.878714E-03			20	
Toluene	1.447043	8.515849	13.28125	3.206579E-02			20	

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE00180-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2102033
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 02/05/21 09:02

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
trans-1,3-Dichloropropene	0.935145	8.54874	13.57	1.887996E-02			20	
1,1,2-Trichloroethane	0.4686471	10.86762	13.72875	3.105124E-02			20	
Tetrachloroethene	0.4322202	3.956219	13.65875	2.708465E-02			20	
Dibromochloromethane	0.6477466	7.06254	13.92375	3.714265E-02			20	
1,2-Dibromoethane	0.4889192	8.380836	14.18	1.800044E-02			20	
Chlorobenzene	1.568211	8.389421	14.62875	1.586376E-02			20	
Ethylbenzene	0.811089	9.367978	14.58625	3.565448E-02			20	
m,p-Xylenes	0.9669566	11.84517	14.7025	0.0312652			20	
o-Xylene	0.9874885	12.0948	15.12125	0.0216312			20	
Bromoform	0.3083202	6.903605	15.25125	2.216697E-02			20	
Styrene	1.748504	15.58365	15.16125	2.057437E-02	0.9987786		0.99	
Isopropylbenzene	2.44146	11.17545	15.39125	2.410882E-02			20	
1,1,2,2-Tetrachloroethane	0.5122098	18.75023	15.82625	3.123078E-02	0.9988524		0.99	
1,2,4-Trichlorobenzene	0.548923	8.347295	19.96375	5.777523E-02			20	
1,3-Dichlorobenzene	1.487847	8.72802	16.90375	2.854841E-02			20	
1,4-Dichlorobenzene	1.492944	9.613437	17	0			20	
1,2-Dichlorobenzene	1.27471	8.282759	17.5675	0.0407313			20	
1,2-Dibromo-3-chloropropane	9.403054E-02	22.34967	18.67875	4.540835E-02	0.9983926		0.99	
Dibromofluoromethane	0.516471	5.231026	11.06875	7.431838E-02			20	
Toluene-d8	0.8825512	3.569832	13.2325	3.066695E-02			20	
4-Bromofluorobenzene	0.7230194	4.528641	15.73	1.698639E-02			20	

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2011113 **Laboratory ID:** AA63653-SCV1

Sequence: AA63653 **Standard ID:** A0K1038

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Cyclohexane	50.0	46	-8.0	30.00
2-Hexanone	250	250	0.6	30.00
Carbon Tetrachloride	50.0	55	10.9	30.00
1,3-Dichlorobenzene	50.0	55	9.4	30.00
4-Bromofluorobenzene	50.0	52	4.6	30.00
Toluene-d8	50.0	52	4.4	30.00
Dibromofluoromethane	50.0	50	-0.5	30.00
Methyl-tert-Butyl Ether	50.0	49	-1.8	30.00
trans-1,2-Dichloroethene	50.0	48	-4.3	30.00
cis-1,2-Dichloroethene	50.0	50	-0.1	30.00
Tetrachloroethene	50.0	48	-3.1	30.00
Ethylbenzene	50.0	49	-2.4	30.00
1,2,4-Trichlorobenzene	50.0	49	-2.0	30.00
Benzene	50.0	54	7.1	30.00
Chlorobenzene	50.0	52	3.4	30.00
Toluene	50.0	53	5.9	30.00
m,p-Xylenes	100	110	5.6	30.00
4-Methyl-2-pentanone	250	230	-7.3	30.00
1,2-Dichloroethane	50.0	46	-8.3	30.00
1,2-Dibromoethane	50.0	52	3.4	30.00
1,4-Dichlorobenzene	50.0	51	1.3	30.00
trans-1,3-Dichloropropene	50.0	49	-1.5	30.00
cis-1,3-Dichloropropene	50.0	49	-2.4	30.00
Styrene	50.0	55	10.3	30.00
Dibromochloromethane	50.0	52	3.8	30.00
1,1-Dichloroethene	50.0	49	-2.0	30.00
1,2-Dibromo-3-chloropropane	50.0	55	9.4	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2011113 **Laboratory ID:** AA63653-SCV1

Sequence: AA63653 **Standard ID:** A0K1038

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,2-Dichlorobenzene	50.0	52	3.8	30.00
o-Xylene	50.0	53	5.4	30.00
1,1,2,2-Tetrachloroethane	50.0	52	3.2	30.00
Methyl acetate	50.0	38	-23.9	30.00
Trichloroethene	50.0	54	7.6	30.00
1,1,2-Trichloroethane	50.0	50	-0.4	30.00
2-Butanone	250	250	-1.7	30.00
1,2-Dichloropropane	50.0	50	-0.4	30.00
Freon 113	50.0	51	2.3	30.00
Acetone	250	240	-4.3	30.00
Trichlorofluoromethane	20.0	21	2.9	30.00
Chloroform	50.0	49	-2.2	30.00
1,1-Dichloroethane	50.0	48	-4.6	30.00
Bromodichloromethane	50.0	50	-0.1	30.00
Bromoform	50.0	52	3.8	30.00
Carbon disulfide	50.0	52	4.0	30.00
Methylene Chloride	50.0	47	-5.6	30.00
Vinyl chloride	20.0	21	3.6	30.00
Chloroethane	20.0	22	8.4	30.00
Chloromethane	20.0	20	-0.1	30.00
Bromomethane	20.0	25	24.8	30.00
1,1,1-Trichloroethane	50.0	51	1.2	30.00
Isopropylbenzene	50.0	54	8.8	30.00
Dichlorodifluoromethane	20.0	21	3.0	30.00

* Values outside of QC limits

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2102033 **Laboratory ID:** AA64808-SCV1

Sequence: AA64808 **Standard ID:** A1B0663

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Cyclohexane	50.0	59	17.1	30.00
2-Hexanone	250	250	-0.7	30.00
Carbon Tetrachloride	50.0	54	7.4	30.00
1,3-Dichlorobenzene	50.0	48	-4.7	30.00
4-Bromofluorobenzene	50.0	49	-1.3	30.00
Toluene-d8	50.0	49	-2.8	30.00
Dibromofluoromethane	50.0	49	-1.2	30.00
Methyl-tert-Butyl Ether	50.0	55	9.6	30.00
trans-1,2-Dichloroethene	50.0	52	3.2	30.00
cis-1,2-Dichloroethene	50.0	53	5.3	30.00
Tetrachloroethene	50.0	53	5.1	30.00
Ethylbenzene	50.0	48	-3.2	30.00
1,2,4-Trichlorobenzene	50.0	48	-3.1	30.00
Benzene	50.0	55	9.4	30.00
Chlorobenzene	50.0	49	-2.2	30.00
Toluene	50.0	51	1.9	30.00
m,p-Xylenes	100	94	-6.1	30.00
4-Methyl-2-pentanone	250	260	2.9	30.00
1,2-Dichloroethane	50.0	51	1.8	30.00
1,2-Dibromoethane	50.0	51	2.9	30.00
1,4-Dichlorobenzene	50.0	46	-7.3	30.00
trans-1,3-Dichloropropene	50.0	51	1.3	30.00
cis-1,3-Dichloropropene	50.0	49	-2.1	30.00
Styrene	50.0	50	-0.7	30.00
Dibromochloromethane	50.0	50	-0.2	30.00
1,1-Dichloroethene	50.0	50	0.08	30.00
1,2-Dibromo-3-chloropropane	50.0	48	-4.5	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE00180-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2102033 **Laboratory ID:** AA64808-SCV1

Sequence: AA64808 **Standard ID:** A1B0663

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,2-Dichlorobenzene	50.0	48	-3.4	30.00
o-Xylene	50.0	48	-4.9	30.00
1,1,2,2-Tetrachloroethane	50.0	48	-3.2	30.00
Methyl acetate	50.0	51	2.0	30.00
Trichloroethene	50.0	53	5.3	30.00
1,1,2-Trichloroethane	50.0	48	-3.4	30.00
2-Butanone	250	370	47.5 *	30.00
1,2-Dichloropropane	50.0	52	3.1	30.00
Freon 113	50.0	57	14.3	30.00
Acetone	250	280	11.5	30.00
Trichlorofluoromethane	50.0	54	8.0	30.00
Chloroform	50.0	52	4.8	30.00
1,1-Dichloroethane	50.0	54	8.6	30.00
Bromodichloromethane	50.0	51	1.1	30.00
Bromoform	50.0	51	1.5	30.00
Carbon disulfide	50.0	50	0.4	30.00
Methylene Chloride	50.0	53	6.8	30.00
Vinyl chloride	50.0	50	-0.5	30.00
Chloroethane	50.0	55	9.3	30.00
Chloromethane	50.0	50	0.6	30.00
Bromomethane	50.0	40	-20.6	30.00
1,1,1-Trichloroethane	50.0	53	6.5	30.00
Isopropylbenzene	50.0	47	-5.2	30.00
Dichlorodifluoromethane	50.0	42	-15.3	30.00

* Values outside of QC limits

ANALYSIS SEQUENCE

AA64811

Instrument: OVGCMS5

Calibration ID: 2011113

Printed: 2/4/2021 8:57:07AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA64811-CCV1	QC		1	2	A1A1253	A0H0536		
1B04020-BS1	QC		2	3		A0H0536		
1B04020-BLK1	QC		3	5		A0H0536		
AA64811-CRL1	QC		4	6	A1A1254	A0H0536		
AE00180-01	60D TCL SOM01.2 CLP-LIK	B	5	7		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-02	60D TCL SOM01.2 CLP-LIK	B	6	8		A0H0536	Tetra Tech NUS, Inc. (TE015)	run500x freon nc2/4/21 RUSH. MUST
AE00180-03	60D TCL SOM01.2 CLP-LIK	B	7	9		A0H0536	Tetra Tech NUS, Inc. (TE015)	run2x nc2/4/21 RUSH. MUST MEET
AE00180-04	60D TCL SOM01.2 CLP-LIK	B	8	10		A0H0536	Tetra Tech NUS, Inc. (TE015)	run50x nc2/4/21 RUSH. MUST MEE
AE00180-05	60D TCL SOM01.2 CLP-LIK	B	9	11		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-06	60D TCL SOM01.2 CLP-LIK	B	10	12		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-07	60D TCL SOM01.2 CLP-LIK	B	11	13		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-08	60D TCL SOM01.2 CLP-LIK	B	12	14		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-09	60D TCL SOM01.2 CLP-LIK	B	13	15		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAI
AE00180-10	60D TCL SOM01.2 CLP-LIK	B	14	16		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAI
AE00180-11	60D TCL SOM01.2 CLP-LIK	B	15	17		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-12	60D TCL SOM01.2 CLP-LIK	B	16	18		A0H0536	Tetra Tech NUS, Inc. (TE015)	run2.5x nc2/4/21 RUSH. MUST MEE
AE00180-13	60D TCL SOM01.2 CLP-LIK	B	17	19		A0H0536	Tetra Tech NUS, Inc. (TE015)	run10x nc2/4/21 RUSH. MUST MEET
AE00180-14	60D TCL SOM01.2 CLP-LIK	B	18	20		A0H0536	Tetra Tech NUS, Inc. (TE015)	run100x nc2/4/21 RUSH. MUST MEE
AE00180-15	60D TCL SOM01.2 CLP-LIK	B	19	21		A0H0536	Tetra Tech NUS, Inc. (TE015)	run500x nc2/4/21 RUSH. MUST MEE
AE00180-16	60D TCL SOM01.2 CLP-LIK	B	20	22		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
1B04020-MS1	QC	C	21	23		A0H0536		
1B04020-MSD1	QC	C	22	24		A0H0536		

Samples Loaded By — Date

Data Processed By — Date

ANALYSIS SEQUENCE

AA64811

Instrument: OVGCMS5

Calibration ID: 2011113

Printed: 2/4/2021 8:57:07AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments

Samples Loaded By 02/05/21 Date

Data Processed By 02/05/21 Date

PREPARATION BENCH SHEET

Printed: 2/4/2021 8:55:32AM

Analysis
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

1B04020

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A0F0992 8260 surr working (lower conc.)

Spiking Solution
A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1B04020-BLK1		Blank		QC			5	5			5	
1B04020-BS1		LCS		QC			5	5	A1A1251 A1A0898	2 2	5	
1B04020-MS1		Matrix Spike [AE00180-01]		QC			5	5	A1A1251 A1A0898	2 2	5	
1B04020-MSD1		Matrix Spike Dup [AE00180-01]		QC			5	5	A1A1251 A1A0898	2 2	5	
AE00180-01	C	HMPN-MW0043-035.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-02	C	HMPN-MW0044-045.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run500x freon nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-03	C	HMPN-MW0041-035.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run2x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-04	C	HMPN-MW0042-042.5-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run50x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-05	C	HMPN-MW0037-010.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-06	C	HMPN-MW0038-020.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-07	C	HMPN-MW0046-015.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-08	C	HMPN-MW0047-025.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-09	C	HMPN-MW0036-015.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-10	C	HMPN-MW0011-025.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-11	C	HMPN-MW0029-015.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-12	C	HMPN-MW0030-025.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE			5	5			5	run2.5x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21

PREPARATION BENCH SHEET

Printed: 2/4/2021 8:55:32AM

1B04020

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A0F0992 8260 surr working (lower conc.)

Spiking Solution
A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE00180-13	C	HMPN-MW0031-035.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run10x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-14	C	HMPN-MW0032-042.5-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run100x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-15	C	HMPN-MW0033-047.5-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run500x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-16	C	HMPN-MW0008-025.0-202101[illegible]MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5
EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 02/04/21

StopDate 02/04/21

Instrument ID OVGCMS-5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A0B1371	Residual Chlorine Strips (Potassium Iodide S	102916
A1B0635	P&T Anti-Foam working solution	N/A

02/05/21
Samples Prepared By Date

Samples Prepared By Date

Sequence Name: C:\msdchem\1\sequence\215B4.s
Comment:
Operator: KKW
Data Path: C:\msdchem\1\DATA\020421\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line				
1)	Sample	1	215B4001 8260S	rinse
2)	Sample	2	215B4002 8260S	CCV1
3)	Sample	3	215B4003 8260S	BS1
4)	Sample	4	215B4004 8260S	RINSE
5)	Sample	5	215B4005 8260S	BLK1
6)	Sample	6	215B4006 8260S	CRL1
7)	Sample	7	215B4007 8260S	AE00180-01
8)	Sample	8	215B4008 8260S	AE00180-02@500X
9)	Sample	9	215B4009 8260S	AE00180-03@2X rr 2x overdilute
10)	Sample	10	215B4010 8260S	AE00180-04@50X
11)	Sample	11	215B4011 8260S	AE00180-05 rr 1x xylenes ↑CCV
12)	Sample	12	215B4012 8260S	AE00180-06 rr 1x cyclohexane, CCV xylenes ↑CCV
13)	Sample	13	215B4013 8260S	AE00180-07
14)	Sample	14	215B4014 8260S	AE00180-08
15)	Sample	15	215B4015 8260S	AE00180-09
16)	Sample	16	215B4016 8260S	AE00180-10
17)	Sample	17	215B4017 8260S	AE00180-11
18)	Sample	18	215B4018 8260S	AE00180-12@2.5X
19)	Sample	19	215B4019 8260S	AE00180-13@10X
20)	Sample	20	215B4020 8260S	AE00180-14@100X
21)	Sample	21	215B4021 8260S	AE00180-15@500X rr 250x overdilute
22)	Sample	22	215B4022 8260S	AE00180-16
23)	Sample	23	215B4023 8260S	1B04020-MS1
24)	Sample	23	215B4024 8260S	1B04020-MSD1
25)	Sample	24	215B4025 8260S	RINSE
26)	Sample	25	215B4026 8260S	AA64821-CCV1 rr
27)	Sample	26	215B4027 8260S	1B04041-BS1
28)	Sample	27	215B4028 8260S	1B04041-MS1
29)	Sample	27	215B4029 8260S	1B04041-MSD1
30)	Sample	28	215B4030 8260S	RINSE
31)	Sample	29	215B4031 8260S	1B04041-BLK1
32)	Sample	30	215B4032 8260S	AA64821-CRL1
33)	Sample	31	215B4033 8260S	AE00592-01
34)	Sample	32	215B4034 8260S	AE00592-02
35)	Sample	33	215B4035 8260S	AE00592-03
36)	Sample	34	215B4036 8260S	AE00180-17
37)	Sample	35	215B4037 8260S	AE00180-18
38)	Sample	36	215B4038 8260S	AE00180-19
39)	Sample	37	215B4039 8260S	AE00180-20@25X
40)	Sample	38	215B4040 8260S	AE00180-21
41)	Sample	39	215B4041 8260S	AE00180-22@5X
42)	Sample	40	215B4042 8260S	AE00180-23
43)	Sample	41	215B4043 8260S	AE00180-24@500X

Sequence Name: C:\msdchem\1\sequence\215B4.s

	Line Type	Vial	DataFile	Method	Sample Name
44)	Sample	42	215B4044	8260S	AE00180-25@1000X
45)	Sample	43	215B4045	8260S	AE00180-26@10X
46)	Sample	44	215B4046	8260S	AE00180-27@5X
47)	Sample	45	215B4047	8260S	AE00180-28@50X
48)	Sample	46	215B4048	8260S	AE00180-29@50

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

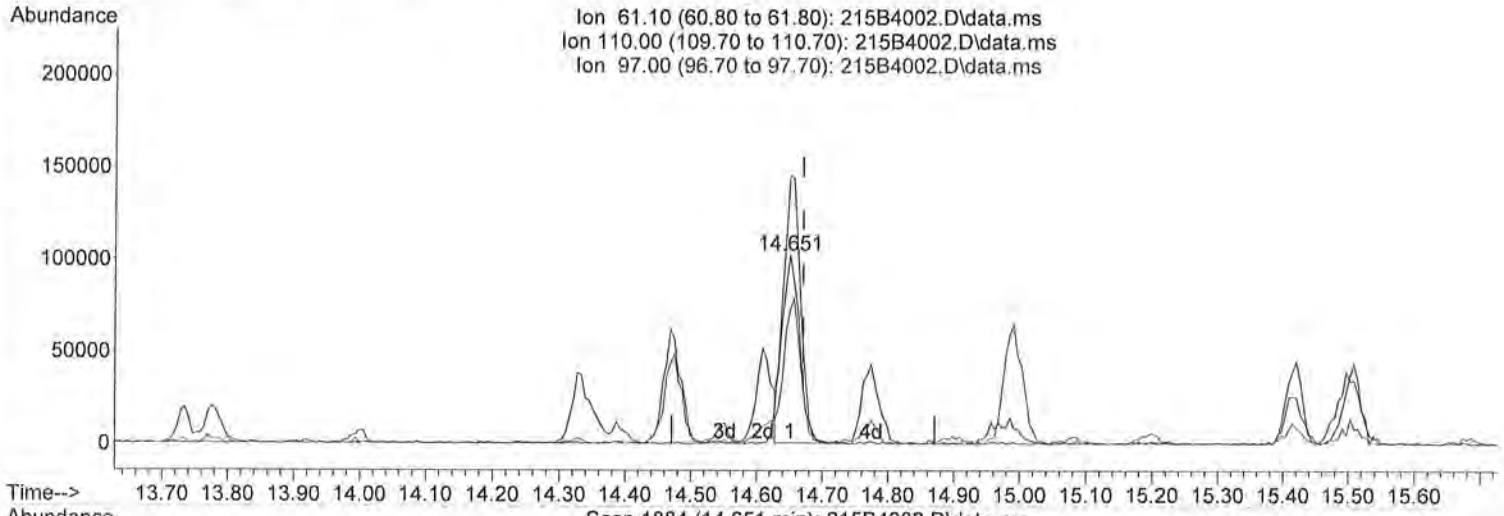
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

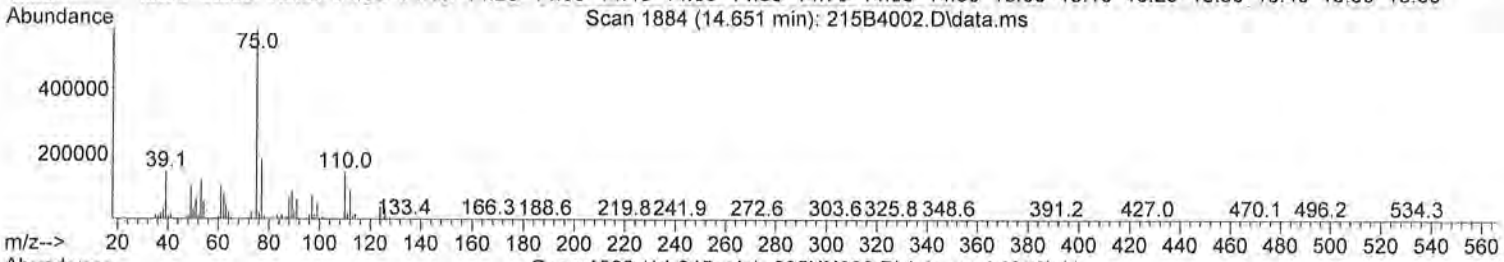
Instrument ID:	OVGcms-f
Sequence/Batch ID:	AA64811/ 230402
Data File Prefix:	0153 4
Date and Time Range of MIs:	02/04/21 1338-1348 02/05/21 0808
Reviewer Print Name:	Marie Gonzalez
Reviewer Signature:	Marie Gonzalez
Date of Review:	2/5/21

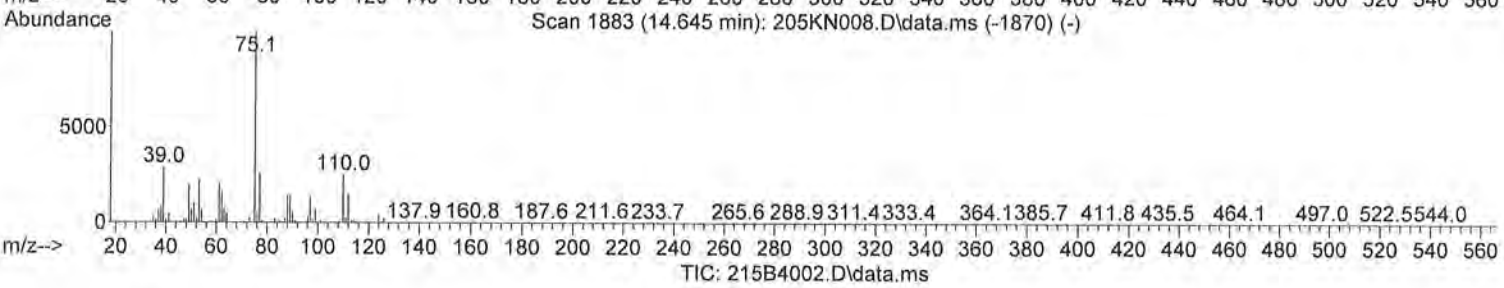
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4002.D\data.ms

(77) 1,2,3-Trichloropropane

14.651min (-0.020) 31.11 ug/L

response 185938

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	147.07#
97.00	49.10	86.84#
0.00	0.00	0.00

Select One:

~~[ ]~~ Original Integration [ ] Manual Integration

Select reason for manual integration:

~~[ ]~~ Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

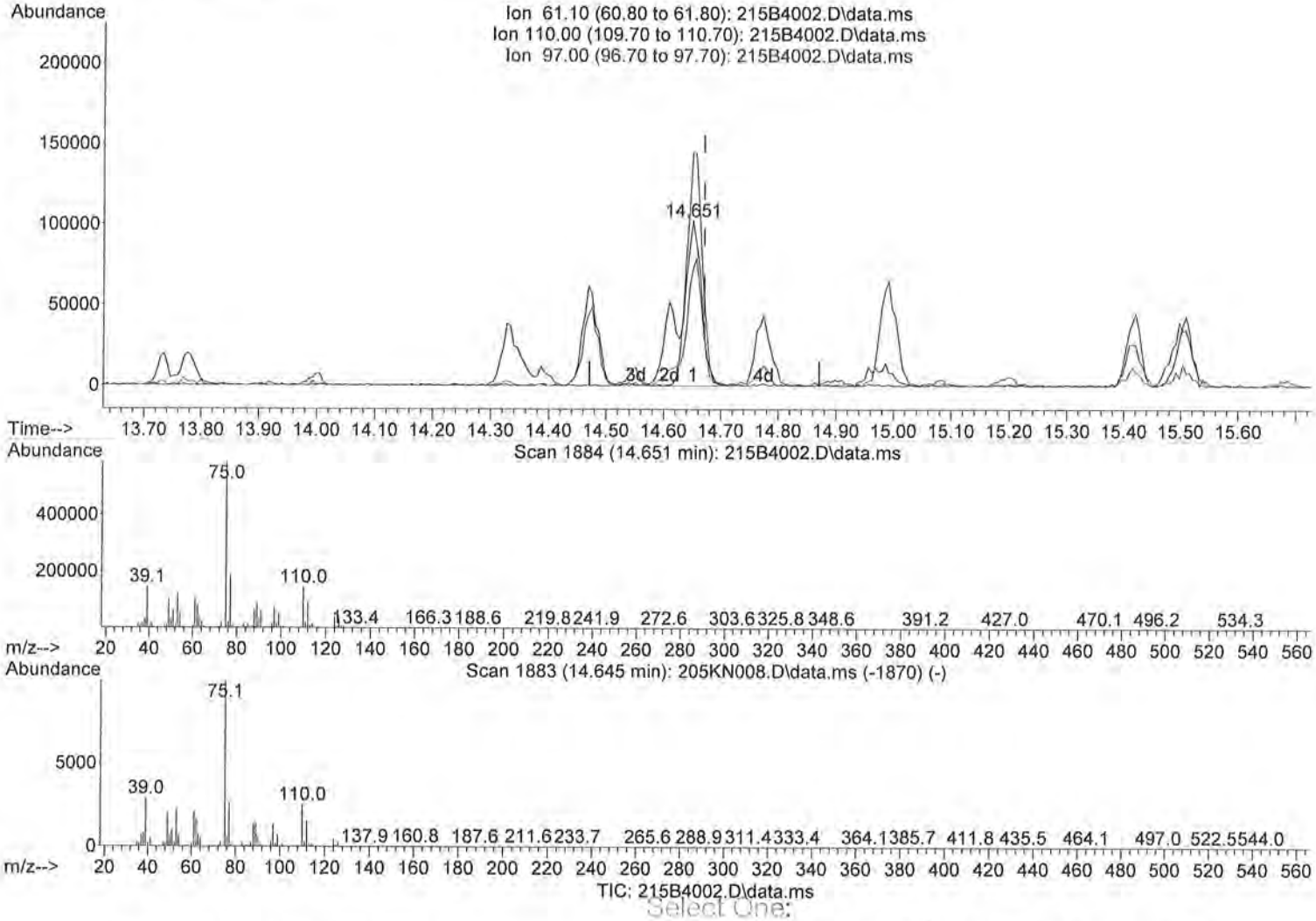
Review by/Date W 02/05/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.651min (-0.020) 45.91 ug/L m

response 274375

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	99.67#
97.00	49.10	58.85
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

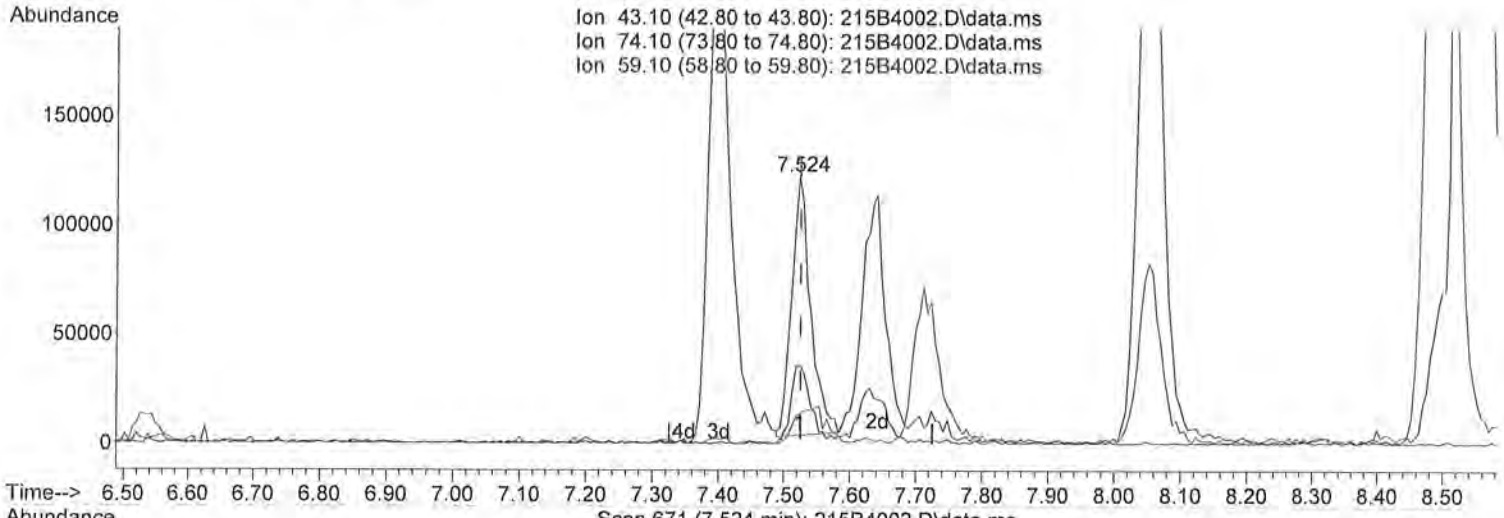
Review by/Date JW 02/05/21

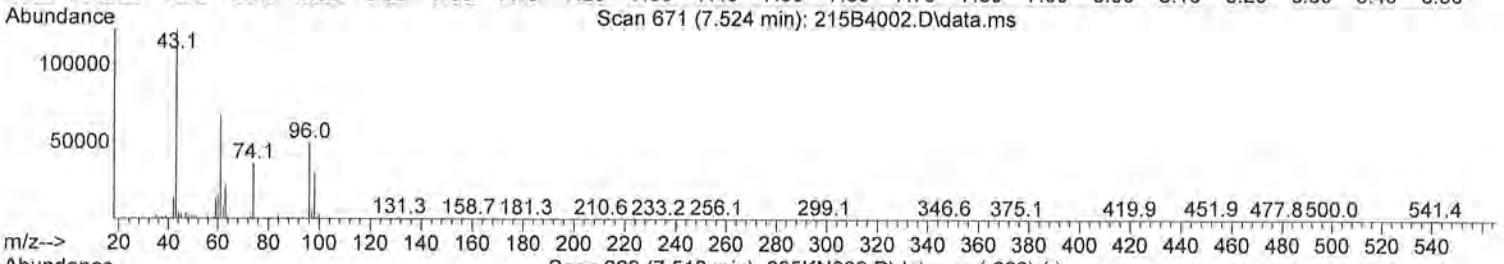
Review by/Date:

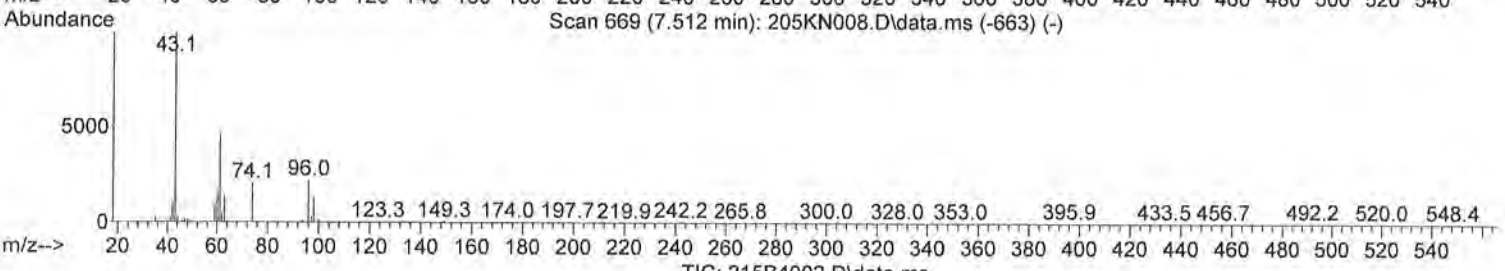
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4002.D\data.ms

(17) Methyl Acetate

7.524min (-0.001) 25.60 ug/L

response 236929

Ion	Exp%	Act%
43.10	100.00	100.00
74.10	22.30	34.33#
59.10	18.50	23.38#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

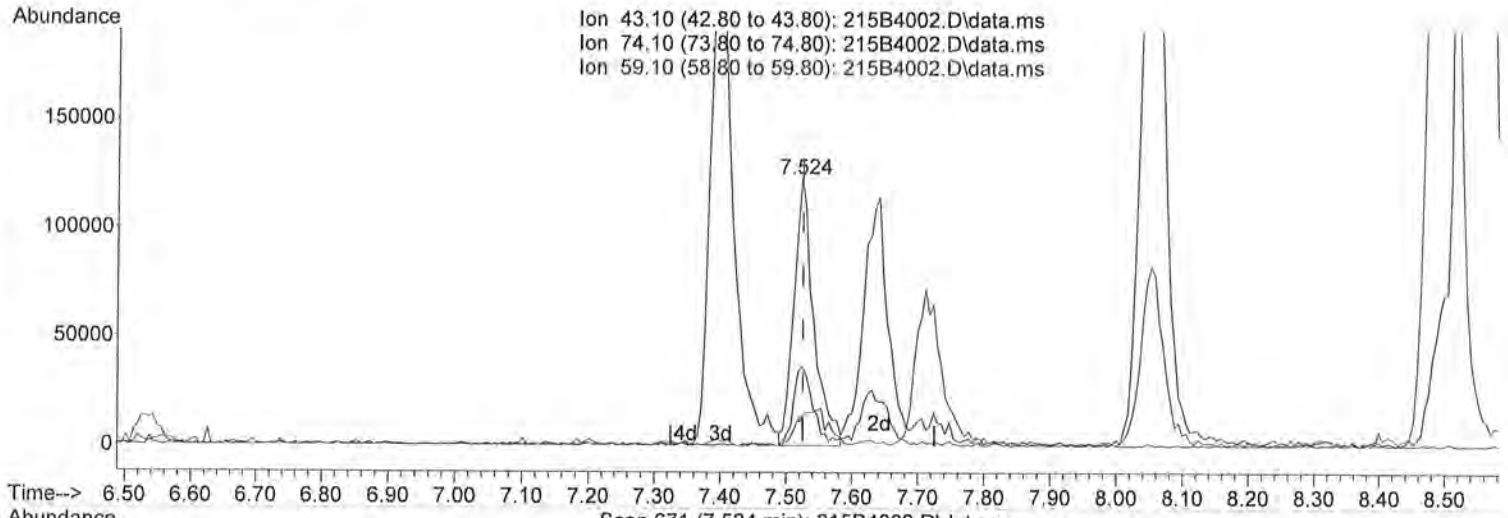
Review by/Date [illegible] 02/05/21

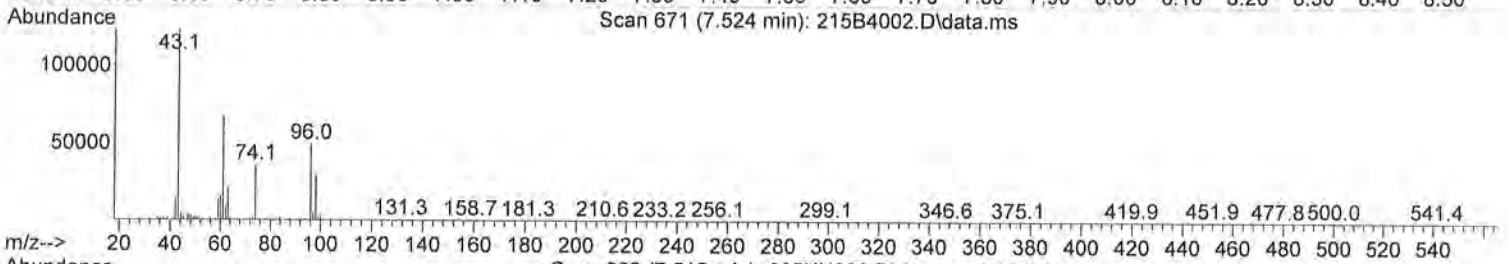
Review by/Date:

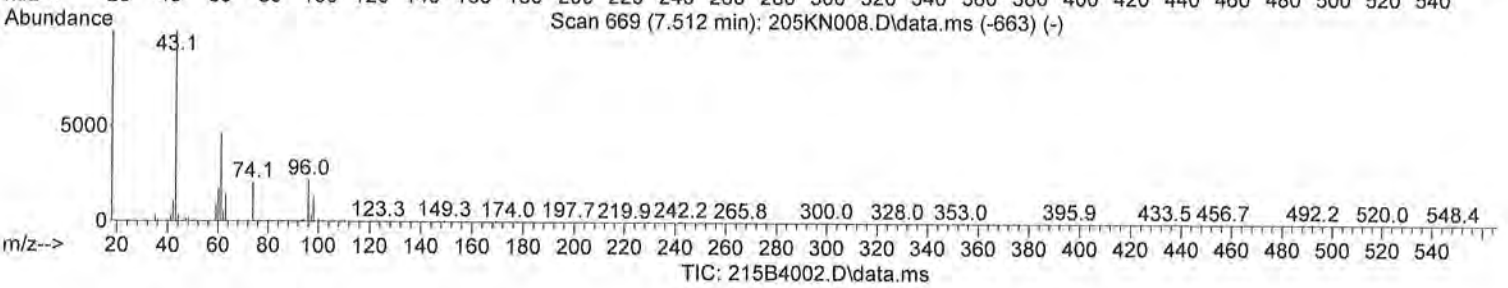
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4002.D\data.ms

(17) Methyl Acetate

7.524min (-0.001) 28.16 ug/L m

response 260607

Ion	Exp%	Act%
43.10	100.00	100.00
74.10	22.30	31.21#
59.10	18.50	21.26
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

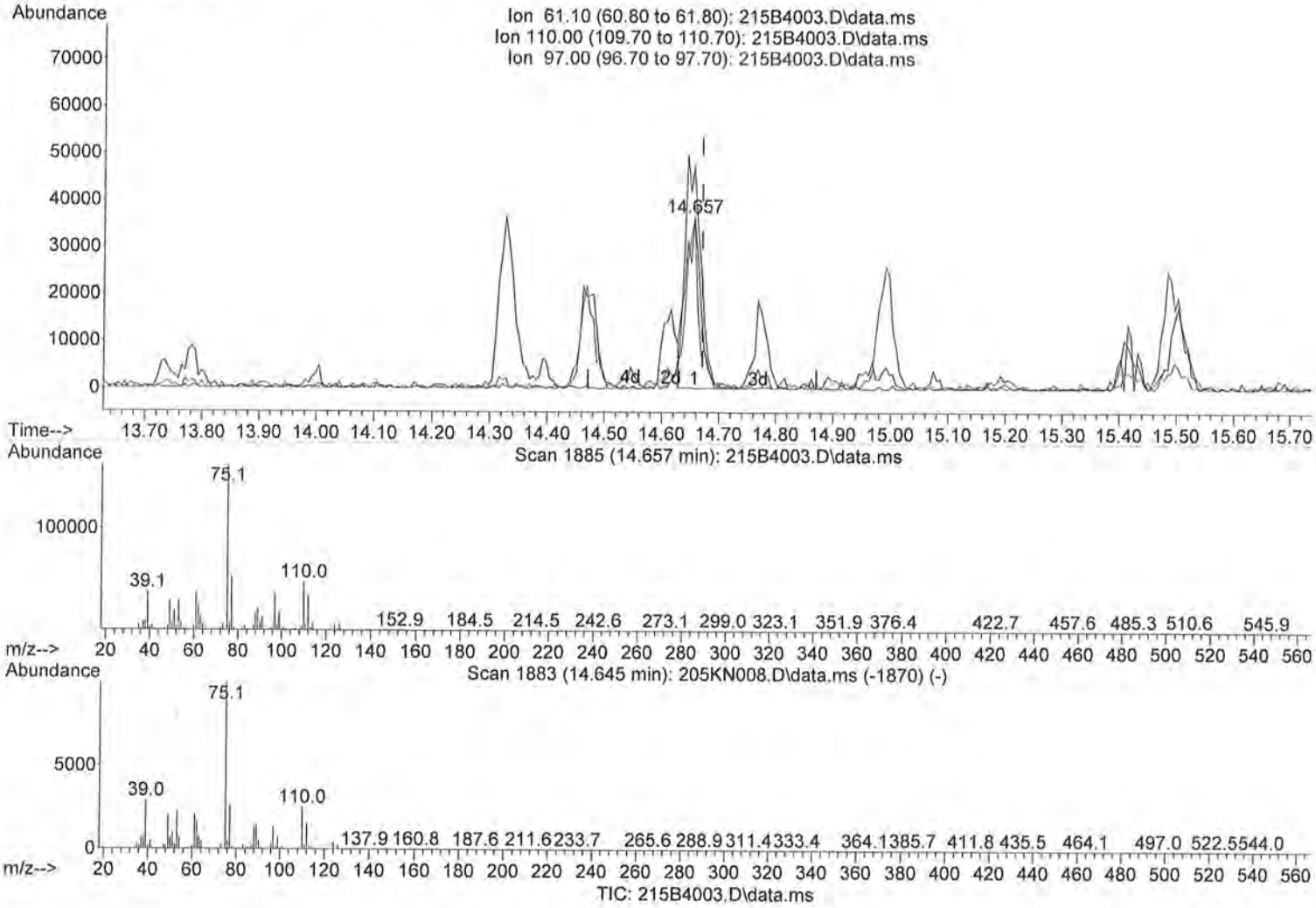
Review by/Date W 2/05/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



TIC: 215B4003.D\data.ms

(77) 1,2,3-Trichloropropane

14.657min (-0.014) 11.30 ug/L

response 68479

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	145.39#
97.00	49.10	92.39#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

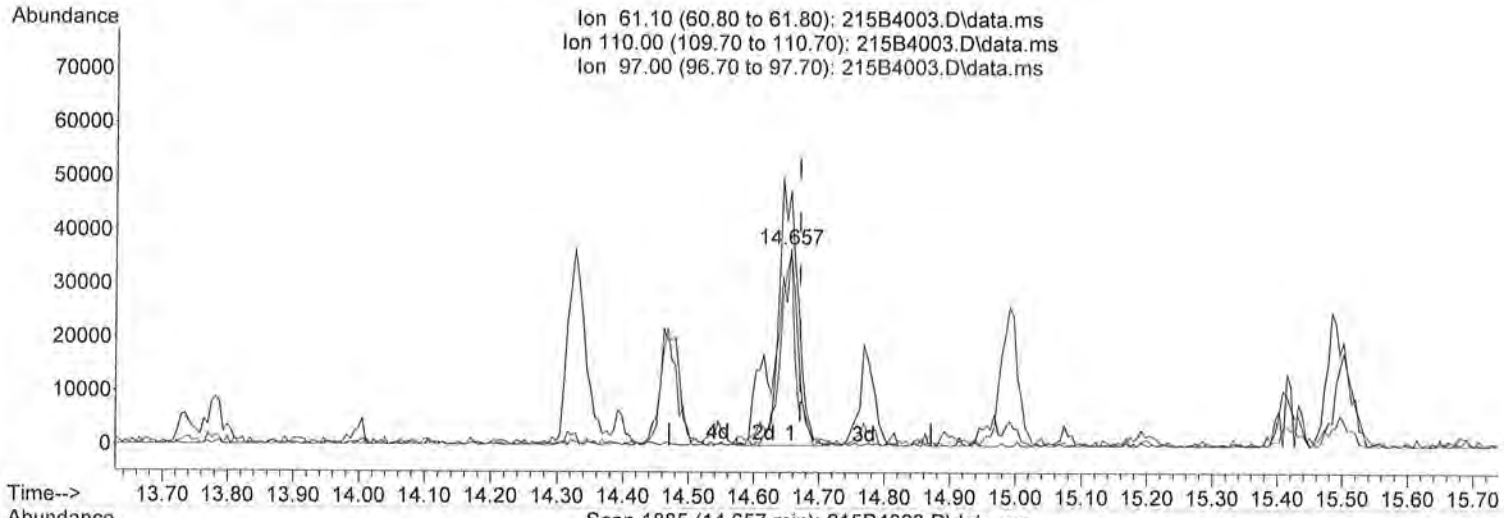
Review by/Date W 02/05/21

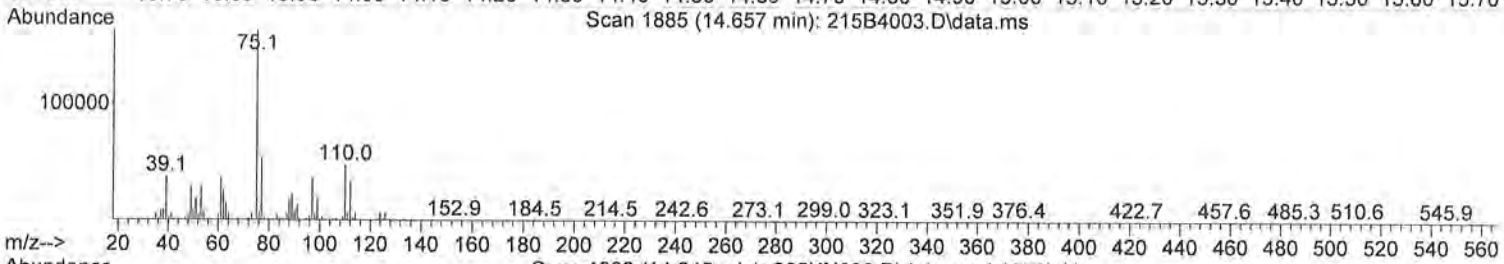
Review by/Date:

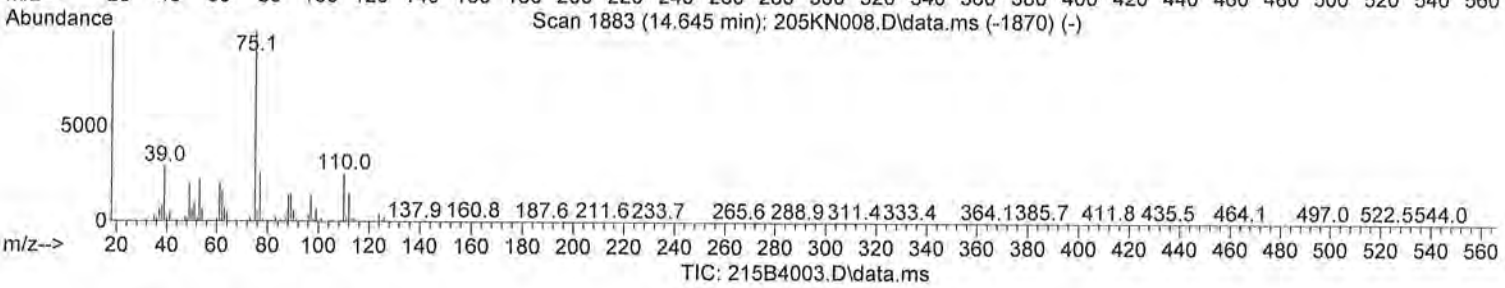
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4003.D\data.ms

(77) 1,2,3-Trichloropropane

14.657min (-0.014) 15.97 ug/L m

response 96821

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	102.83#
97.00	49.10	65.34#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

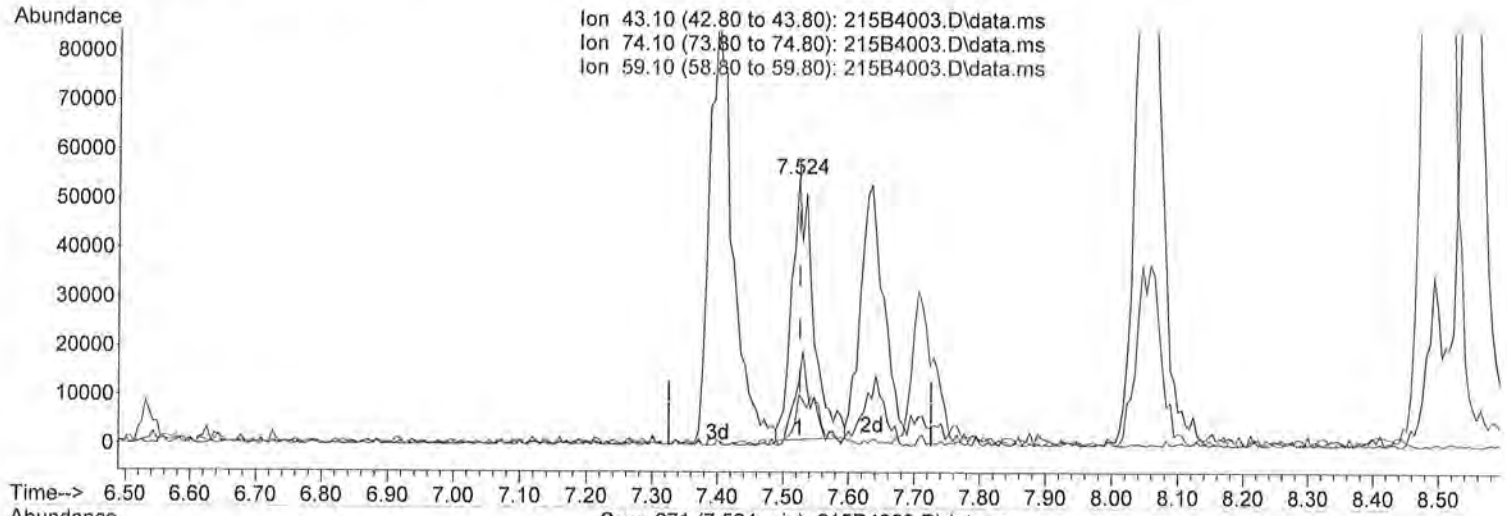
Review by/Date W 02/05/21

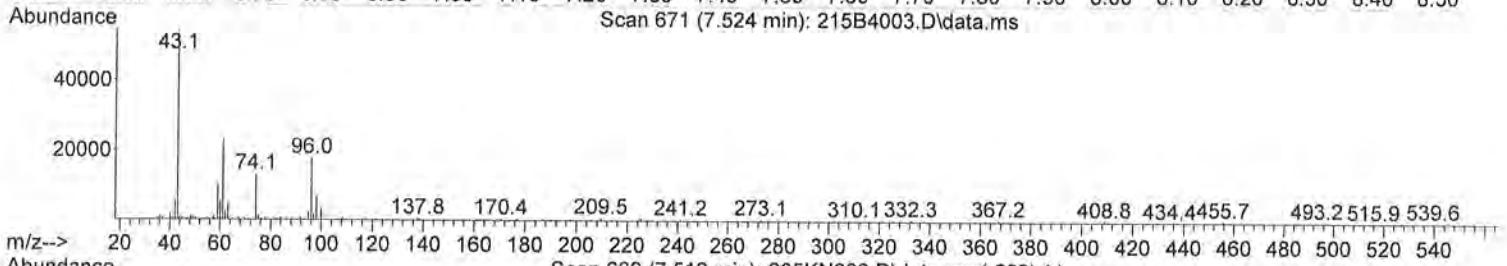
Review by/Date:

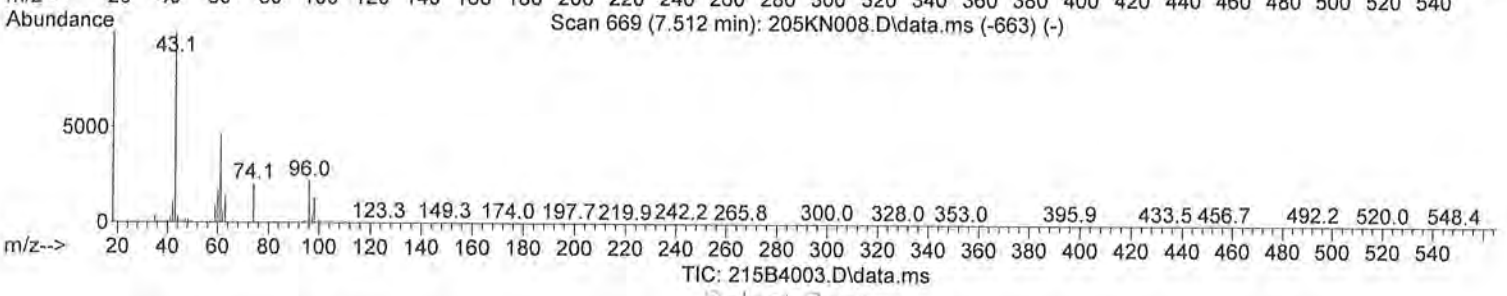
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4003.D\data.ms

(17) Methyl Acetate

7.524min (-0.002) 12.42 ug/L

response 122053

Ion	Exp%	Act%
43.10	100.00	100.00
74.10	22.30	29.44#
59.10	18.50	21.60
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

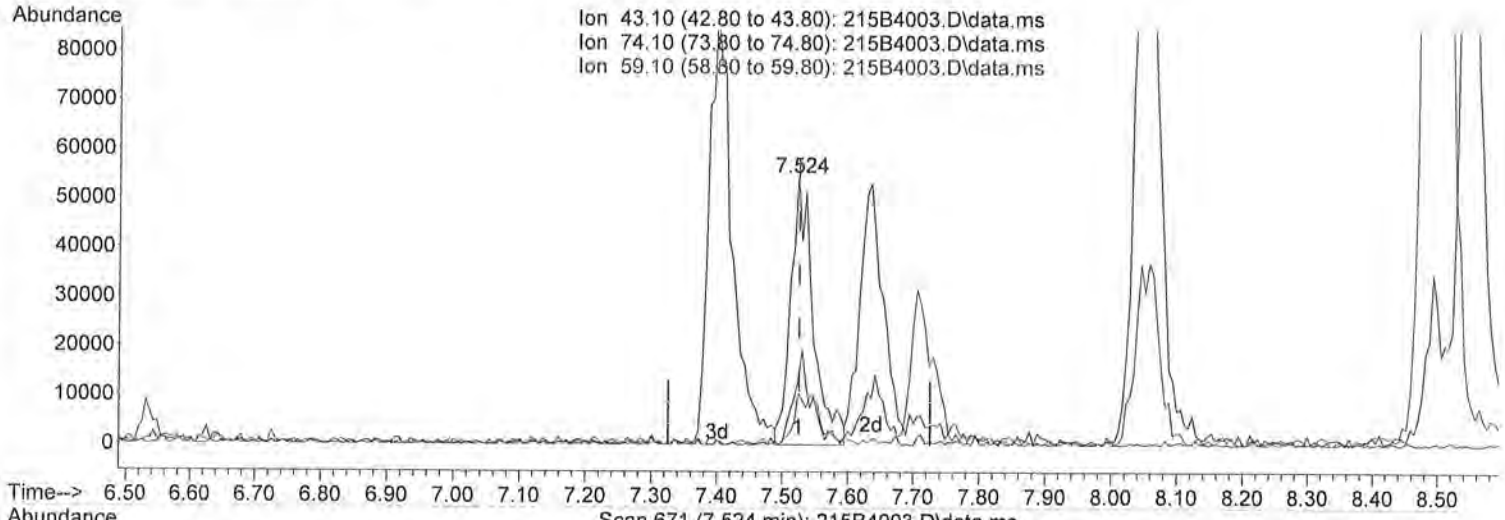
Review by/Date W 02/05/21

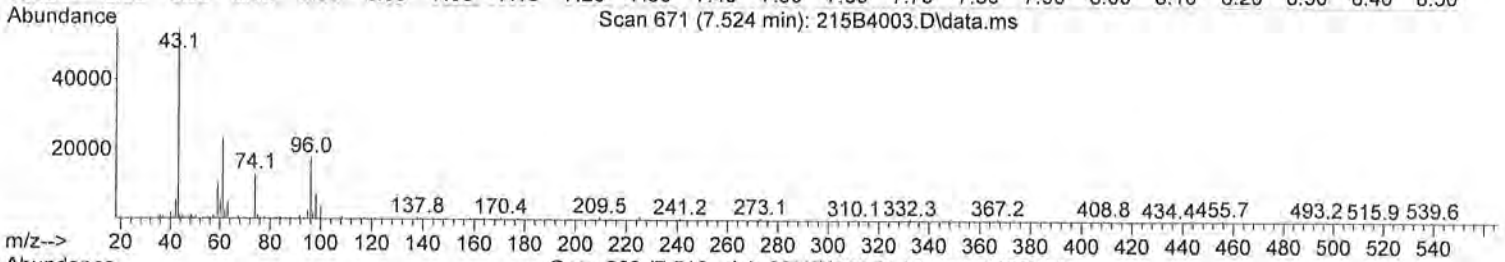
Review by/Date:

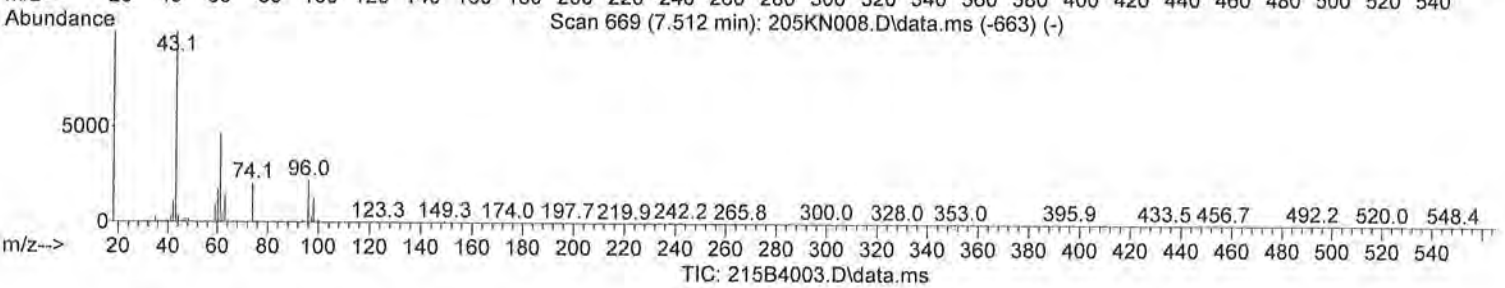
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4003.D\data.ms

(17) Methyl Acetate

7.524min (-0.002) 13.25 ug/L m

response 130289

Ion	Exp%	Act%
43.10	100.00	100.00
74.10	22.30	27.58#
59.10	18.50	20.23
0.00	0.00	0.00

Select One:

[] Original Integration [] Manual Integration

Select reason for manual integration:

[] Poor integration (peak tailing, baseline selection)

[] Incorrect peak selection/Peak not found

[] Hump integration

[] Baseline drop for split peaks

[] ISTD reintegration

[] Other:

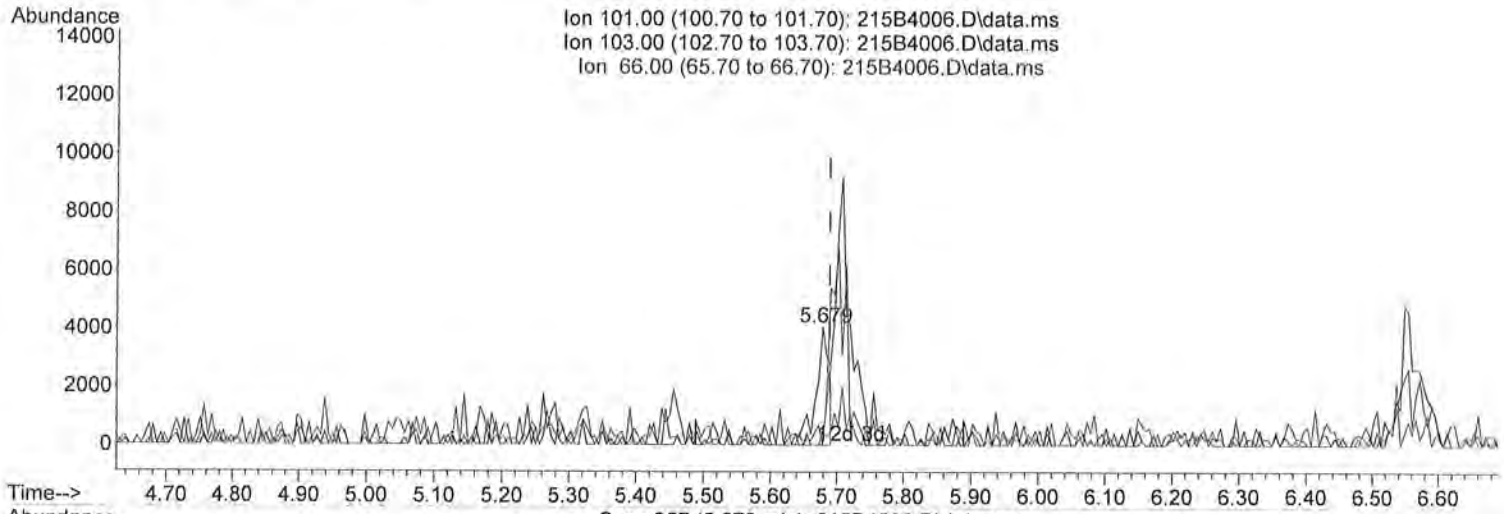
Review by/Date KJ 02/05/21

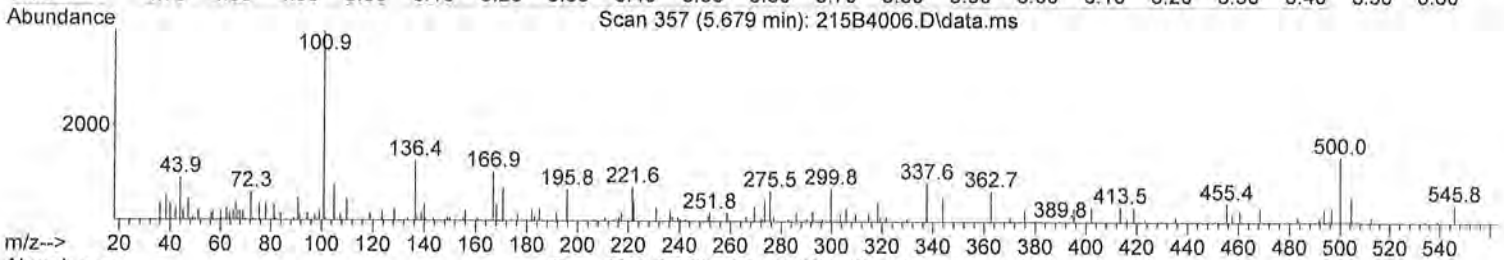
Review by/Date:

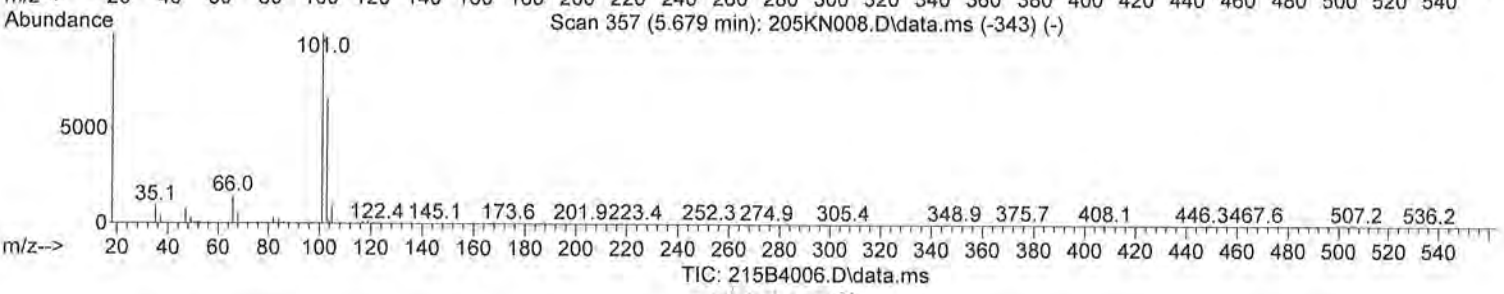
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4006.D
Acq On : 4 Feb 2021 10:06 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 13:36:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4006.D\data.ms

(7) Trichlorofluoromethane

5.679min (-0.010) 0.33 ug/L

response 5773

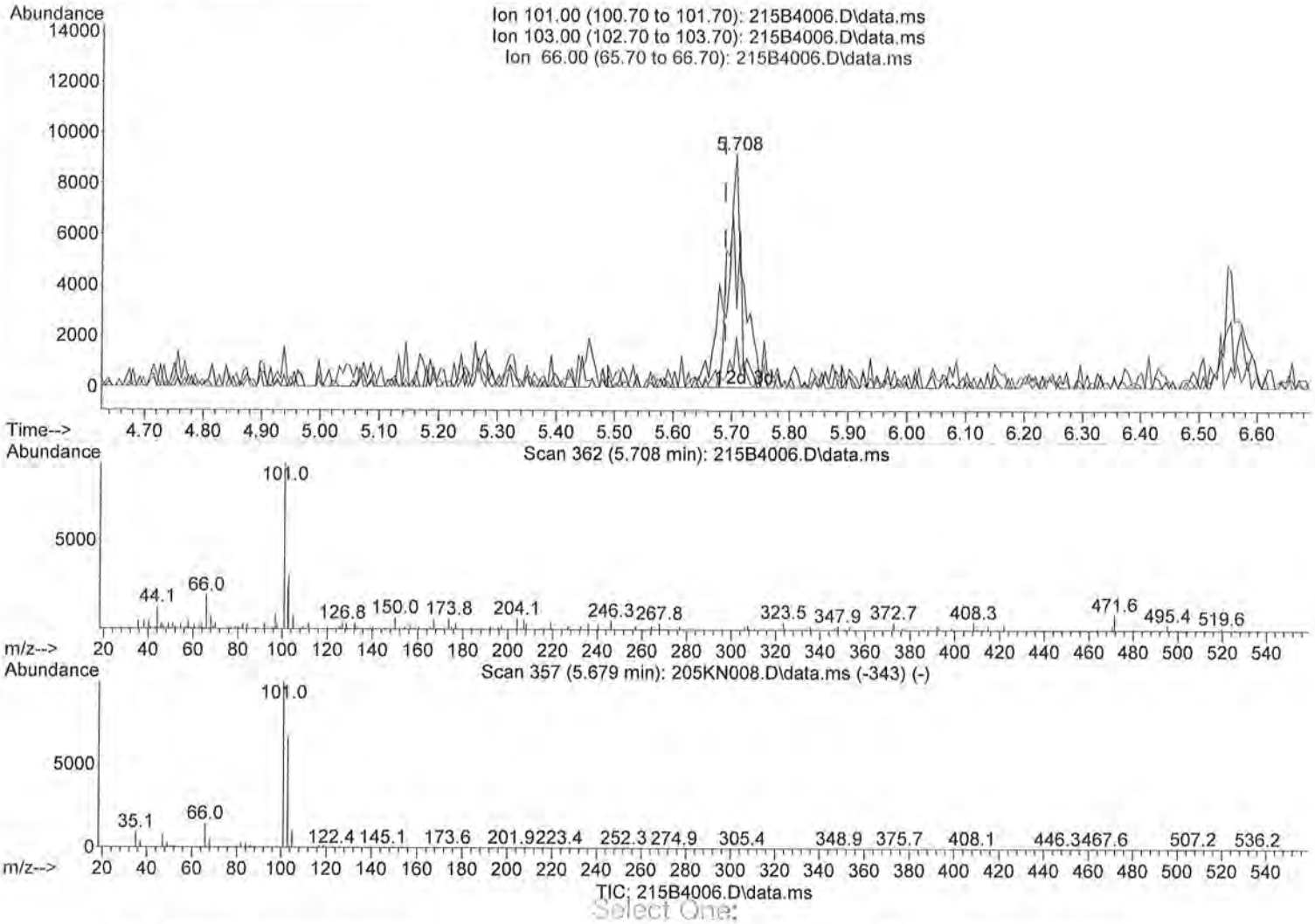
Ion	Exp%	Act%
101.00	100.00	100.00
103.00	65.30	0.00#
66.00	13.60	0.00#
0.00	0.00	0.00

Peak Type:
[x] Normal Integration [ ] Manual Integration
Select reason for manual integration:
[x] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 2/05/21
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4006.D
Acq On : 4 Feb 2021 10:06 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 13:36:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



TIC: 215B4006.D\data.ms

(7) Trichlorofluoromethane

5.708min (+ 0.019) 1.13 ug/L m

response 20077

Ion	Exp%	Act%
101.00	100.00	100.00
103.00	65.30	0.00#
66.00	13.60	0.00#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

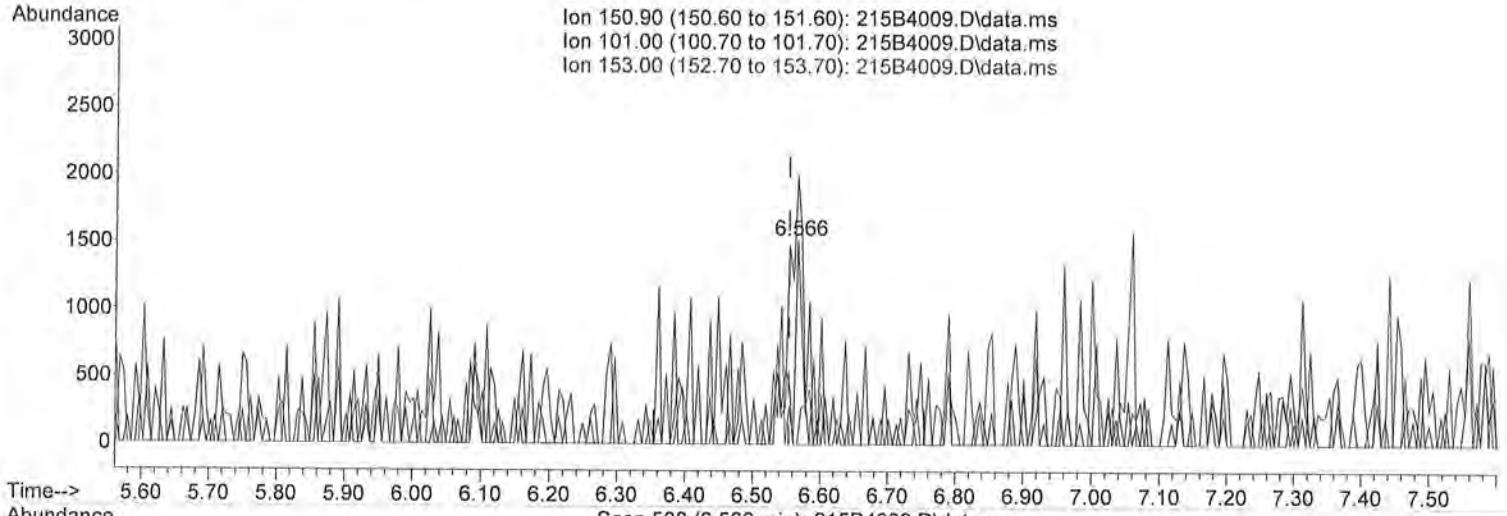
Review by/Date W 02/05/21

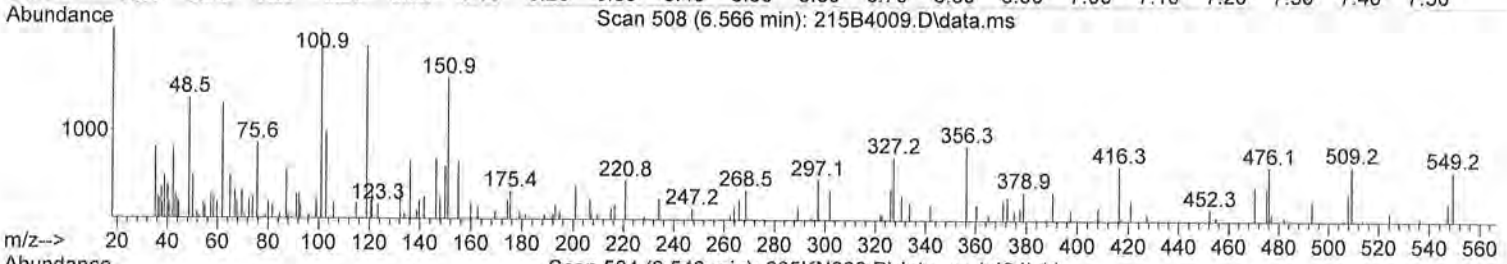
Review by/Date:

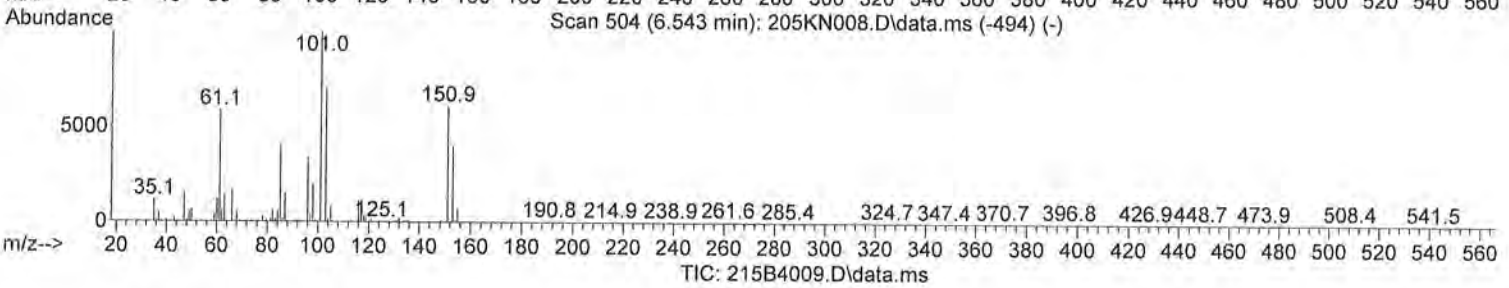
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4009.D
Acq On : 4 Feb 2021 11:35 am
Operator : KKW
Sample : AE00180-03@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 13:37:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4009.D\data.ms

(10) Trichlorotrifluoroethane

6.566min (+ 0.012) 0.21 ug/L

response 1374

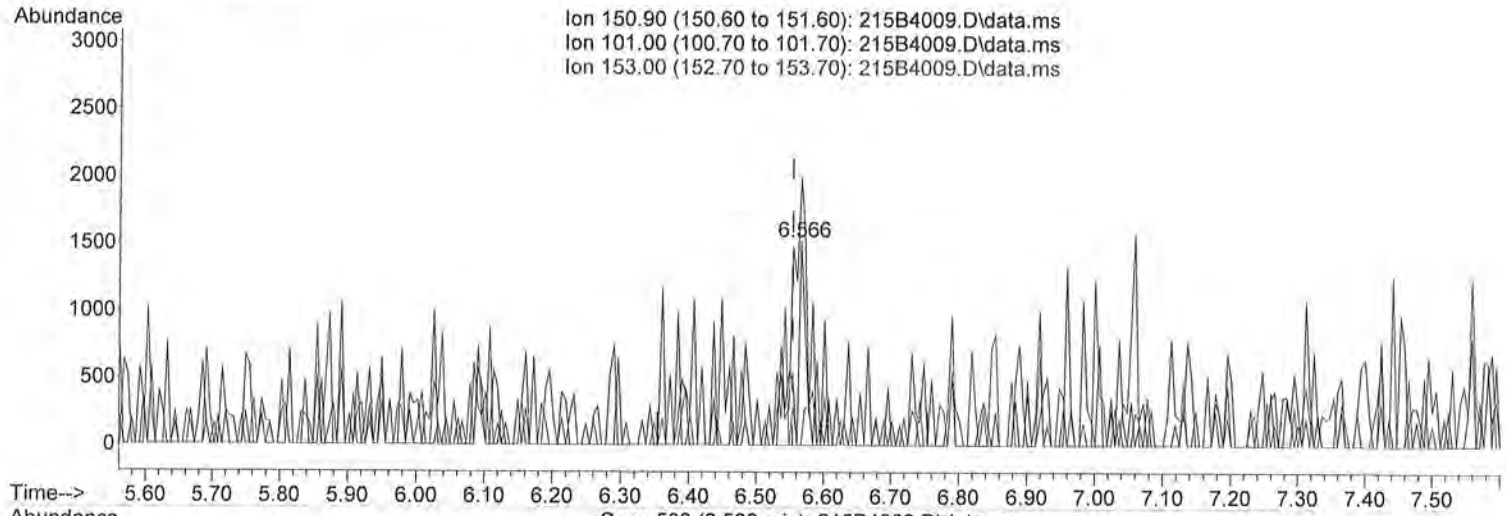
Ion	Exp%	Act%
150.90	100.00	100.00
101.00	163.00	201.82#
153.00	64.90	0.00#
0.00	0.00	0.00

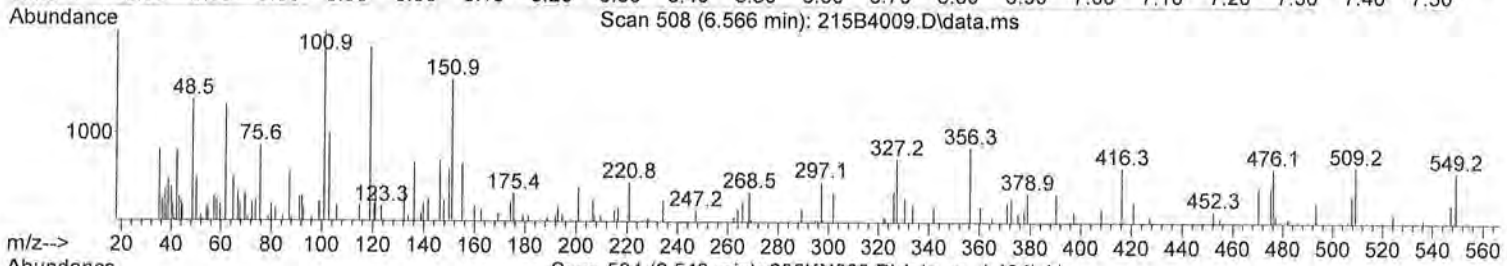
Select One:
[X] Original Integration [ ] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 02/05/21
Review by/Date:

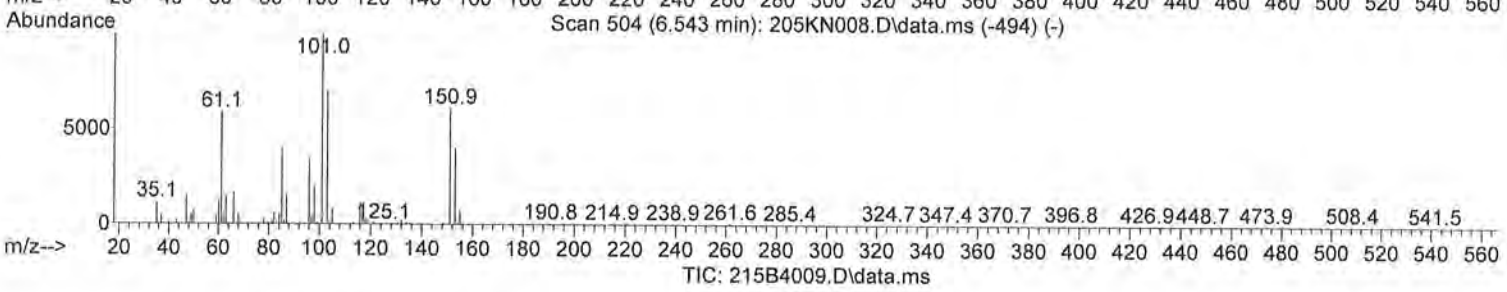
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4009.D
Acq On : 4 Feb 2021 11:35 am
Operator : KKW
Sample : AE00180-03@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 13:37:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4009.D\data.ms

(10) Trichlorotrifluoroethane

6.566min (+ 0.012) 0.35 ug/L m

response 2319

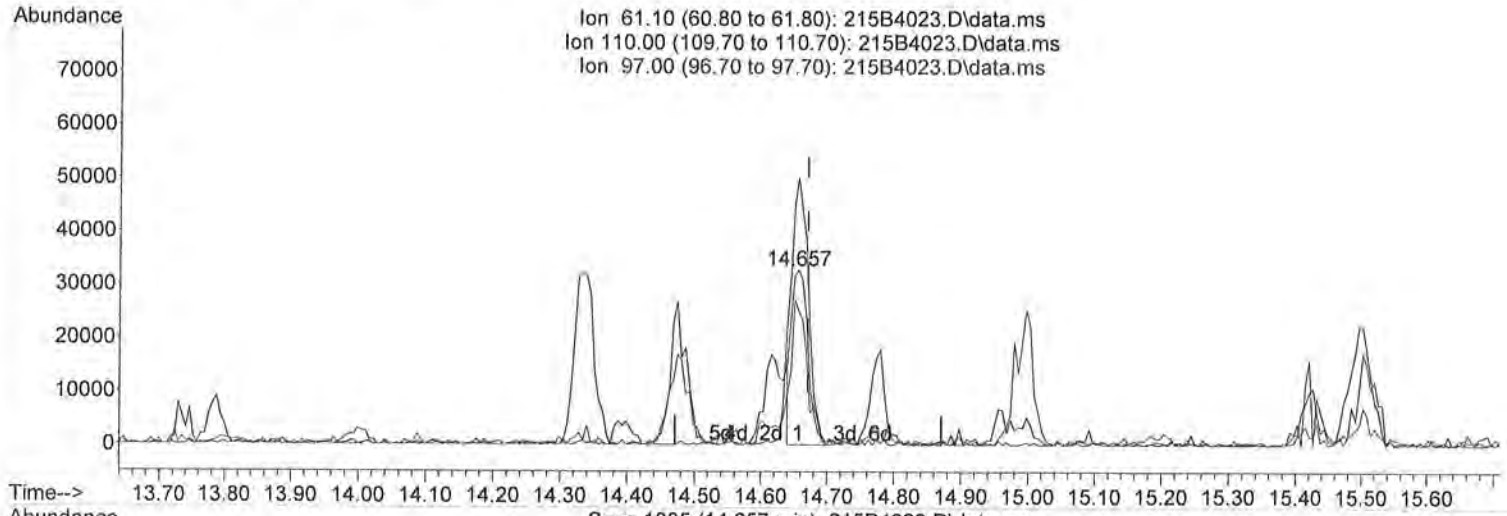
Ion	Exp%	Act%
150.90	100.00	100.00
101.00	163.00	119.58#
153.00	64.90	0.00#
0.00	0.00	0.00

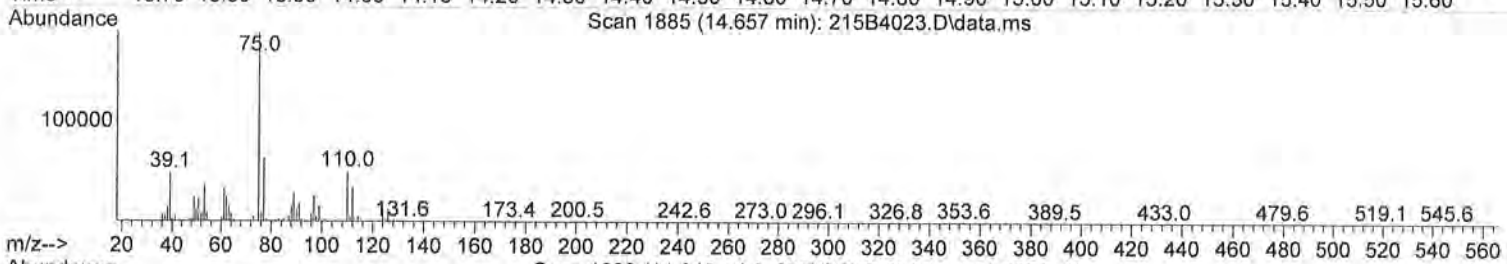
Review One:
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 02/05/21
Review by/Date:

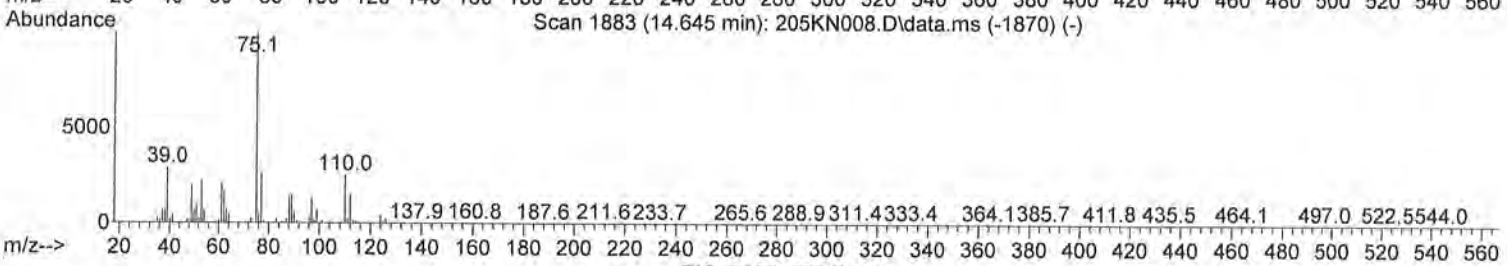
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4023.D
Acq On : 4 Feb 2021 6:29 pm
Operator : KKW
Sample : 1B04020-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4023.D\data.ms

(77) 1,2,3-Trichloropropane

14.657min (-0.014) 10.65 ug/L

response 58035

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	171.12#
97.00	49.10	85.94#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

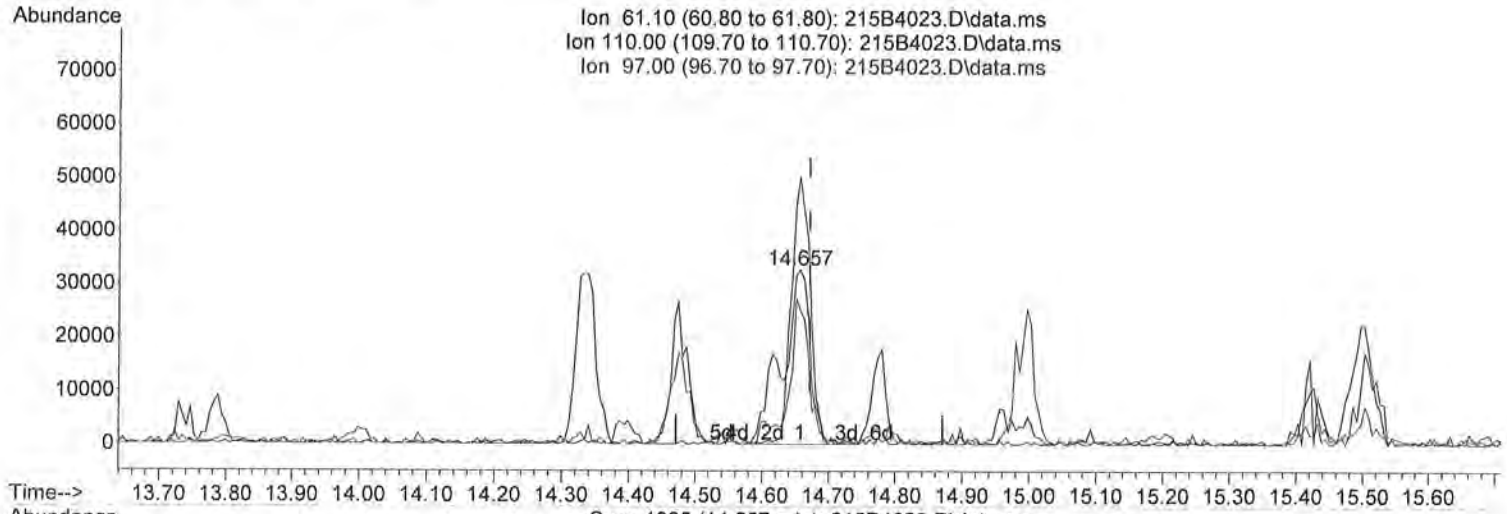
Review by/Date W 02/05/21

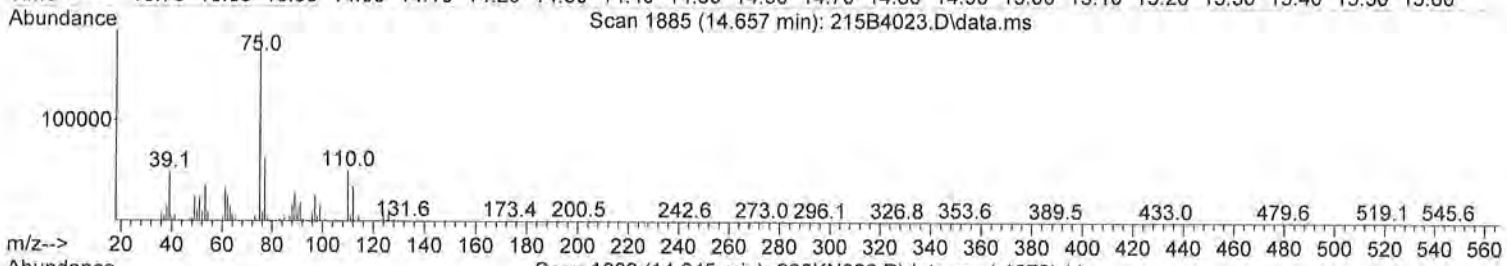
Review by/Date:

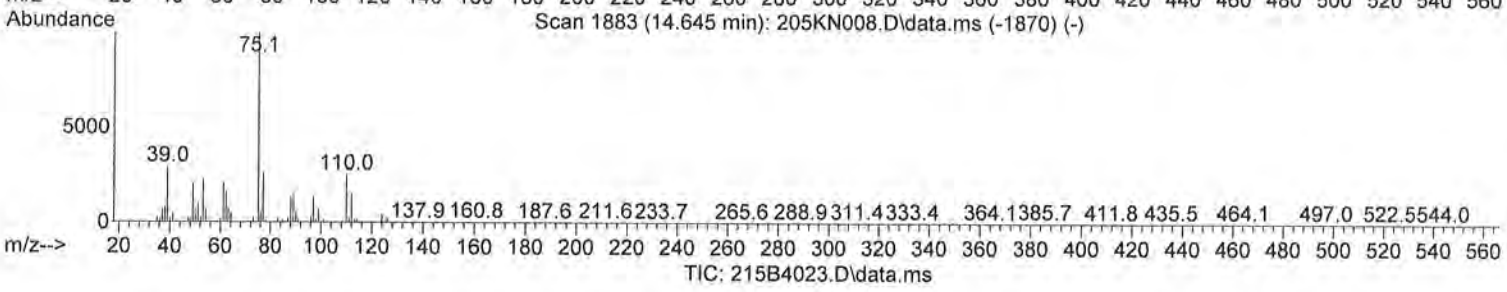
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4023.D
Acq On : 4 Feb 2021 6:29 pm
Operator : KKW
Sample : 1B04020-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4023.D\data.ms

(77) 1,2,3-Trichloropropane

14.657min (-0.014) 17.48 ug/L m

response 95278

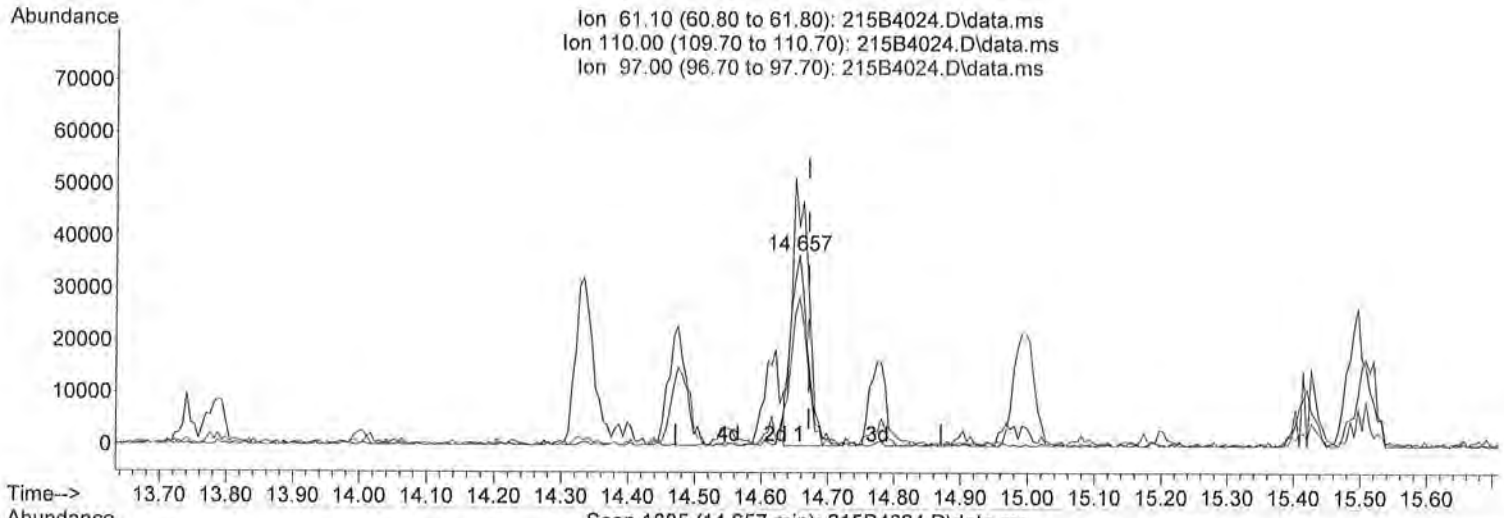
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	104.23#
97.00	49.10	52.34
0.00	0.00	0.00

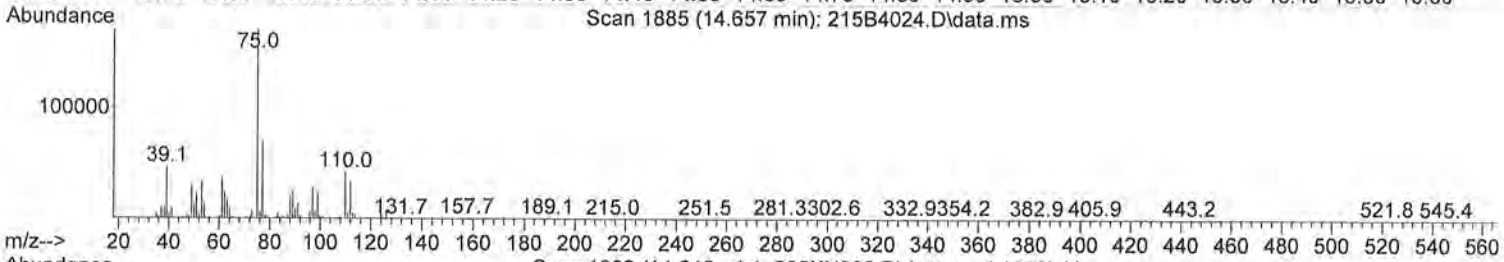
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 02/05/21
Review by/Date:

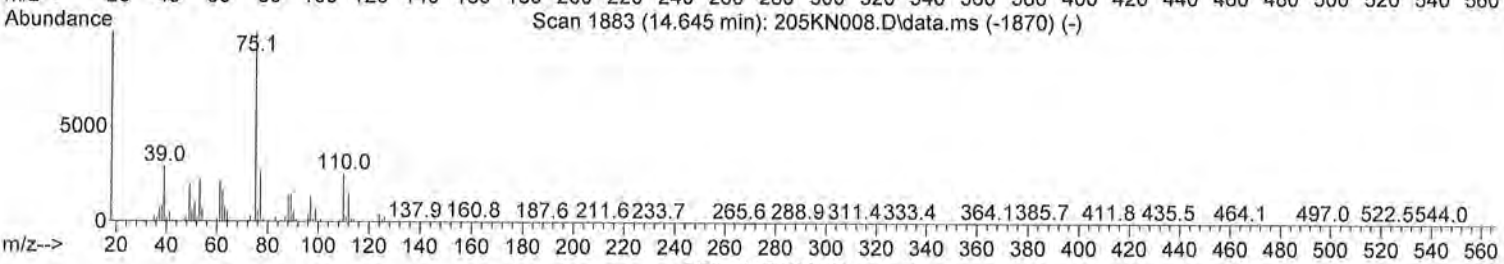
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4024.D
Acq On : 4 Feb 2021 6:59 pm
Operator : KKW
Sample : 1B04020-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4024.D\data.ms

(77) 1,2,3-Trichloropropane

14.657min (-0.014) 11.29 ug/L

response 62157

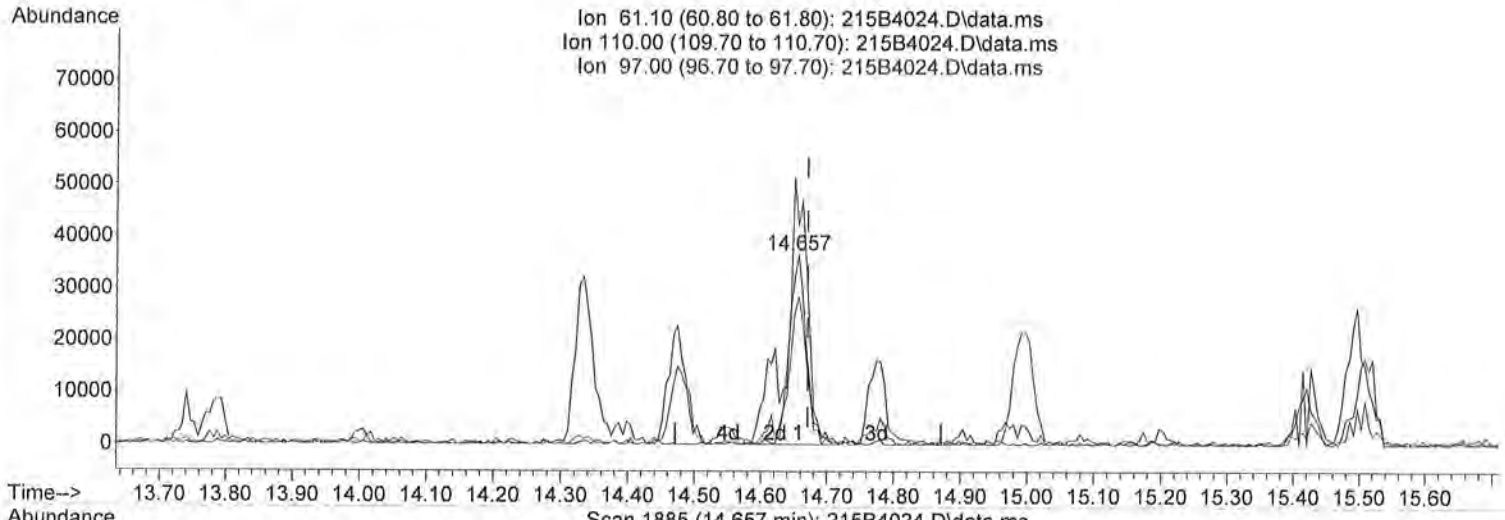
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	150.11#
97.00	49.10	81.61#
0.00	0.00	0.00

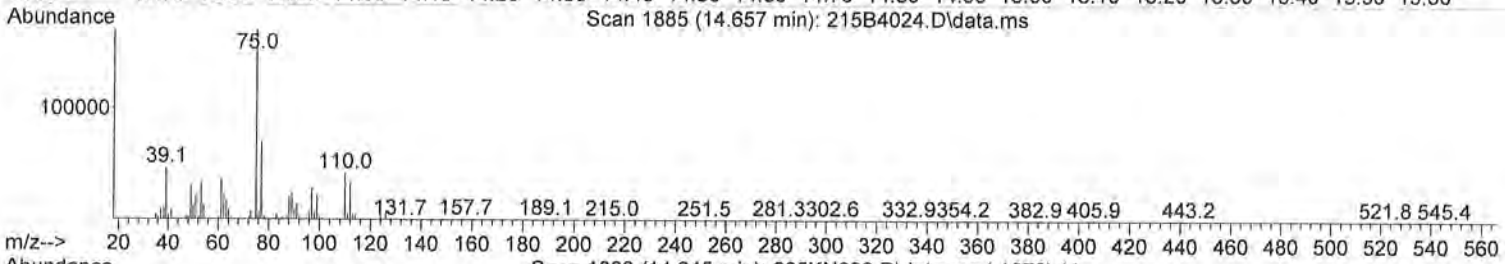
[X] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 02/05/21
Review by/Date:

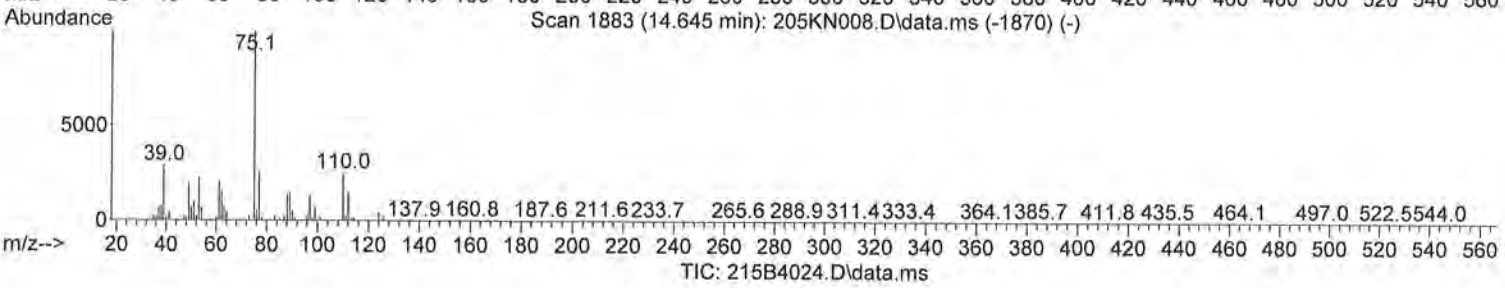
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4024.D
Acq On : 4 Feb 2021 6:59 pm
Operator : KKW
Sample : 1B04020-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B4024.D\data.ms

(77) 1,2,3-Trichloropropane

14.657min (-0.014) 16.97 ug/L m

response 93462

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	99.83#
97.00	49.10	54.28
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date N 2/05/21

Review by/Date:

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1260521	50.00	ug/L		#-0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2600662	50.00	ug/L		-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1622445	50.00	ug/L		#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1538501	50.00	ug/L		# 0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	703375	54.10	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.20%				
52) D8-Toluene	11.784	98	3126029	48.66	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 97.32%				
73) Bromofluorobenzene	14.334	95	1574913	54.35	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.70%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	302494	18.59	ug/L		100
3) Chloromethane	4.404	50	192693	10.29	ug/L		94
4) Vinyl Chloride	4.586	62	247247	16.26	ug/L		95
5) Bromomethane	5.233	94	75113	18.46	ug/L		97
6) Chloroethane	5.432	64	132543	19.81	ug/L		92
7) Trichlorofluoromethane	5.691	101	359314	18.99	ug/L		99
8) Diethyl ether	6.184	59	362843	34.48	ug/L		90
9) 1,1-Dichloroethene	6.531	96	499561	45.90	ug/L	#	79
10) Trichlorotrifluoroethane	6.555	151	337079	46.25	ug/L		97
11) Acrolein	7.019	56	784094	358.24	ug/L		94
12) Iodomethane	6.778	142	3134157	268.52	ug/L	#	90
13) Carbon Disulfide	6.619	76	8606468	241.43	ug/L		97
14) 3-chloropropene	7.195	41	734241	34.14	ug/L	#	79
15) Acetone	7.401	43	547490	184.87	ug/L		98
16) Methylene Chloride	7.336	84	643457	48.76	ug/L	#	72
17) Methyl Acetate	7.524	43	260607m	28.16	ug/L		
18) t-1,2-Dichloroethene	7.548	96	596794	47.39	ug/L	#	78
19) Methyl tert-butyl ether	7.636	73	1453265	45.60	ug/L		92
20) Acetonitrile	8.018	41	744356	310.04	ug/L		96
21) Isopropyl ether	8.059	45	1442306	34.09	ug/L	#	85
22) Chloroprene	8.276	88	616921	51.15	ug/L		91
23) 1,1-Dichloroethane	8.311	63	1055711	40.76	ug/L		98
24) Acrylonitrile	8.388	53	1435876	367.10	ug/L		98
25) Vinyl Acetate	8.541	43	5227427	196.98	ug/L	#	90
26) c-1,2-Dichloroethene	8.952	96	665325	49.88	ug/L		83
27) 2,2-Dichloropropane	9.075	77	969981	43.91	ug/L		98
28) Bromochloromethane	9.187	128	285215	60.54	ug/L		99
29) Cyclohexane	9.193	56	883086	31.34	ug/L	#	82
30) Chloroform	9.222	83	1186591	47.97	ug/L		96
32) Dibromofluoromethane	9.434	113	703375	54.10	ug/L	#	90
33) 2-Butanone	9.545	72	328166	227.72	ug/L	#	56
34) 1,1,1-Trichloroethane	9.492	97	985497	48.26	ug/L		96
35) 1,1-Dichloropropene	9.604	75	858669	41.33	ug/L	#	91
36) Propionitrile	9.898	54	713787	402.57	ug/L		93
37) Methacrylonitrile	9.910	41	3315112	378.69	ug/L		86
38) Isobutyl Alcohol	9.910	43	801605	757.11	ug/L		93
40) Carbon Tetrachloride	9.416	117	882843	45.31	ug/L		89
41) Benzene	9.880	78	2534246	42.62	ug/L		93
42) 1,2-Dichloroethane	10.092	62	870850	40.15	ug/L	#	94
43) Trichloroethene	10.450	130	614476	51.17	ug/L	#	87
44) Methyl cyclohexane	10.456	83	1186950	39.79	ug/L		86
45) Dibromomethane	10.903	93	368720	43.65	ug/L		90
46) 1,2-Dichloropropane	10.991	63	628580	36.28	ug/L		93
47) Bromodichloromethane	11.020	83	856904	44.44	ug/L		94
48) Methyl Methacrylate	11.079	69	416662	37.74	ug/L	#	85
49) 1,4-Dioxane	11.202	88	140368	931.05	ug/L		87
50) 2-Chloroethyl vinyl ether	11.490	63	1938704	231.39	ug/L	#	86
51) C-1,3-Dichloropropene	11.608	75	1079786	41.57	ug/L		92

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

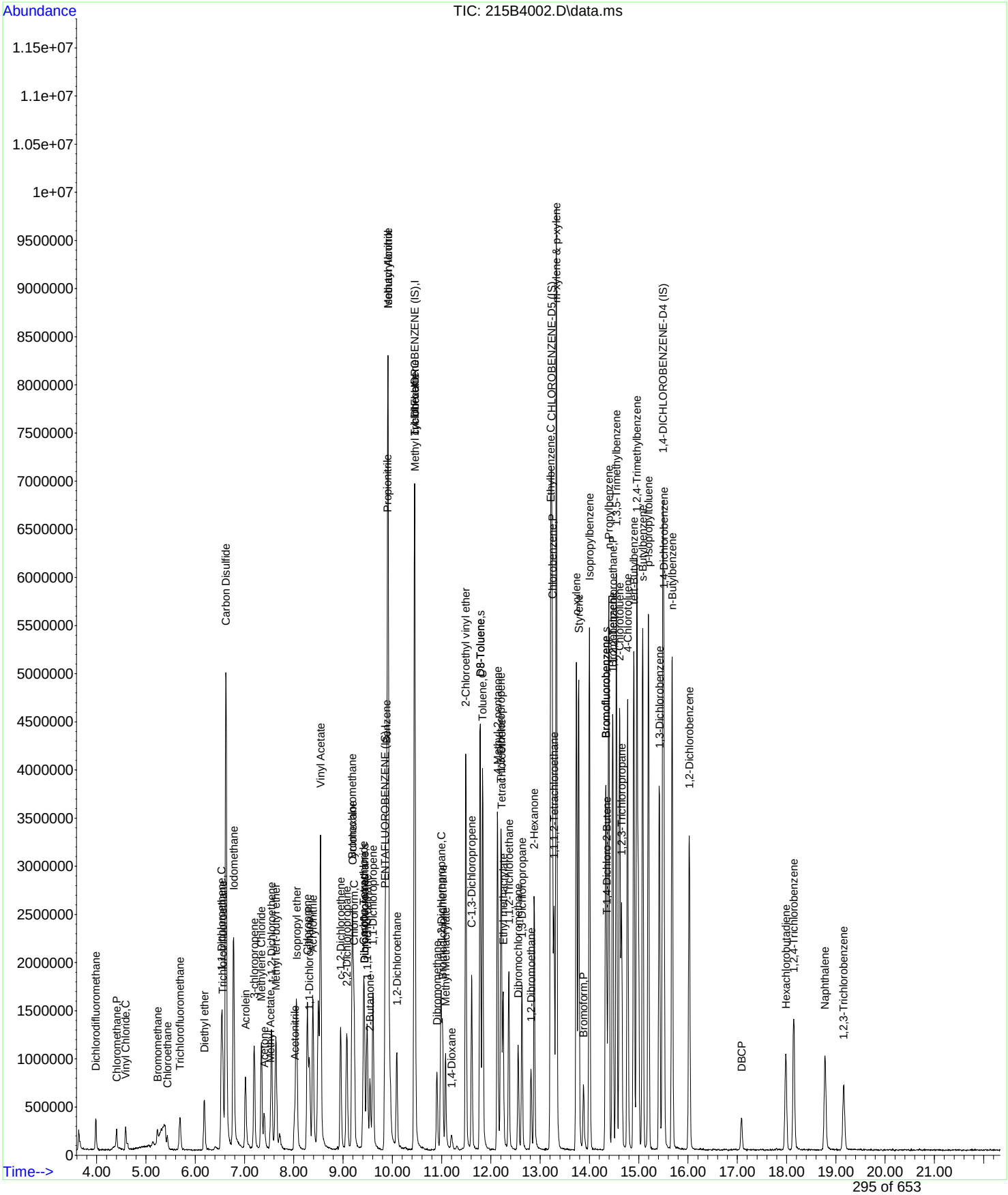
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3126029	48.66	ug/L		94
54) 4-Methyl-2-pentanone	12.136	100	451138	255.68	ug/L	#	68
56) Toluene	11.831	92	1863055	53.82	ug/L		93
57) T-1,3-Dichloropropene	12.201	75	988328	47.97	ug/L		94
58) Tetrachloroethene	12.213	164	484032	50.83	ug/L		97
59) Ethyl methacrylate	12.248	69	863712	46.87	ug/L		97
60) 1,1,2-Trichloroethane	12.366	97	638670	54.60	ug/L		92
61) Dibromochloromethane	12.554	129	631077	57.68	ug/L	#	96
62) 1,3-Dichloropropane	12.630	76	1099369	50.76	ug/L	#	82
63) 1,2-Dibromoethane	12.812	107	625566	57.46	ug/L		91
64) 2-Hexanone	12.877	43	1515396	190.07	ug/L	#	91
65) Ethylbenzene	13.212	106	1148137	54.57	ug/L		92
66) Chlorobenzene	13.247	112	2091852	59.98	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.282	131	649853	62.27	ug/L		96
68) m-xylene & p-xylene	13.329	106	2937469	120.29	ug/L		89
69) o-xylene	13.735	106	1541997	61.57	ug/L		89
70) Styrene	13.782	104	2629065	64.29	ug/L	#	86
71) Bromoform	13.876	173	306733	49.22	ug/L		96
72) Isopropylbenzene	13.999	105	4023931	61.04	ug/L		95
74) Bromofluorobenzene	14.334	95	1574913	54.35	ug/L	#	83
75) n-Propylbenzene	14.393	91	5071866	57.56	ug/L		95
76) 1,1,2,2-Tetrachloroethane	14.475	83	918075	56.17	ug/L		97
77) 1,2,3-Trichloropropane	14.651	61	274375m	45.91	ug/L		
78) T-1,4-Dichloro-2-Butene	14.351	53	278336	43.14	ug/L		97
80) Bromobenzene	14.469	156	857763	55.37	ug/L	#	83
81) 1,2,4-Trimethylbenzene	14.963	105	3891229	54.02	ug/L		95
82) 2-Chlorotoluene	14.610	91	3165608	52.28	ug/L		93
83) 4-Chlorotoluene	14.775	91	3282020	51.92	ug/L		93
84) tert-Butylbenzene	14.898	119	3042804	55.61	ug/L		90
85) 1,3,5-Trimethylbenzene	14.545	105	3735458	53.53	ug/L		95
86) p-Isopropyltoluene	15.198	119	3879289	57.08	ug/L		93
87) s-Butylbenzene	15.080	105	4628341	56.53	ug/L		97
88) 1,3-Dichlorobenzene	15.421	146	1844338	59.43	ug/L	#	92
89) 1,4-Dichlorobenzene	15.509	146	1857879	55.84	ug/L	#	89
90) n-Butylbenzene	15.679	91	3710774	52.51	ug/L		95
91) 1,2-Dichlorobenzene	16.026	146	1668546	56.96	ug/L		95
92) DBCP	17.090	157	117559	48.74	ug/L		98
93) Hexachlorobutadiene	17.988	225	227078	32.97	ug/L	#	90
94) 1,2,4-Trichlorobenzene	18.141	180	583494	39.61	ug/L		94
95) Naphthalene	18.776	128	1353977	43.49	ug/L	#	92
96) 1,2,3-Trichlorobenzene	19.152	180	307521	35.60	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4002.D
Acq On : 4 Feb 2021 8:08 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 04 13:36:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1339042	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2747146	50.00	ug/L		-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1645340	50.00	ug/L	#	-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1473422	50.00	ug/L	#	-0.01
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	748386	54.19	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.38%				
52) D8-Toluene	11.784	98	3258011	48.01	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.02%				
73) Bromofluorobenzene	14.328	95	1567086	53.33	ug/L		-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.66%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	285229	16.50	ug/L		99
3) Chloromethane	4.404	50	225109	11.31	ug/L		96
4) Vinyl Chloride	4.586	62	289602	17.93	ug/L		90
5) Bromomethane	5.232	94	34682	8.39	ug/L		93
6) Chloroethane	5.438	64	148379	20.87	ug/L		99
7) Trichlorofluoromethane	5.697	101	408942	20.34	ug/L		95
8) Diethyl ether	6.190	59	181296	16.22	ug/L		92
9) 1,1-Dichloroethene	6.531	96	222578	19.25	ug/L		82
10) Trichlorotrifluoroethane	6.554	151	155693	20.11	ug/L		100
11) Acrolein	7.024	56	137936	59.33	ug/L		97
12) Iodomethane	6.778	142	288176	23.24	ug/L	#	91
13) Carbon Disulfide	6.619	76	726571	19.19	ug/L	#	95
14) 3-chloropropene	7.195	41	313569	13.72	ug/L	#	85
15) Acetone	7.401	43	220506	70.09	ug/L		96
16) Methylene Chloride	7.342	84	304061	21.69	ug/L	#	74
17) Methyl Acetate	7.524	43	130289m	13.25	ug/L		
18) t-1,2-Dichloroethene	7.547	96	258476	19.32	ug/L	#	82
19) Methyl tert-butyl ether	7.636	73	649208	19.18	ug/L	#	87
20) Acetonitrile	8.059	41	220711	86.54	ug/L	#	89
21) Isopropyl ether	8.053	45	669643	14.90	ug/L	#	85
22) Chloroprene	8.276	88	238745	18.64	ug/L		90
23) 1,1-Dichloroethane	8.311	63	475765	17.29	ug/L	#	98
24) Acrylonitrile	8.393	53	81778	19.68	ug/L		86
25) Vinyl Acetate	8.546	43	348099	12.35	ug/L	#	92
26) c-1,2-Dichloroethene	8.952	96	286590	20.23	ug/L		85
27) 2,2-Dichloropropane	9.075	77	437905	18.84	ug/L		97
28) Bromochloromethane	9.187	128	118651	23.71	ug/L		95
29) Cyclohexane	9.193	56	443499	14.82	ug/L	#	84
30) Chloroform	9.222	83	480474	18.29	ug/L	#	95
32) Dibromofluoromethane	9.428	113	748386	54.19	ug/L	#	92
33) 2-Butanone	9.545	72	128101	85.14	ug/L	#	58
34) 1,1,1-Trichloroethane	9.486	97	431849	19.91	ug/L		97
35) 1,1-Dichloropropene	9.604	75	392877	17.80	ug/L		92
36) Propionitrile	9.904	54	35069	18.62	ug/L	#	1
37) Methacrylonitrile	9.915	41	193599	20.82	ug/L		88
38) Isobutyl Alcohol	9.904	43	192014	170.72	ug/L	#	31
40) Carbon Tetrachloride	9.416	117	393956	19.14	ug/L	#	75
41) Benzene	9.880	78	1139437	18.14	ug/L		93
42) 1,2-Dichloroethane	10.092	62	364035	15.89	ug/L		94
43) Trichloroethene	10.456	130	251208	19.80	ug/L	#	88
44) Methyl cyclohexane	10.456	83	533185	16.92	ug/L		89
45) Dibromomethane	10.902	93	148421	16.63	ug/L		96
46) 1,2-Dichloropropane	10.990	63	264870	15.05	ug/L		95
47) Bromodichloromethane	11.020	83	340026	17.70	ug/L		95
48) Methyl Methacrylate	11.085	69	154852	13.28	ug/L	#	83
49) 1,4-Dioxane	11.202	88	54590	342.79	ug/L	#	81
50) 2-Chloroethyl vinyl ether	11.490	63	672808	76.02	ug/L	#	87
51) C-1,3-Dichloropropene	11.607	75	425257	16.38	ug/L		90

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

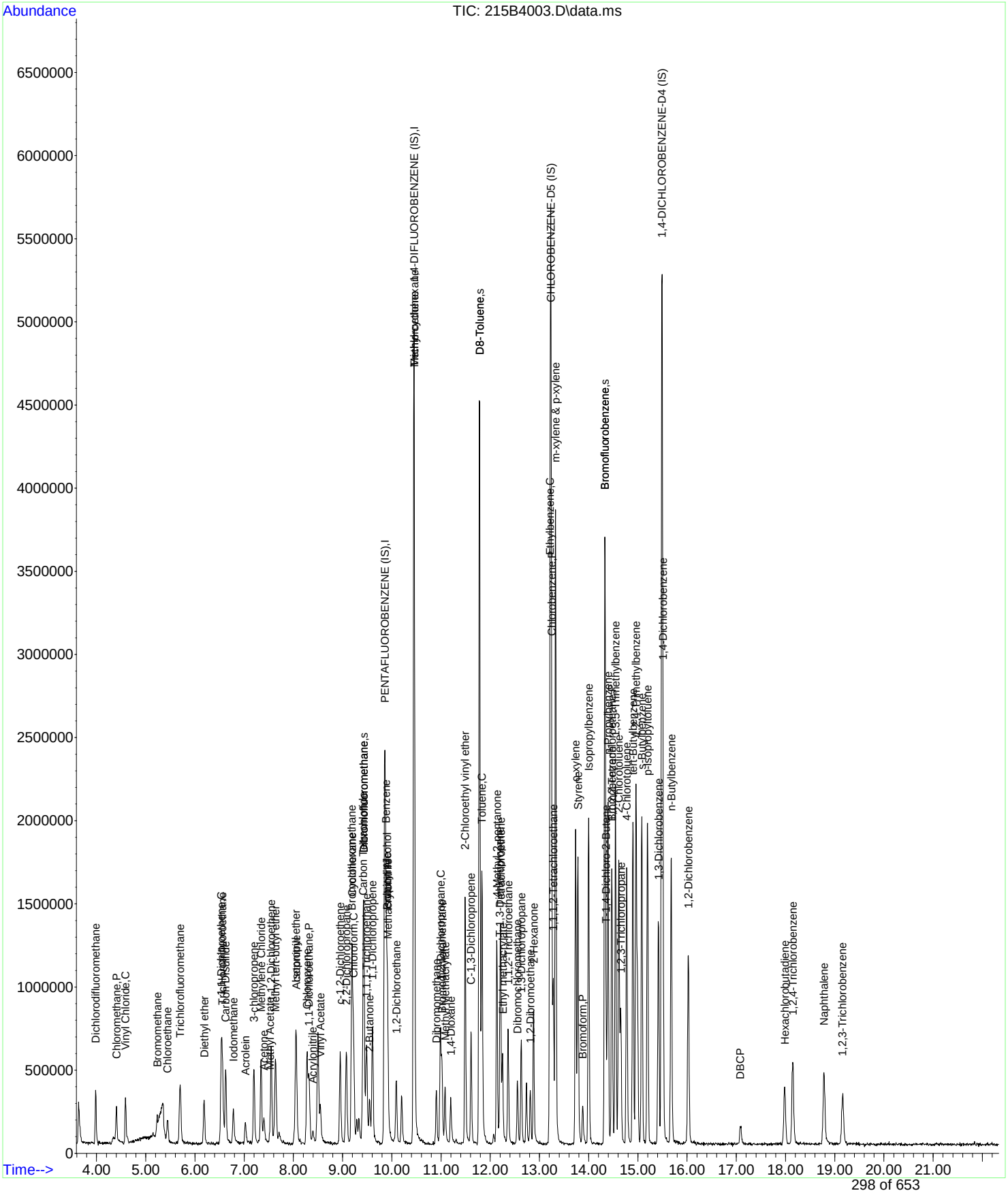
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3258011	48.01 ug/L	95
54) 4-Methyl-2-pentanone	12.136	100	170204	91.32 ug/L #	62
56) Toluene	11.831	92	790907	22.53 ug/L #	88
57) T-1,3-Dichloropropene	12.195	75	360873	17.27 ug/L	92
58) Tetrachloroethene	12.213	164	183009	18.95 ug/L	94
59) Ethyl methacrylate	12.254	69	304160	16.28 ug/L	98
60) 1,1,2-Trichloroethane	12.365	97	241562	20.36 ug/L	93
61) Dibromochloromethane	12.553	129	224219	22.18 ug/L	96
62) 1,3-Dichloropropane	12.630	76	407364	18.55 ug/L #	84
63) 1,2-Dibromoethane	12.812	107	233451	21.15 ug/L	93
64) 2-Hexanone	12.882	43	531571	65.75 ug/L #	94
65) Ethylbenzene	13.211	106	437498	20.51 ug/L	92
66) Chlorobenzene	13.247	112	806244	22.80 ug/L	96
67) 1,1,1,2-Tetrachloroethane	13.282	131	255895	24.18 ug/L	96
68) m-xylene & p-xylene	13.329	106	1179404	47.62 ug/L	84
69) o-xylene	13.734	106	563058	22.17 ug/L	90
70) Styrene	13.781	104	956730	23.07 ug/L #	84
71) Bromoform	13.875	173	107854	19.13 ug/L	95
72) Isopropylbenzene	13.999	105	1509178	22.58 ug/L	96
74) Bromofluorobenzene	14.328	95	1567086	53.33 ug/L #	83
75) n-Propylbenzene	14.392	91	1866602	20.89 ug/L	95
76) 1,1,2,2-Tetrachloroethane	14.469	83	347875	20.99 ug/L	100
77) 1,2,3-Trichloropropane	14.657	61	96821m	15.97 ug/L	
78) T-1,4-Dichloro-2-Butene	14.351	53	91673	14.01 ug/L #	48
80) Bromobenzene	14.469	156	301086	20.29 ug/L	88
81) 1,2,4-Trimethylbenzene	14.962	105	1415309	20.52 ug/L	97
82) 2-Chlorotoluene	14.610	91	1149766	19.83 ug/L	92
83) 4-Chlorotoluene	14.768	91	1197222	19.77 ug/L	95
84) tert-Butylbenzene	14.898	119	1132941	21.62 ug/L	90
85) 1,3,5-Trimethylbenzene	14.545	105	1356056	20.29 ug/L	94
86) p-Isopropyltoluene	15.197	119	1395922	21.45 ug/L #	92
87) s-Butylbenzene	15.080	105	1692340	21.58 ug/L	98
88) 1,3-Dichlorobenzene	15.421	146	648370	21.82 ug/L	94
89) 1,4-Dichlorobenzene	15.509	146	647084	20.31 ug/L	92
90) n-Butylbenzene	15.679	91	1289404	19.05 ug/L	96
91) 1,2-Dichlorobenzene	16.026	146	592578	21.12 ug/L	96
92) DBCP	17.078	157	42834	19.37 ug/L	95
93) Hexachlorobutadiene	17.988	225	75773	12.02 ug/L	88
94) 1,2,4-Trichlorobenzene	18.147	180	225512	16.27 ug/L	95
95) Naphthalene	18.782	128	621846	21.30 ug/L #	92
96) 1,2,3-Trichlorobenzene	19.152	180	140601	17.57 ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4003.D
Acq On : 4 Feb 2021 8:38 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 04 13:36:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4005.D
Acq On : 4 Feb 2021 9:37 am
Operator : KKW
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 13:36:53 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1201664	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2516659	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1454473	50.00 ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1382524	50.00 ug/L	#-0.01
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	659771	53.23 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.46%		
52) D8-Toluene	11.784	98	2930584	47.14 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.28%		
73) Bromofluorobenzene	14.328	95	1434108	55.21 ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.42%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.122	85	1186	N.D.	
3) Chloromethane	4.404	50	2801	N.D.	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D. d	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.342	84	10337	0.82 ug/L #	65
17) Methyl Acetate	7.559	43	1314	N.D.	
18) t-1,2-Dichloroethene	7.559	96	1008	N.D.	
19) Methyl tert-butyl ether	7.506	73	1729	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.906	45	1413	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.611	43	2638	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D.	
27) 2,2-Dichloropropane	9.069	77	1305	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.222	83	1766	N.D.	
32) Dibromofluoromethane	9.428	113	659771	53.23 ug/L #	87
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D. d	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.392	117	1213	N.D.	
41) Benzene	9.898	78	2242	N.D.	
42) 1,2-Dichloroethane	10.068	62	1666	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	11.020	63	1006	N.D.	
47) Bromodichloromethane	11.032	83	1189	N.D.	
48) Methyl Methacrylate	11.085	69	1045	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.766	75	1248	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4005.D
Acq On : 4 Feb 2021 9:37 am
Operator : KKW
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 13:36:53 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

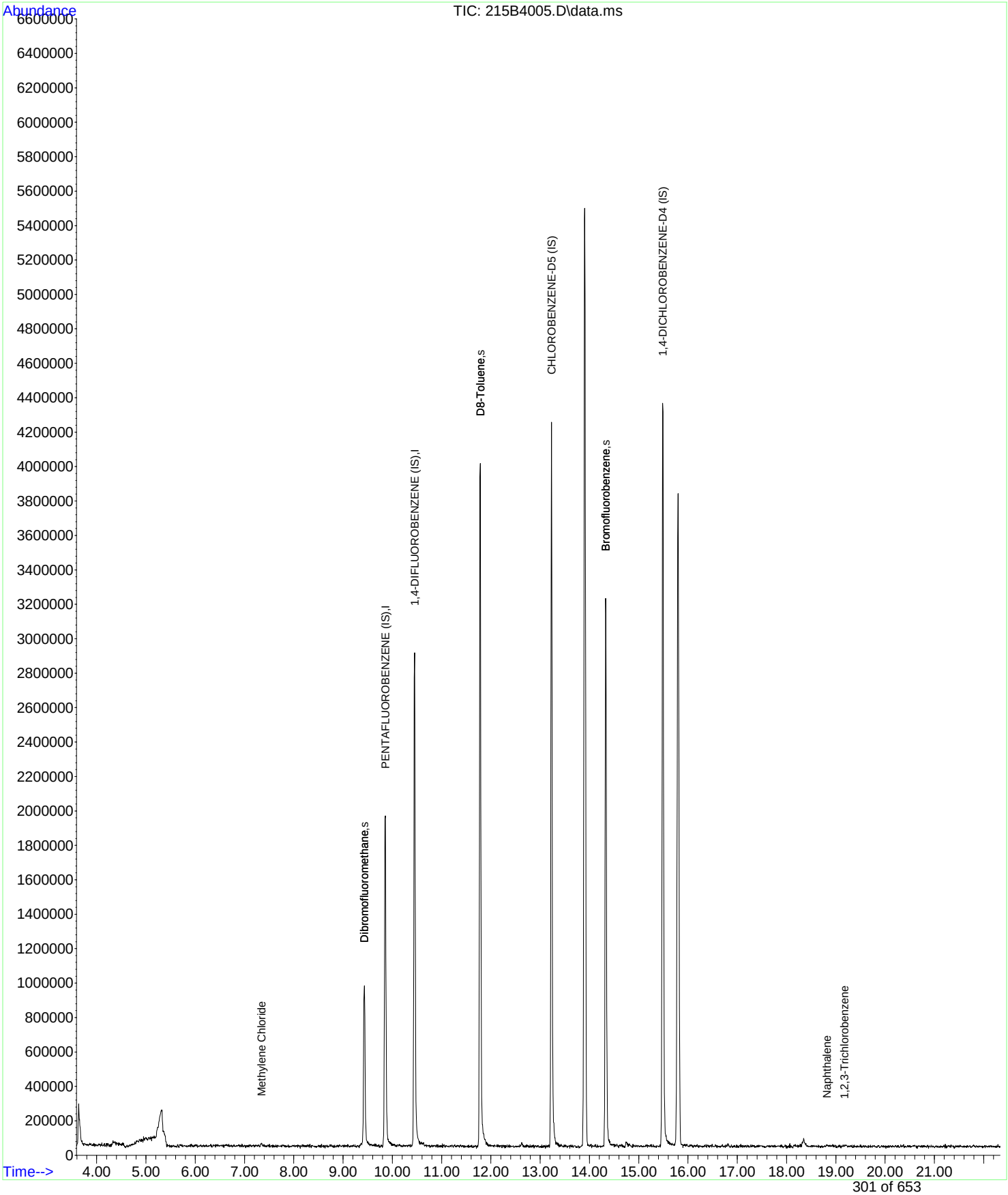
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2930584	47.14 ug/L #	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	1398	N.D.	
57) T-1,3-Dichloropropene	12.136	75	1121	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.436	97	1870	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.941	43	1048	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.229	112	1933	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.911	106	4409	N.D.	
70) Styrene	13.840	104	1739	N.D.	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	14.022	105	1202	N.D.	
74) Bromofluorobenzene	14.328	95	1434108	55.21 ug/L #	83
75) n-Propylbenzene	14.404	91	4959	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.487	83	2320	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.457	156	1340	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	3413	N.D.	
82) 2-Chlorotoluene	14.475	91	1122	N.D.	
83) 4-Chlorotoluene	14.792	91	3006	N.D.	
84) tert-Butylbenzene	14.921	119	1608	N.D.	
85) 1,3,5-Trimethylbenzene	14.581	105	1605	N.D.	
86) p-Isopropyltoluene	15.198	119	2082	N.D.	
87) s-Butylbenzene	15.080	105	2317	N.D.	
88) 1,3-Dichlorobenzene	15.427	146	2259	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	1238	N.D.	
90) n-Butylbenzene	15.785	91	1836	N.D.	
91) 1,2-Dichlorobenzene	16.032	146	1178	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D. d	
94) 1,2,4-Trichlorobenzene	18.176	180	2401	N.D.	
95) Naphthalene	18.817	128	7528	0.28 ug/L #	69
96) 1,2,3-Trichlorobenzene	19.175	180	3587	0.49 ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4005.D
Acq On : 4 Feb 2021 9:37 am
Operator : KKW
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 04 13:36:53 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4006.D
Acq On : 4 Feb 2021 10:06 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 13:36:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1180646	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2478135	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1428043	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1374637	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	667790	54.84	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.68%			
52) D8-Toluene	11.778	98	2911958	47.57	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.14%			
73) Bromofluorobenzene	14.328	95	1377491	54.01	ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.987	85	15646	1.03	ug/L #	81
3) Chloromethane	4.410	50	18110	1.03	ug/L #	87
4) Vinyl Chloride	4.586	62	16461	1.16	ug/L #	65
5) Bromomethane	5.232	94	5568	1.58	ug/L #	51
6) Chloroethane	5.462	64	9022	1.44	ug/L #	90
7) Trichlorofluoromethane	5.708	101	20077m	1.13	ug/L	
8) Diethyl ether	6.190	59	9587	0.97	ug/L #	56
9) 1,1-Dichloroethene	6.543	96	9402	0.92	ug/L #	83
10) Trichlorotrifluoroethane	6.549	151	8668	1.27	ug/L #	74
11) Acrolein	7.042	56	22017	10.74	ug/L #	82
12) Iodomethane	6.778	142	29748	2.72	ug/L #	92
13) Carbon Disulfide	6.619	76	142746	4.28	ug/L	96
14) 3-chloropropene	7.207	41	12913	0.64	ug/L #	75
15) Acetone	7.412	43	8243	2.97	ug/L #	47
16) Methylene Chloride	7.342	84	52132	4.22	ug/L #	75
17) Methyl Acetate	7.536	43	7554	0.87	ug/L #	82
18) t-1,2-Dichloroethene	7.553	96	10935	0.93	ug/L	86
19) Methyl tert-butyl ether	7.636	73	28933	0.97	ug/L #	82
20) Acetonitrile	8.047	41	15892	7.07	ug/L #	76
21) Isopropyl ether	8.059	45	25397	0.64	ug/L #	74
22) Chloroprene	8.258	88	3535	0.31	ug/L #	1
23) 1,1-Dichloroethane	8.317	63	21051	0.87	ug/L #	67
24) Acrylonitrile	8.405	53	34823	9.51	ug/L	91
25) Vinyl Acetate	8.552	43	66939	2.69	ug/L	97
26) c-1,2-Dichloroethene	8.952	96	14180	1.14	ug/L #	79
27) 2,2-Dichloropropane	9.069	77	18881	0.93	ug/L #	86
28) Bromochloromethane	9.193	128	6911	1.57	ug/L	94
29) Cyclohexane	9.204	56	17418	0.66	ug/L	90
30) Chloroform	9.228	83	25071	1.08	ug/L	99
32) Dibromofluoromethane	9.428	113	668923	54.93	ug/L #	88
33) 2-Butanone	9.569	72	3149	2.40	ug/L #	49
34) 1,1,1-Trichloroethane	9.492	97	18572	0.97	ug/L #	88
35) 1,1-Dichloropropene	9.604	75	20843	1.07	ug/L	92
36) Propionitrile	9.898	54	12633	7.61	ug/L #	91
37) Methacrylonitrile	9.915	41	48229	5.88	ug/L #	65
38) Isobutyl Alcohol	9.904	43	9943	10.03	ug/L #	47
40) Carbon Tetrachloride	9.422	117	14359	0.77	ug/L #	69
41) Benzene	9.880	78	61893	1.09	ug/L #	86
42) 1,2-Dichloroethane	10.103	62	16299	0.79	ug/L #	95
43) Trichloroethene	10.450	130	13795	1.21	ug/L #	1
44) Methyl cyclohexane	10.456	83	49600	1.74	ug/L #	60
45) Dibromomethane	10.914	93	6969	0.87	ug/L #	83
46) 1,2-Dichloropropane	10.979	63	14330	0.93	ug/L #	82
47) Bromodichloromethane	11.020	83	14882	0.89	ug/L #	86
48) Methyl Methacrylate	11.096	69	5693	0.54	ug/L #	45
49) 1,4-Dioxane	11.226	88	1644	11.44	ug/L #	11
50) 2-Chloroethyl vinyl ether	11.502	63	23203	2.91	ug/L #	96
51) C-1,3-Dichloropropene	11.619	75	14833	0.66	ug/L #	79

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4006.D
Acq On : 4 Feb 2021 10:06 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 13:36:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

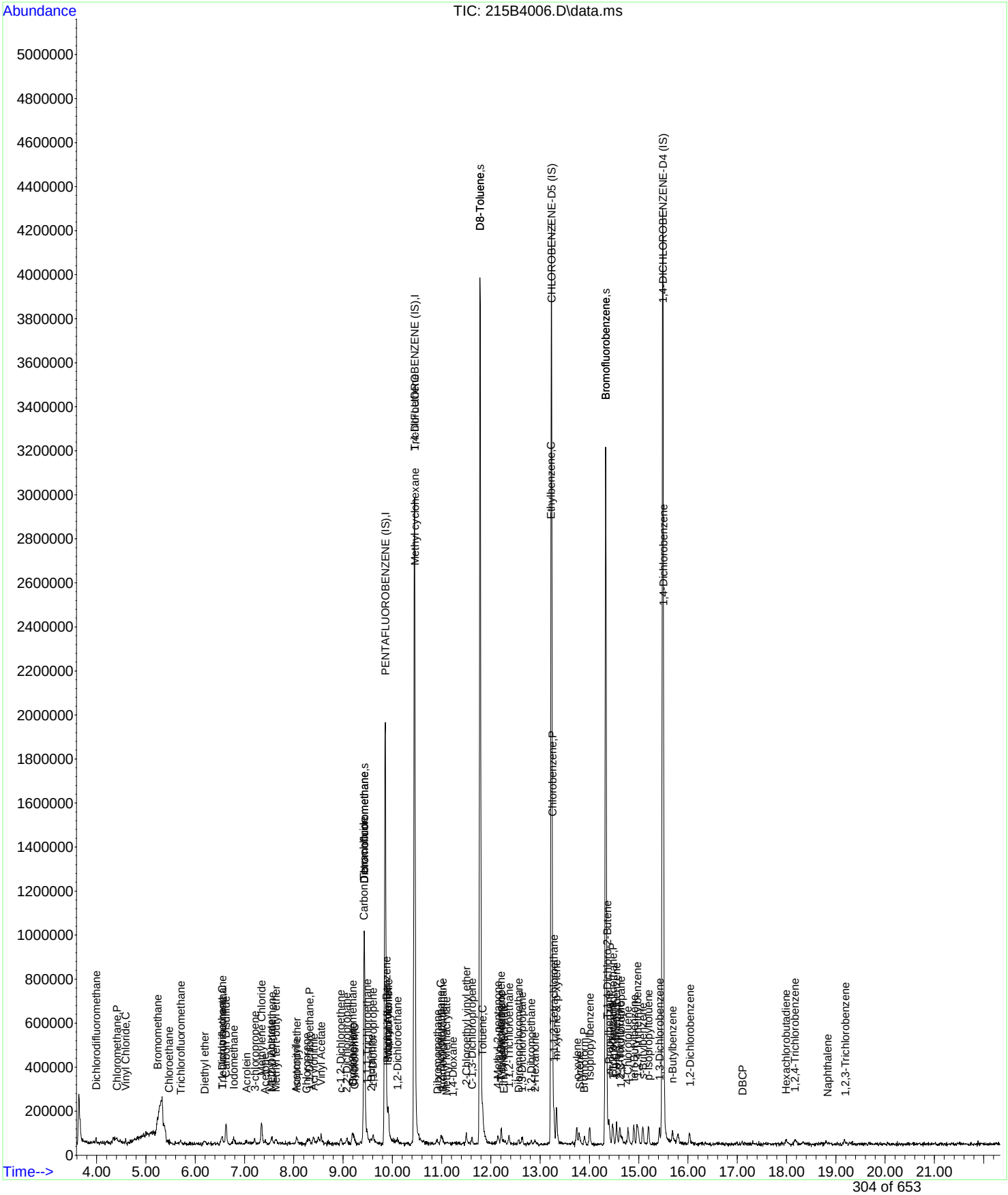
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2911958	47.57	ug/L	#	95
54) 4-Methyl-2-pentanone	12.136	100	6731	4.00	ug/L	#	75
56) Toluene	11.831	92	35870	1.18	ug/L		97
57) T-1,3-Dichloropropene	12.201	75	15285	0.84	ug/L	#	90
58) Tetrachloroethene	12.213	164	12668	1.51	ug/L	#	79
59) Ethyl methacrylate	12.266	69	8547	0.53	ug/L	#	62
60) 1,1,2-Trichloroethane	12.365	97	13630	1.32	ug/L		90
61) Dibromochloromethane	12.559	129	8600	1.04	ug/L	#	97
62) 1,3-Dichloropropane	12.630	76	19538	1.02	ug/L	#	96
63) 1,2-Dibromoethane	12.818	107	10096	1.05	ug/L	#	73
64) 2-Hexanone	12.894	43	15032	2.14	ug/L	#	95
65) Ethylbenzene	13.217	106	22981	1.24	ug/L	#	81
66) Chlorobenzene	13.247	112	40912	1.33	ug/L	#	85
67) 1,1,1,2-Tetrachloroethane	13.276	131	11014	1.20	ug/L	#	90
68) m-xylene & p-xylene	13.329	106	52086	2.42	ug/L		88
69) o-xylene	13.746	106	23469	1.06	ug/L		94
70) Styrene	13.799	104	36910	1.03	ug/L	#	81
71) Bromoform	13.887	173	4960	1.09	ug/L		96
72) Isopropylbenzene	14.005	105	58531	1.01	ug/L	#	90
74) Bromofluorobenzene	14.328	95	1377491	54.01	ug/L		85
75) n-Propylbenzene	14.398	91	82390	1.06	ug/L	#	91
76) 1,1,2,2-Tetrachloroethane	14.475	83	14726	1.02	ug/L	#	74
77) 1,2,3-Trichloropropane	14.639	61	4383	0.83	ug/L		94
78) T-1,4-Dichloro-2-Butene	14.357	53	4778	0.84	ug/L	#	54
80) Bromobenzene	14.469	156	18239	1.32	ug/L	#	65
81) 1,2,4-Trimethylbenzene	14.968	105	59565	0.93	ug/L		90
82) 2-Chlorotoluene	14.616	91	52195	0.96	ug/L		97
83) 4-Chlorotoluene	14.774	91	51377	0.91	ug/L	#	92
84) tert-Butylbenzene	14.904	119	43041	0.88	ug/L	#	91
85) 1,3,5-Trimethylbenzene	14.545	105	55413	0.89	ug/L	#	76
86) p-Isopropyltoluene	15.197	119	54273	0.89	ug/L		99
87) s-Butylbenzene	15.080	105	69741	0.95	ug/L	#	92
88) 1,3-Dichlorobenzene	15.421	146	33858	1.22	ug/L		92
89) 1,4-Dichlorobenzene	15.503	146	37548	1.26	ug/L	#	1
90) n-Butylbenzene	15.685	91	44975	0.71	ug/L		97
91) 1,2-Dichlorobenzene	16.038	146	29380	1.12	ug/L		94
92) DBCP	17.107	157	1662	0.83	ug/L	#	8
93) Hexachlorobutadiene	17.988	225	4407	0.77	ug/L	#	72
94) 1,2,4-Trichlorobenzene	18.171	180	8858	0.69	ug/L		90
95) Naphthalene	18.834	128	14278	0.54	ug/L	#	73
96) 1,2,3-Trichlorobenzene	19.193	180	6433	0.89	ug/L	#	55

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4006.D
Acq On : 4 Feb 2021 10:06 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Feb 04 13:36:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4007.D
Acq On : 4 Feb 2021 10:36 am
Operator : KKW
Sample : AE00180-01
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 04 13:36:59 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.851	168	1186548	50.00 ug/L	#-0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2448503	50.00 ug/L	#-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1456942	50.00 ug/L	-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1373360	50.00 ug/L	#-0.01
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	664328	54.28 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.56%		
52) D8-Toluene	11.778	98	2876881	47.57 ug/L	-0.02
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.14%		
73) Bromofluorobenzene	14.328	95	1398897	53.76 ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.52%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.999	85	1549	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.592	62	7692	0.54 ug/L #	40
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	6.554	151	12147	1.77 ug/L	91
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	6.766	142	2066	N.D.	
13) Carbon Disulfide	6.619	76	5037	N.D.	
14) 3-chloropropene	7.283	41	1559	N.D.	
15) Acetone	7.401	43	3610	1.29 ug/L	98
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.542	96	4566	0.39 ug/L #	33
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D. d	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D. d	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.576	43	1457	N.D.	
26) c-1,2-Dichloroethene	8.952	96	1111497	88.53 ug/L	85
27) 2,2-Dichloropropane	9.028	77	1151	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.428	113	664549	54.30 ug/L #	90
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D. d	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.339	117	2701	N.D.	
41) Benzene	9.886	78	4437	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.456	130	280095	24.77 ug/L #	92
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	10.867	83	1098	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	11.619	63	1122	N.D.	
51) C-1,3-Dichloropropene	11.719	75	1047	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4007.D
Acq On : 4 Feb 2021 10:36 am
Operator : KKW
Sample : AE00180-01
Misc :
ALS Vial : 7 Sample Multiplier: 1

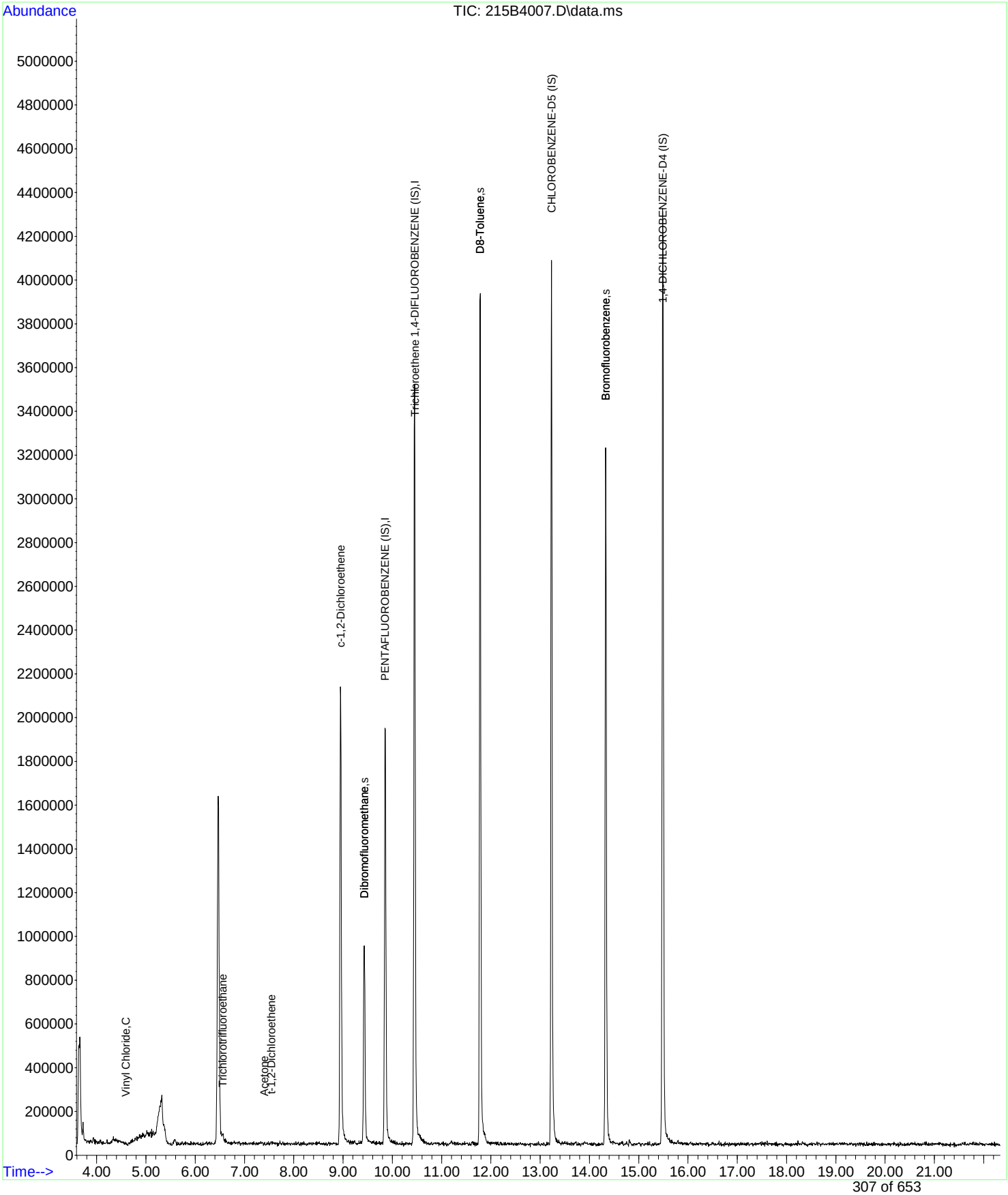
Quant Time: Feb 04 13:36:59 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2876881	47.57 ug/L #	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	1210	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.318	69	1255	N.D.	
60) 1,1,2-Trichloroethane	12.501	97	1094	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.630	76	1433	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.971	43	1307	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.235	112	1845	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.005	105	1082	N.D.	
74) Bromofluorobenzene	14.328	95	1398897	53.76 ug/L	84
75) n-Propylbenzene	14.369	91	3985	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.486	83	1110	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	14.363	156	1615	N.D.	
81) 1,2,4-Trimethylbenzene	14.992	105	2270	N.D.	
82) 2-Chlorotoluene	14.610	91	1061	N.D.	
83) 4-Chlorotoluene	14.757	91	1014	N.D.	
84) tert-Butylbenzene	14.904	119	1156	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.992	105	2270	N.D.	
88) 1,3-Dichlorobenzene	15.450	146	1140	N.D.	
89) 1,4-Dichlorobenzene	15.479	146	1698	N.D.	
90) n-Butylbenzene	15.720	91	1133	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.864	128	3236	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4007.D
Acq On : 4 Feb 2021 10:36 am
Operator : KKW
Sample : AE00180-01
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 04 13:36:59 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4008.D
Acq On : 4 Feb 2021 11:06 am
Operator : KKW
Sample : AE00180-02@500X
Misc : 500
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 04 13:37:02 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1186771	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2477777	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1441644	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1332138	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	645751	52.76	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.52%			
52) D8-Toluene	11.778	98	2823138	46.13	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.26%			
73) Bromofluorobenzene	14.328	95	1399557	54.36	ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.72%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d	
3) Chloromethane	4.404	50	1313	N.D.		
4) Vinyl Chloride	4.533	62	1158	N.D.		
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	6.554	151	444202	64.73	ug/L	94
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.619	76	3252	N.D.		
14) 3-chloropropene	7.242	41	1362	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.354	84	9556	0.77	ug/L	79
17) Methyl Acetate	7.471	43	1324	N.D.		
18) t-1,2-Dichloroethene	7.524	96	1042	N.D.		
19) Methyl tert-butyl ether	7.618	73	1074	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.053	45	1014	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.611	43	1268	N.D.		
26) c-1,2-Dichloroethene	8.952	96	13489	1.07	ug/L	91
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.222	83	6520	0.28	ug/L #	85
32) Dibromofluoromethane	9.428	113	646159	52.79	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.	d	
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.357	117	2798	N.D.		
41) Benzene	9.886	78	5163	N.D.		
42) 1,2-Dichloroethane	10.045	62	1588	N.D.		
43) Trichloroethene	10.456	130	10958	0.96	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	10.785	93	1048	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	11.155	69	1466	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
51) C-1,3-Dichloropropene	11.772	75	1922	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4008.D
Acq On : 4 Feb 2021 11:06 am
Operator : KKW
Sample : AE00180-02@500X
Misc : 500
ALS Vial : 8 Sample Multiplier: 1

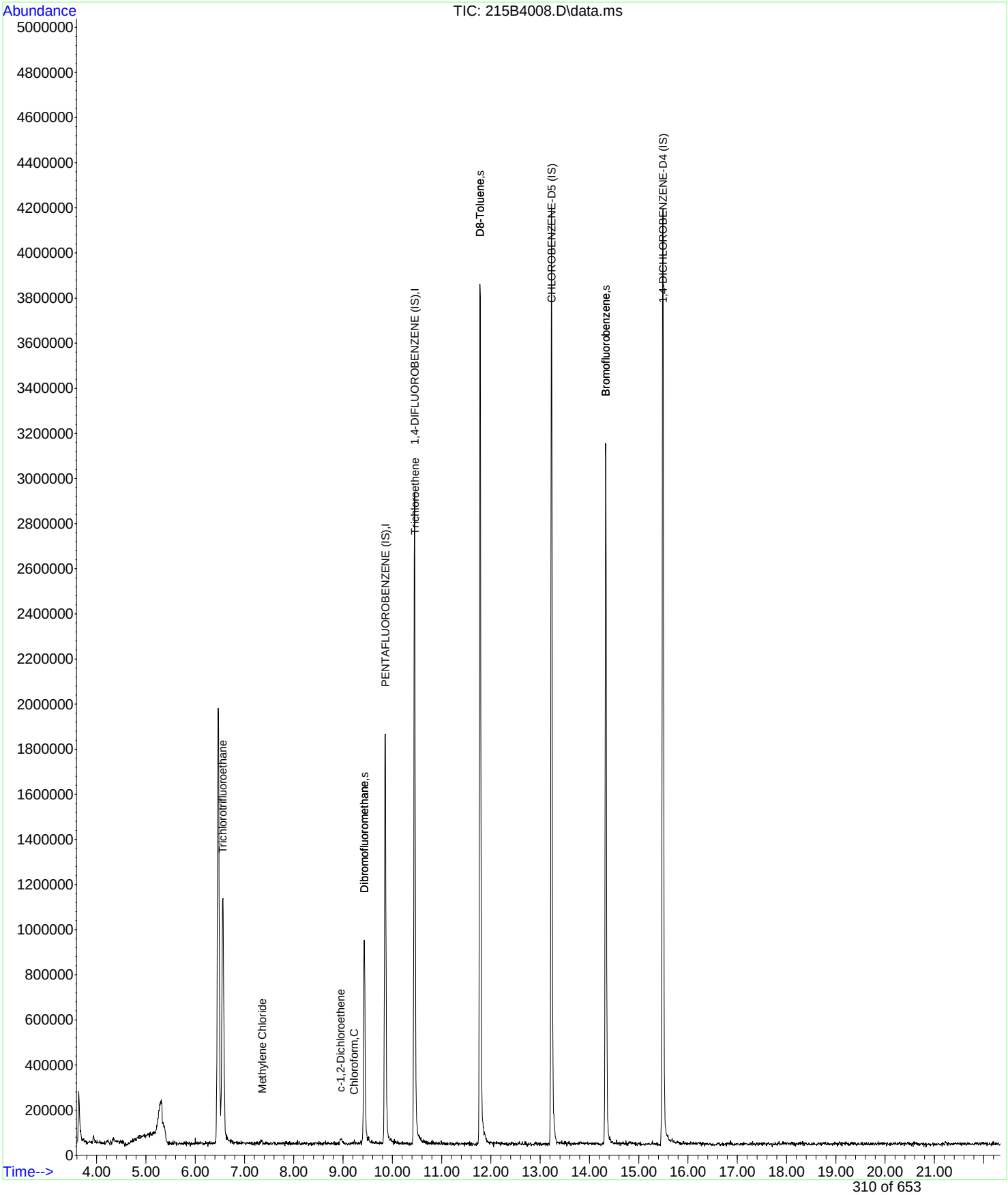
Quant Time: Feb 04 13:37:02 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2821487	46.10 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.866	92	1007	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.166	69	1073	N.D.	
60) 1,1,2-Trichloroethane	12.360	97	1034	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.871	43	1056	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1399557	54.36 ug/L #	83
75) n-Propylbenzene	14.334	91	5194	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	14.310	53	1062	N.D.	
80) Bromobenzene	14.563	156	1206	N.D.	
81) 1,2,4-Trimethylbenzene	15.080	105	1020	N.D.	
82) 2-Chlorotoluene	14.704	91	1237	N.D.	
83) 4-Chlorotoluene	14.704	91	1237	N.D.	
84) tert-Butylbenzene	14.915	119	2309	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.203	119	1754	N.D.	
87) s-Butylbenzene	15.080	105	1020	N.D.	
88) 1,3-Dichlorobenzene	15.521	146	1545	N.D.	
89) 1,4-Dichlorobenzene	15.521	146	1545	N.D.	
90) n-Butylbenzene	15.709	91	1304	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4008.D
Acq On : 4 Feb 2021 11:06 am
Operator : KKW
Sample : AE00180-02@500X
Misc : 500
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 04 13:37:02 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4009.D
Acq On : 4 Feb 2021 11:35 am
Operator : KKW
Sample : AE00180-03@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 13:37:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1157451	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2390240	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1422553	50.00 ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1351947	50.00 ug/L	#-0.01
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	651578	54.58 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.16%		
52) D8-Toluene	11.778	98	2779156	47.07 ug/L	-0.02
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.14%		
73) Bromofluorobenzene	14.328	95	1345227	52.95 ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.90%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.940	85	2704	N.D.	
3) Chloromethane	4.398	50	2191	N.D.	
4) Vinyl Chloride	4.592	62	144593	10.35 ug/L	94
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.096	59	1212	N.D.	
9) 1,1-Dichloroethene	6.555	96	1319	N.D.	
10) Trichlorotrifluoroethane	6.566	151	2319m	0.35 ug/L	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.342	84	10514	0.87 ug/L #	72
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.536	96	6019	0.52 ug/L #	60
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D.	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	8.376	88	1345	N.D.	
23) 1,1-Dichloroethane	8.206	63	1054	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.564	43	1050	N.D.	
26) c-1,2-Dichloroethene	8.952	96	606457	49.52 ug/L	84
27) 2,2-Dichloropropane	8.899	77	1168	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.069	56	1636	N.D.	
30) Chloroform	9.228	83	5636	0.25 ug/L #	77
32) Dibromofluoromethane	9.428	113	651578	54.58 ug/L #	90
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.622	75	1330	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.369	117	1295	N.D.	
41) Benzene	9.874	78	4979	N.D.	
42) 1,2-Dichloroethane	9.974	62	1079	N.D.	
43) Trichloroethene	10.450	130	114768	10.40 ug/L #	78
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	11.038	63	1067	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	11.061	69	1362	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	11.390	63	1010	N.D.	
51) C-1,3-Dichloropropene	11.619	75	1251	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4009.D
Acq On : 4 Feb 2021 11:35 am
Operator : KKW
Sample : AE00180-03@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

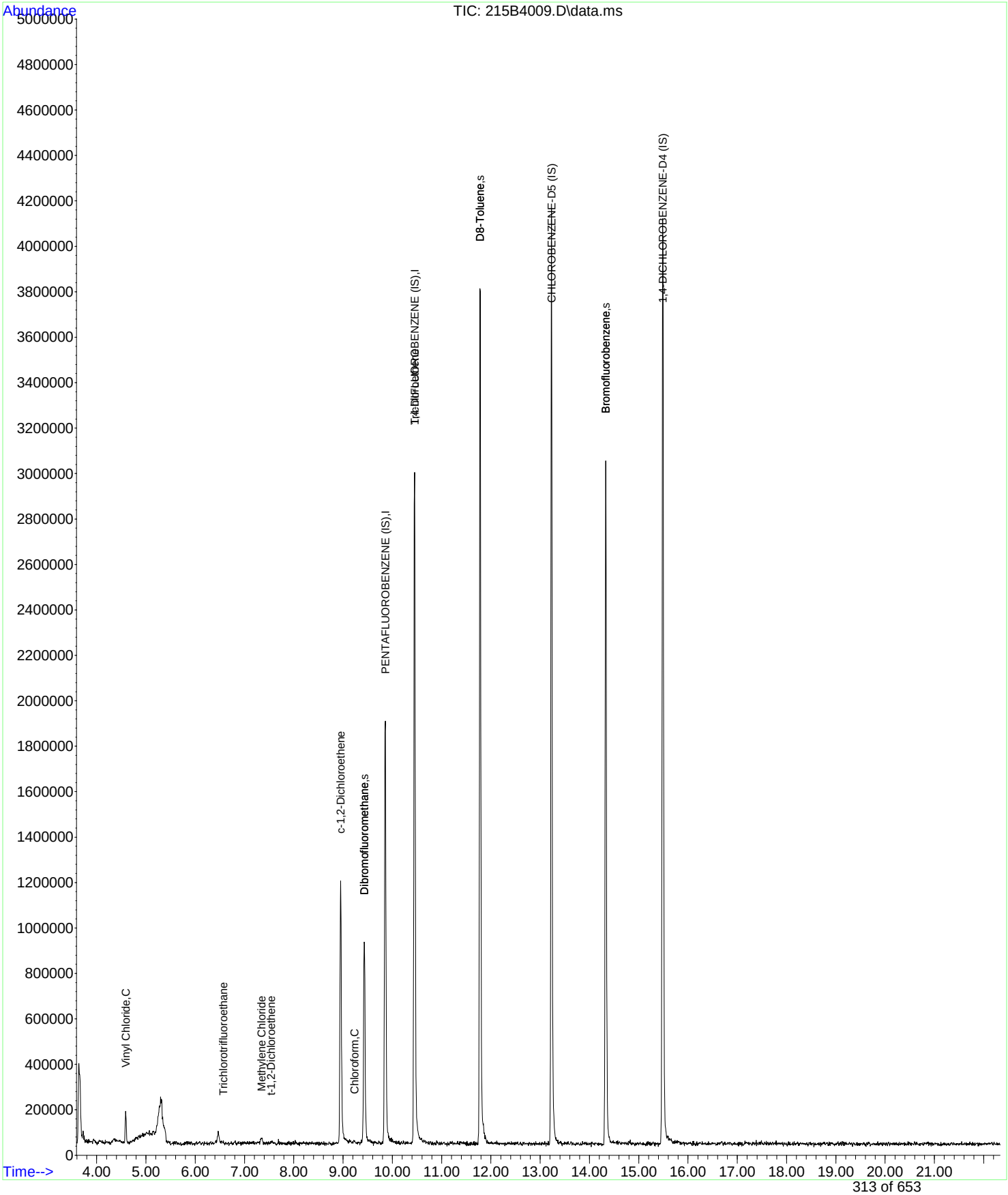
Quant Time: Feb 04 13:37:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2779156	47.07 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.784	92	1769	N.D.	
57) T-1,3-Dichloropropene	12.242	75	2397	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.313	69	1170	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.689	76	1107	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.912	43	1036	N.D.	
65) Ethylbenzene	13.229	106	1047	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.341	106	1460	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1345227	52.95 ug/L	85
75) n-Propylbenzene	14.340	91	2705	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.328	83	1625	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	14.346	53	1050	N.D.	
80) Bromobenzene	14.334	156	2144	N.D.	
81) 1,2,4-Trimethylbenzene	14.886	105	1030	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.798	91	1176	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.110	105	1010	N.D.	
88) 1,3-Dichlorobenzene	15.480	146	1421	N.D.	
89) 1,4-Dichlorobenzene	15.480	146	1421	N.D.	
90) n-Butylbenzene	15.691	91	1121	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4009.D
Acq On : 4 Feb 2021 11:35 am
Operator : KKW
Sample : AE00180-03@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 04 13:37:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4010.D
Acq On : 4 Feb 2021 12:05 pm
Operator : KKW
Sample : AE00180-04@50X
Misc : 50
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 04 13:37:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1180192	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2405496	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1398495	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1332643	50.00	ug/L	#-0.01
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	663251	54.49	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.98%			
52) D8-Toluene	11.778	98	2821052	47.48	ug/L	-0.02
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.96%			
73) Bromofluorobenzene	14.328	95	1362922	54.57	ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d		
3) Chloromethane	4.410	50	3320	N.D.		
4) Vinyl Chloride	4.586	62	49231	3.46	ug/L	93
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	5.826	101	1001	N.D.		
8) Diethyl ether	6.137	59	1261	N.D.		
9) 1,1-Dichloroethene	6.543	96	1113	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	6.619	76	3871	N.D.		
14) 3-chloropropene	7.248	41	1155	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.348	84	10050	0.81	ug/L #	54
17) Methyl Acetate	7.512	43	1198	N.D.		
18) t-1,2-Dichloroethene	7.501	96	1717	N.D.		
19) Methyl tert-butyl ether	7.718	73	1002	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	7.971	45	2149	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.323	63	1288	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.535	43	1261	N.D.		
26) c-1,2-Dichloroethene	8.952	96	657423	52.64	ug/L	84
27) 2,2-Dichloropropane	9.099	77	1125	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.298	56	1248	N.D.		
30) Chloroform	9.210	83	2469	N.D.		
32) Dibromofluoromethane	9.428	113	663721	54.53	ug/L #	91
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	9.375	97	1097	N.D.		
35) 1,1-Dichloropropene	9.627	75	1189	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.357	117	3328	N.D.		
41) Benzene	9.892	78	4317	N.D.		
42) 1,2-Dichloroethane	9.939	62	1051	N.D.		
43) Trichloroethene	10.456	130	120657	10.86	ug/L #	78
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	11.073	63	1237	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	11.519	63	1021	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4010.D
Acq On : 4 Feb 2021 12:05 pm
Operator : KKW
Sample : AE00180-04@50X
Misc : 50
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 04 13:37:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

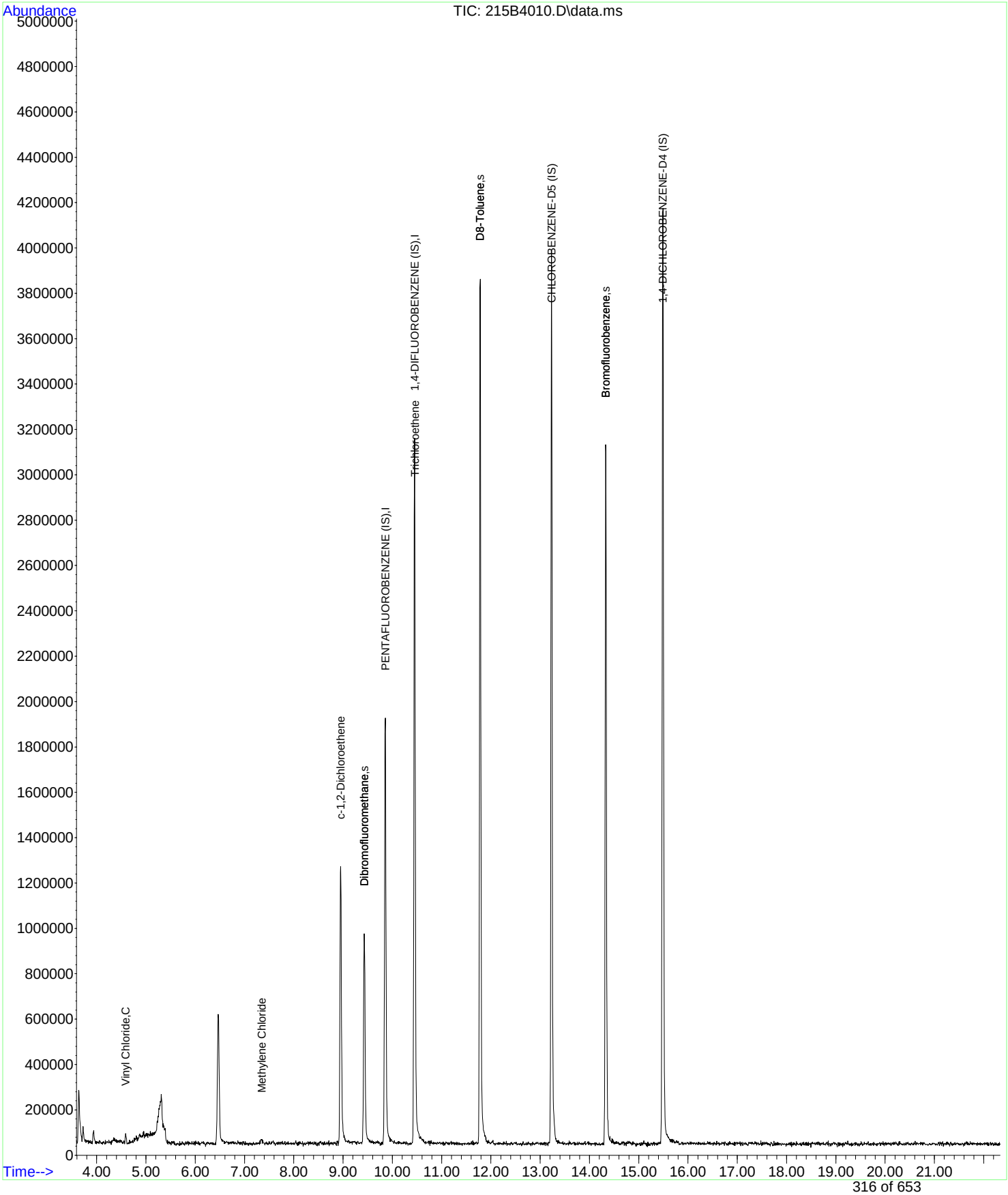
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2819970	47.46 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.766	92	1363	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.189	97	1093	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.746	106	1291	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1362922	54.57 ug/L	85
75) n-Propylbenzene	14.328	91	7667	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.351	83	1107	N.D.	
77) 1,2,3-Trichloropropane	14.628	61	1016	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	15.062	105	1060	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.203	119	1234	N.D.	
87) s-Butylbenzene	15.062	105	1060	N.D.	
88) 1,3-Dichlorobenzene	15.433	146	1656	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	4263	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.682	128	1333	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4010.D
Acq On : 4 Feb 2021 12:05 pm
Operator : KKW
Sample : AE00180-04@50X
Misc : 50
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 04 13:37:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4011.D
Acq On : 4 Feb 2021 12:34 pm
Operator : KKW
Sample : AE00180-05
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 04 13:37:11 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1216684	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2482323	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1385442	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1355439	50.00	ug/L	#-0.01
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	673513	53.67	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 107.34%			
52) D8-Toluene	11.784	98	2862539	46.69	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.38%			
73) Bromofluorobenzene	14.328	95	1349836	54.56	ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.12%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.592	62	71105	4.84	ug/L #	33
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.	d	
8) Diethyl ether	6.220	59	1406	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	6.607	151	1170	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.525	76	1183	N.D.		
14) 3-chloropropene	7.148	41	1093	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.354	84	1857	N.D.		
17) Methyl Acetate	7.606	43	1195	N.D.		
18) t-1,2-Dichloroethene	7.565	96	9048	0.74	ug/L #	54
19) Methyl tert-butyl ether	7.771	73	1105	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.065	45	3609	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.317	63	689122	27.56	ug/L #	99
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.558	43	1353	N.D.		
26) c-1,2-Dichloroethene	8.958	96	29406	2.28	ug/L	88
27) 2,2-Dichloropropane	9.011	77	1091	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.193	56	4109	N.D.		
30) Chloroform	9.199	83	1143	N.D.		
32) Dibromofluoromethane	9.434	113	674577	53.76	ug/L #	91
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.622	75	1004	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	9.898	41	1057	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.404	117	1271	N.D.		
41) Benzene	0.000		0	N.D.	d	
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	11.043	69	1273	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	11.431	63	1595	N.D.		
51) C-1,3-Dichloropropene	11.508	75	1146	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4011.D
Acq On : 4 Feb 2021 12:34 pm
Operator : KKW
Sample : AE00180-05
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 04 13:37:11 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

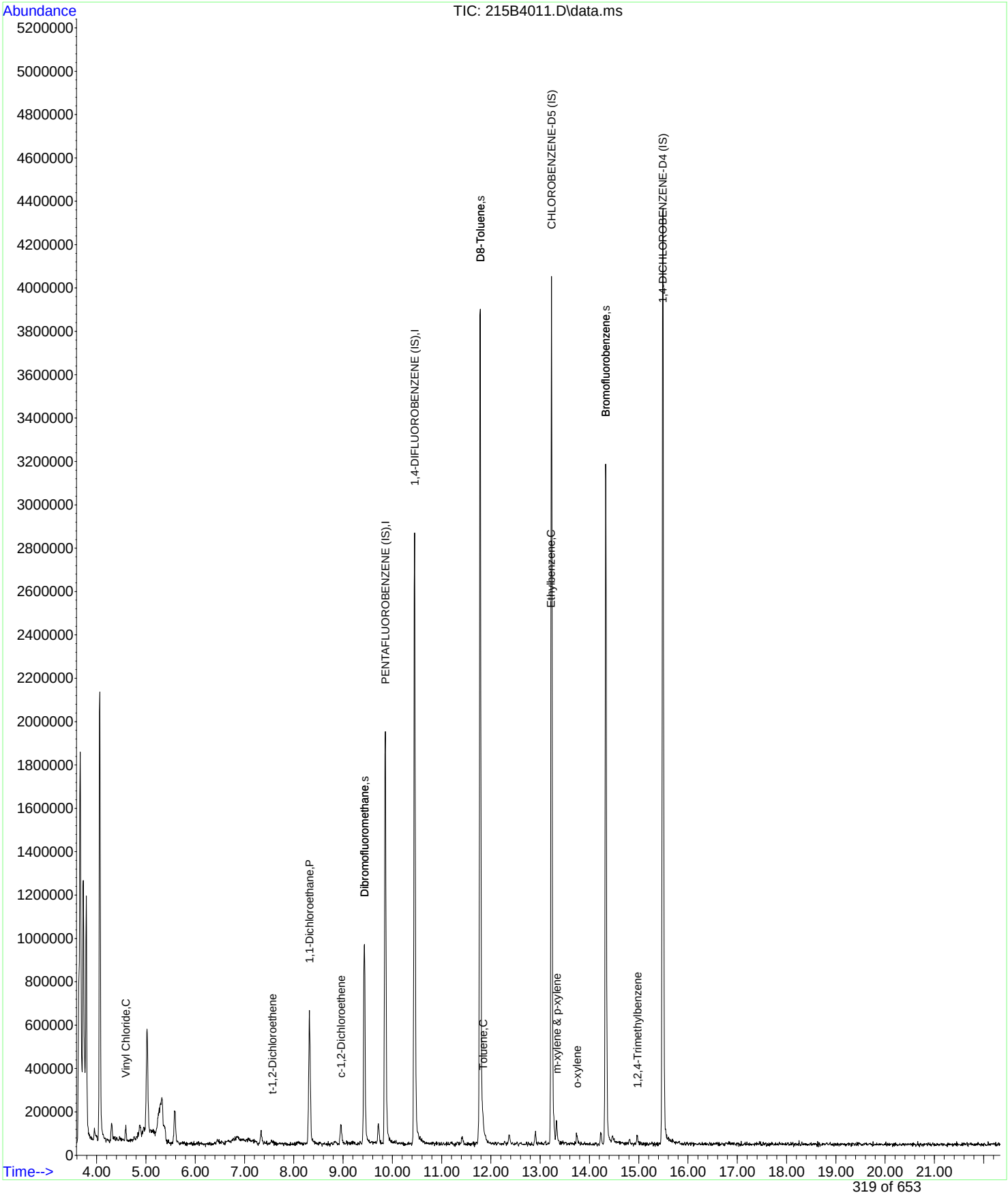
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2862539	46.69 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	36042	1.22 ug/L #	84
57) T-1,3-Dichloropropene	12.072	75	1556	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.277	69	1371	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	12.583	129	1205	N.D.	
62) 1,3-Dichloropropane	12.642	76	1009	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.865	43	1135	N.D.	
65) Ethylbenzene	13.217	106	6501	0.36 ug/L #	53
66) Chlorobenzene	13.300	112	1334	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	29742	1.43 ug/L	95
69) o-xylene	13.746	106	13335	0.62 ug/L	98
70) Styrene	13.740	104	1166	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.022	105	2678	N.D.	
74) Bromofluorobenzene	14.328	95	1349836	54.56 ug/L	86
75) n-Propylbenzene	14.381	91	2069	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.481	156	1122	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	24795	0.39 ug/L #	92
82) 2-Chlorotoluene	14.633	91	1278	N.D.	
83) 4-Chlorotoluene	14.804	91	1584	N.D.	
84) tert-Butylbenzene	14.915	119	1148	N.D.	
85) 1,3,5-Trimethylbenzene	14.551	105	9560	N.D.	
86) p-Isopropyltoluene	15.198	119	1133	N.D.	
87) s-Butylbenzene	15.027	105	1533	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	15.715	91	1159	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4011.D
Acq On : 4 Feb 2021 12:34 pm
Operator : KKW
Sample : AE00180-05
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 04 13:37:11 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4012.D
Acq On : 4 Feb 2021 1:04 pm
Operator : KKW
Sample : AE00180-06
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 04 13:37:14 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1180318	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2454660	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1424205	50.00 ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1381669	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	666893	54.78 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.56%		
52) D8-Toluene	11.784	98	2875930	47.43 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.86%		
73) Bromofluorobenzene	14.328	95	1349073	53.04 ug/L	-0.02
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.046	85	1057	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.592	62	148063	10.40 ug/L #	86
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.415	64	1029	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D. d	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	7.154	41	1086	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.354	84	1050	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.559	96	6644	0.56 ug/L	80
19) Methyl tert-butyl ether	7.459	73	1483	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.070	45	10159	0.26 ug/L #	80
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.317	63	406455	16.76 ug/L #	95
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.417	43	1057	N.D.	
26) c-1,2-Dichloroethene	8.987	96	1116	N.D.	
27) 2,2-Dichloropropane	8.946	77	1940	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.204	56	6367	0.24 ug/L #	81
30) Chloroform	9.293	83	1228	N.D.	
32) Dibromofluoromethane	9.434	113	666893	54.78 ug/L #	88
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.610	75	1096	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.363	117	3226	N.D.	
41) Benzene	9.880	78	23948	0.43 ug/L #	85
42) 1,2-Dichloroethane	9.933	62	1200	N.D.	
43) Trichloroethene	10.462	130	1277	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	10.961	63	1047	N.D.	
47) Bromodichloromethane	10.885	83	1081	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	11.514	63	1254	N.D.	
51) C-1,3-Dichloropropene	11.631	75	1366	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4012.D
Acq On : 4 Feb 2021 1:04 pm
Operator : KKW
Sample : AE00180-06
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 04 13:37:14 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

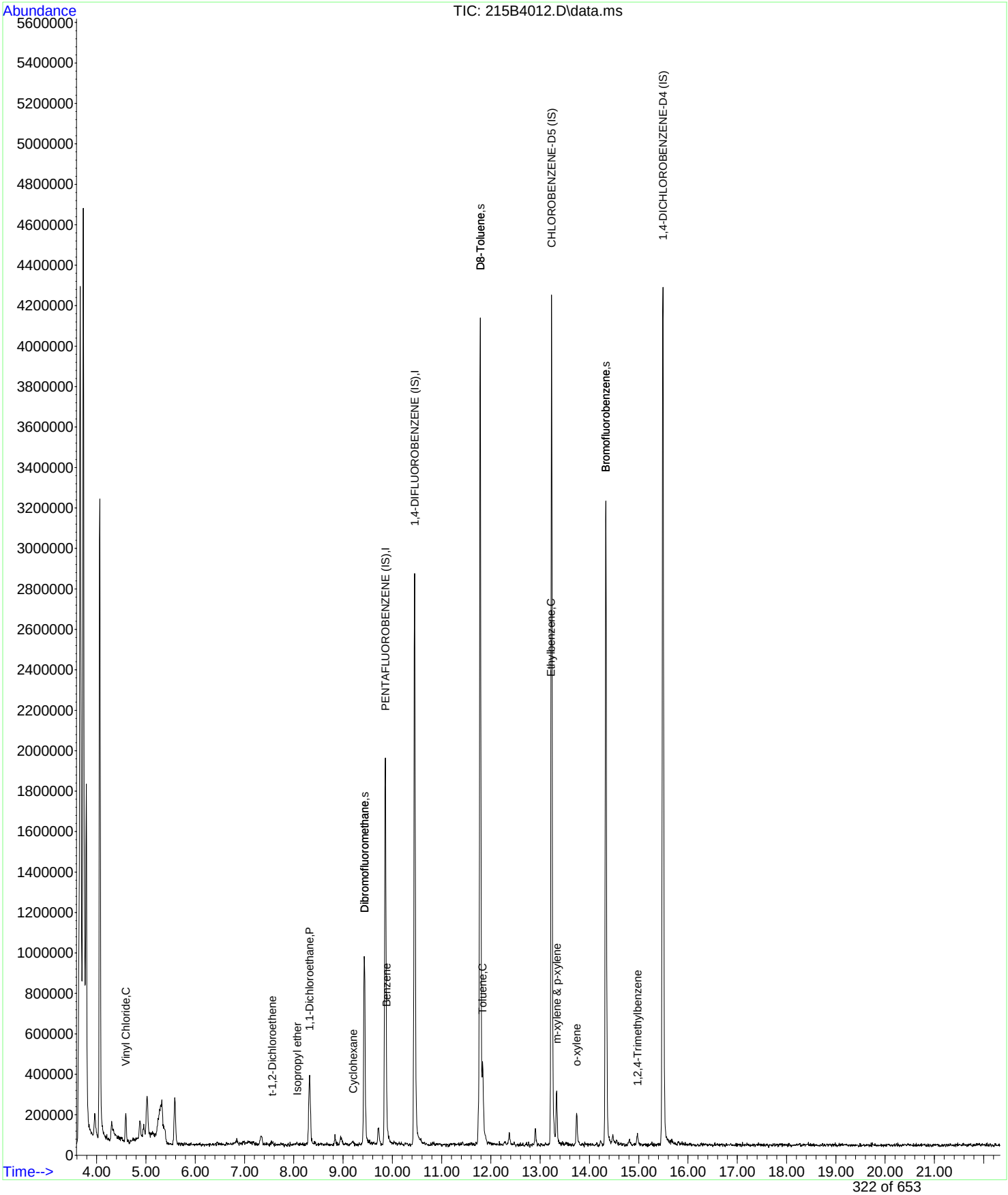
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2875930	47.43 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	154285	5.08 ug/L #	96
57) T-1,3-Dichloropropene	12.324	75	1244	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D. d	
60) 1,1,2-Trichloroethane	12.371	97	1233	N.D.	
61) Dibromochloromethane	0.000		0	N.D. d	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.648	107	1565	N.D.	
64) 2-Hexanone	12.736	43	1015	N.D.	
65) Ethylbenzene	13.217	106	19115	1.04 ug/L #	81
66) Chlorobenzene	13.223	112	1049	N.D.	
67) 1,1,1,2-Tetrachloroethane	13.159	131	1109	N.D.	
68) m-xylene & p-xylene	13.335	106	72206	3.37 ug/L	98
69) o-xylene	13.740	106	60947	2.77 ug/L #	71
70) Styrene	13.770	104	1413	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.005	105	4802	N.D.	
74) Bromofluorobenzene	14.328	95	1349073	53.04 ug/L	88
75) n-Propylbenzene	14.410	91	5771	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.604	83	1816	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.328	156	2202	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	43127	0.67 ug/L	95
82) 2-Chlorotoluene	14.616	91	1007	N.D.	
83) 4-Chlorotoluene	14.810	91	3379	N.D.	
84) tert-Butylbenzene	14.968	119	7633	N.D.	
85) 1,3,5-Trimethylbenzene	14.563	105	12457	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.115	105	1180	N.D.	
88) 1,3-Dichlorobenzene	15.433	146	1059	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	3418	N.D.	
90) n-Butylbenzene	15.673	91	1064	N.D.	
91) 1,2-Dichlorobenzene	16.032	146	1113	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.876	128	1490	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4012.D
Acq On : 4 Feb 2021 1:04 pm
Operator : KKW
Sample : AE00180-06
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 04 13:37:14 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4013.D
Acq On : 4 Feb 2021 1:33 pm
Operator : KKW
Sample : AE00180-07
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 05 07:52:34 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1187500	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2415397	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1358505	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1315950	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	626444	51.15	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.30%			
52) D8-Toluene	11.784	98	2756061	46.20	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.40%			
73) Bromofluorobenzene	14.334	95	1320257	54.42	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.586	62	86460	6.03	ug/L #	80
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	5.579	101	1034	N.D.		
8) Diethyl ether	6.261	59	1021	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.625	76	4882	N.D.		
14) 3-chloropropene	7.307	41	1845	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	7.518	43	1583	N.D.		
18) t-1,2-Dichloroethene	7.542	96	2895	0.24	ug/L #	48
19) Methyl tert-butyl ether	7.659	73	1716	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.059	45	1425	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.311	63	44636	1.83	ug/L #	90
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.523	43	1057	N.D.		
26) c-1,2-Dichloroethene	8.952	96	91587	7.29	ug/L #	78
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	626444	51.15	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.369	117	3025	N.D.		
41) Benzene	9.898	78	7772	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.438	130	1202	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.926	63	1010	N.D.		
47) Bromodichloromethane	10.902	83	1108	N.D.		
48) Methyl Methacrylate	11.055	69	1355	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	11.437	63	1499	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4013.D
Acq On : 4 Feb 2021 1:33 pm
Operator : KKW
Sample : AE00180-07
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 05 07:52:34 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

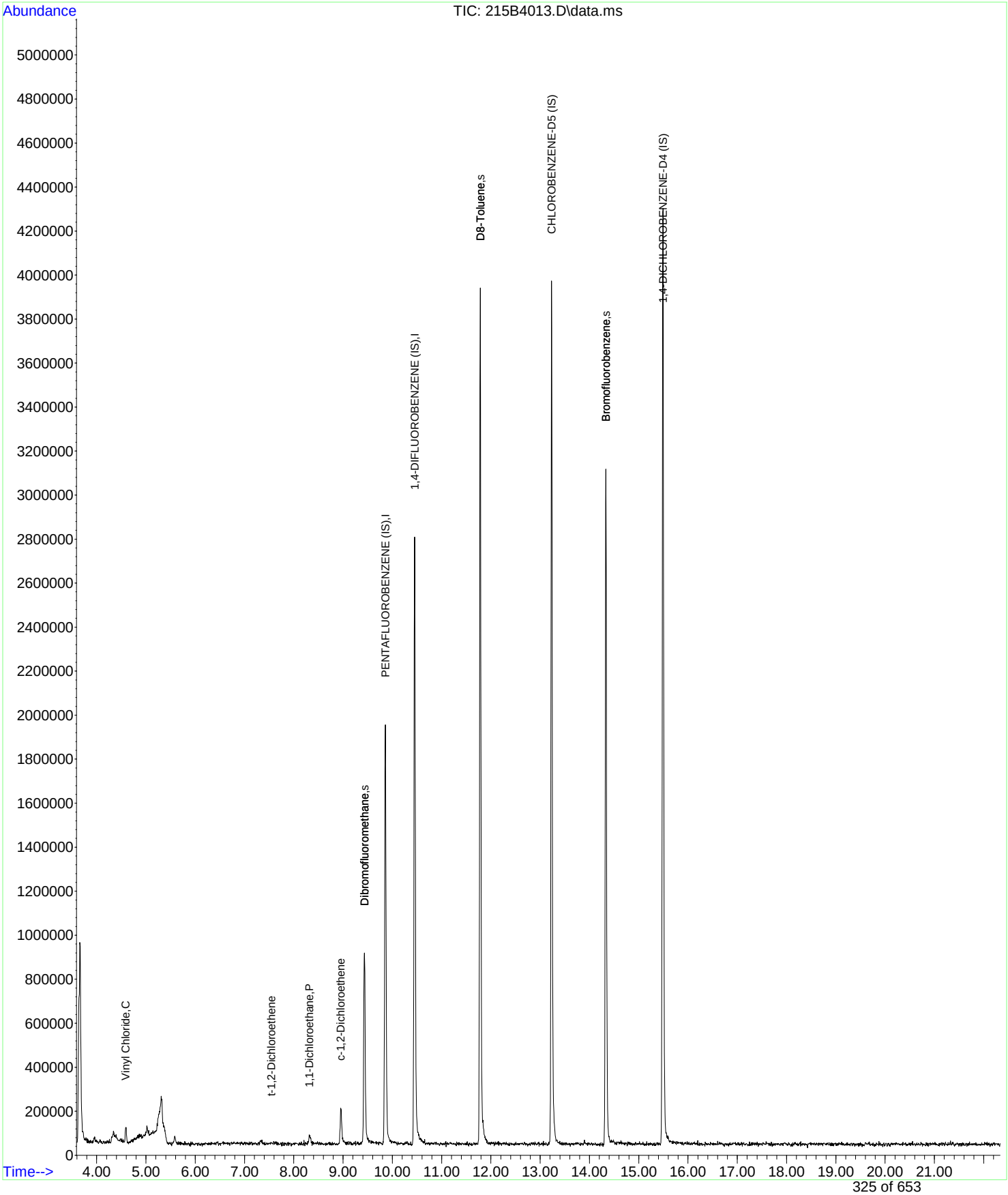
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2755791	46.19 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	2062	N.D.	
57) T-1,3-Dichloropropene	12.048	75	1225	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.160	69	1678	N.D.	
60) 1,1,2-Trichloroethane	12.448	97	1050	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.229	112	1360	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.605	106	1037	N.D.	
70) Styrene	13.852	104	1409	N.D.	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1320257	54.42 ug/L	87
75) n-Propylbenzene	14.328	91	5989	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.322	83	2026	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.346	156	1648	N.D.	
81) 1,2,4-Trimethylbenzene	14.992	105	1100	N.D.	
82) 2-Chlorotoluene	14.569	91	1381	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.874	119	1035	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.992	105	1100	N.D.	
88) 1,3-Dichlorobenzene	15.491	146	2341	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	2341	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4013.D
Acq On : 4 Feb 2021 1:33 pm
Operator : KKW
Sample : AE00180-07
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 05 07:52:34 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4014.D
Acq On : 4 Feb 2021 2:03 pm
Operator : KKW
Sample : AE00180-08
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 05 07:52:39 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1217323	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2502226	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1407587	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1372086	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.433	113	660059	52.57 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.14%		
52) D8-Toluene	11.784	98	2849744	46.11 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.22%		
73) Bromofluorobenzene	14.334	95	1389755	55.29 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.58%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.592	62	545804	37.16 ug/L	99
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.362	64	1132	N.D.	
7) Trichlorofluoromethane	5.597	101	3231	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.631	76	3644	N.D.	
14) 3-chloropropene	7.230	41	1167	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.354	84	1882	N.D.	
17) Methyl Acetate	7.524	43	1055	N.D.	
18) t-1,2-Dichloroethene	7.547	96	3575	0.29 ug/L #	64
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.041	45	2077	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.317	63	111399	4.45 ug/L #	98
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.529	43	2165	N.D.	
26) c-1,2-Dichloroethene	8.958	96	217137	16.86 ug/L	84
27) 2,2-Dichloropropane	9.093	77	1070	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.287	56	1216	N.D.	
30) Chloroform	9.339	83	1340	N.D.	
32) Dibromofluoromethane	9.433	113	660900	52.64 ug/L #	89
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.651	75	1019	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	9.839	41	1422	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.375	117	1064	N.D.	
41) Benzene	9.909	78	7523	N.D.	
42) 1,2-Dichloroethane	9.962	62	1374	N.D.	
43) Trichloroethene	0.000		0	N.D. d	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	11.214	88	4276	29.48 ug/L	88
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.637	75	1116	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4014.D
Acq On : 4 Feb 2021 2:03 pm
Operator : KKW
Sample : AE00180-08
Misc :
ALS Vial : 14 Sample Multiplier: 1

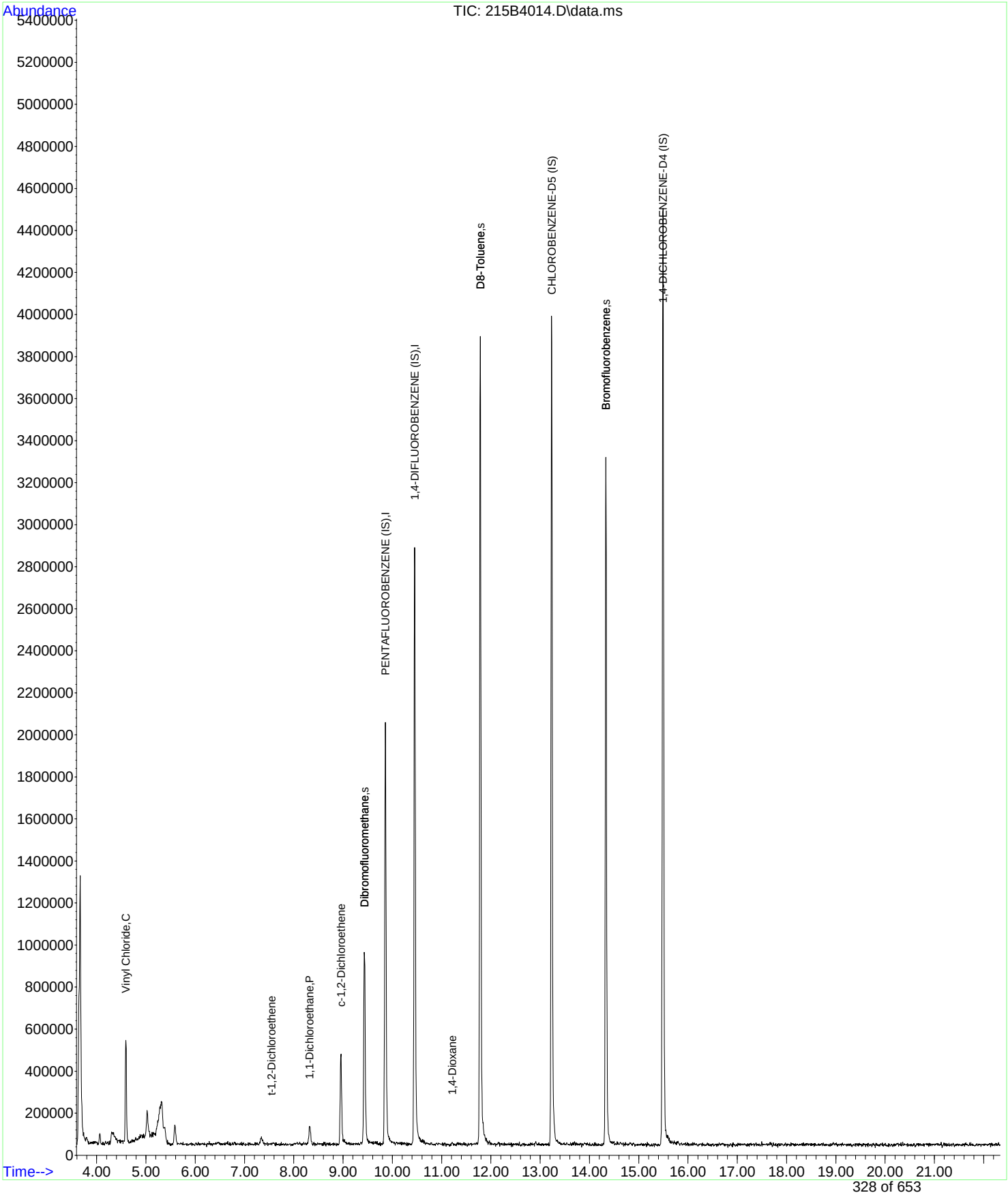
Quant Time: Feb 05 07:52:39 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2841124	45.97 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	5496	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.148	69	1610	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.518	76	1087	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.994	43	1006	N.D.	
65) Ethylbenzene	13.223	106	1249	N.D.	
66) Chlorobenzene	13.241	112	1055	N.D.	
67) 1,1,1,2-Tetrachloroethane	13.164	131	1002	N.D.	
68) m-xylene & p-xylene	13.358	106	2505	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1389755	55.29 ug/L	86
75) n-Propylbenzene	14.328	91	5421	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.369	83	1501	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.340	156	2395	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	14.622	91	1239	N.D.	
83) 4-Chlorotoluene	14.815	91	1193	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	2686	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	2686	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4014.D
Acq On : 4 Feb 2021 2:03 pm
Operator : KKW
Sample : AE00180-08
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 05 07:52:39 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4015.D
Acq On : 4 Feb 2021 2:33 pm
Operator : KKW
Sample : AE00180-09
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 05 07:52:43 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1178944	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2372364	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1372897	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1346543	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	625485	51.44	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.88%			
52) D8-Toluene	11.784	98	2819799	48.12	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.24%			
73) Bromofluorobenzene	14.334	95	1340314	54.67	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.34%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	4.386	50	1304	N.D.		
4) Vinyl Chloride	4.586	62	16999	1.20	ug/L #	1
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D. d		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	0.000		0	N.D. d		
14) 3-chloropropene	0.000		0	N.D. d		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.336	84	1227	N.D.		
17) Methyl Acetate	7.471	43	1412	N.D.		
18) t-1,2-Dichloroethene	7.571	96	6252	0.53	ug/L #	54
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.100	45	2536	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.323	63	18395	0.76	ug/L #	90
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.417	43	1145	N.D.		
26) c-1,2-Dichloroethene	8.958	96	136937	10.98	ug/L	86
27) 2,2-Dichloropropane	9.140	77	1014	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.298	56	1163	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	626686	51.54	ug/L #	87
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	10.074	41	1178	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	0.000		0	N.D. d		
41) Benzene	9.880	78	4661	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	6908	0.63	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	10.902	93	1037	N.D.		
46) 1,2-Dichloropropane	10.955	63	1468	N.D.		
47) Bromodichloromethane	11.073	83	1004	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D. d		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4015.D
Acq On : 4 Feb 2021 2:33 pm
Operator : KKW
Sample : AE00180-09
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 05 07:52:43 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

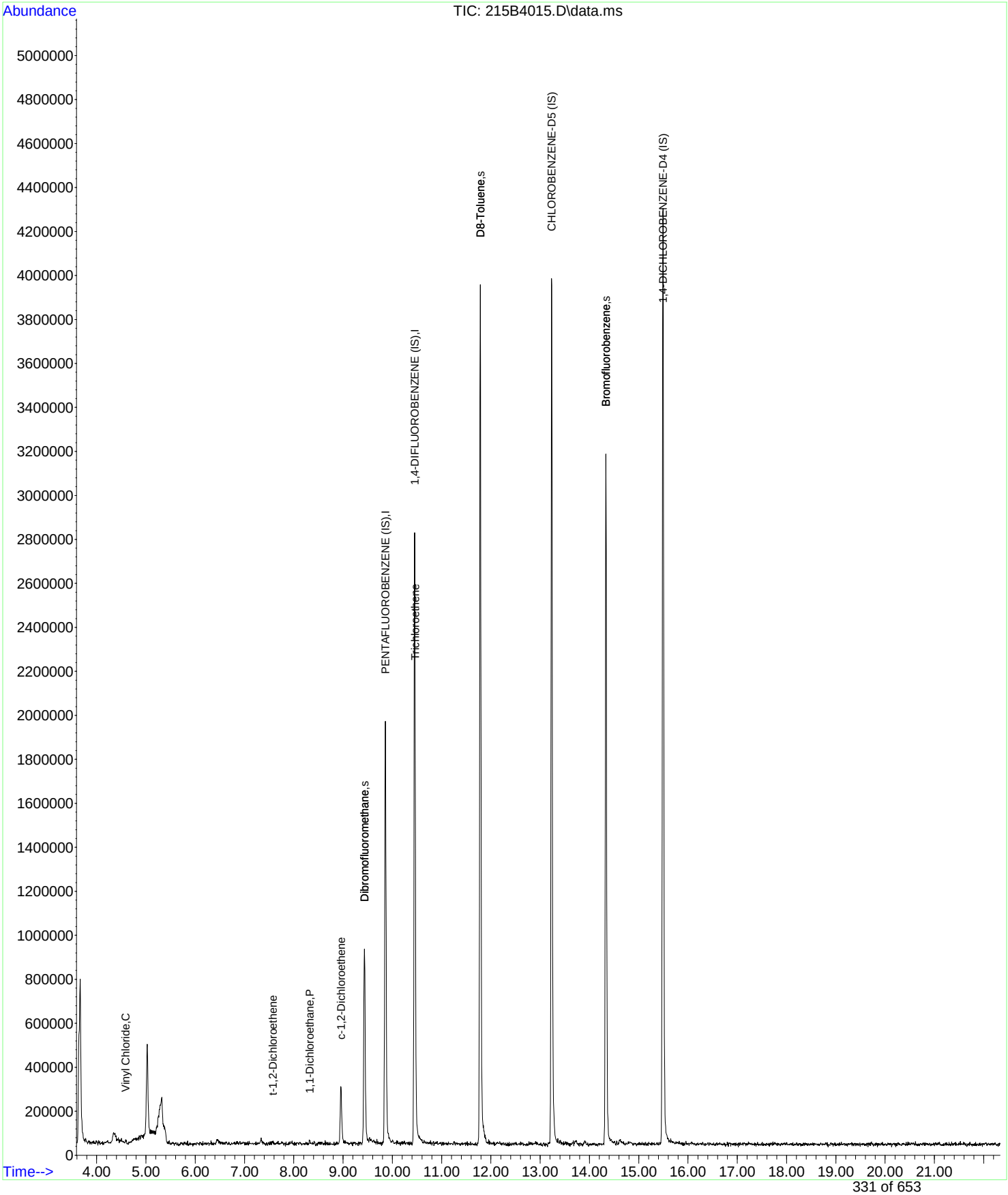
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2813482	48.01 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	1341	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.260	69	1248	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.358	112	1296	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.740	106	1023	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1340314	54.67 ug/L	87
75) n-Propylbenzene	14.428	91	1105	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.445	83	1050	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	14.774	91	1095	N.D.	
83) 4-Chlorotoluene	14.774	91	1095	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.404	105	1157	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.485	146	1504	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	1504	N.D.	
90) n-Butylbenzene	15.715	91	1018	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4015.D
Acq On : 4 Feb 2021 2:33 pm
Operator : KKW
Sample : AE00180-09
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 05 07:52:43 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4016.D
Acq On : 4 Feb 2021 3:02 pm
Operator : KKW
Sample : AE00180-10
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 05 07:52:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1215606	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2438959	50.00	ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1392403	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1353015	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	656571	52.37	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.74%			
52) D8-Toluene	11.784	98	2892131	48.01	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.02%			
73) Bromofluorobenzene	14.334	95	1357188	54.58	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.16%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.946	85	1738	N.D.		
3) Chloromethane	4.422	50	1594	N.D.		
4) Vinyl Chloride	4.592	62	333784	22.76	ug/L	92
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.237	59	1422	N.D.		
9) 1,1-Dichloroethene	6.572	96	1323	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	6.643	76	1978	N.D.		
14) 3-chloropropene	7.301	41	1046	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.383	84	1306	N.D.		
17) Methyl Acetate	7.595	43	1226	N.D.		
18) t-1,2-Dichloroethene	7.571	96	11100	0.91	ug/L #	69
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.076	45	6409	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.323	63	41975	1.68	ug/L #	85
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.458	43	1258	N.D.		
26) c-1,2-Dichloroethene	8.958	96	624544	48.55	ug/L #	83
27) 2,2-Dichloropropane	9.122	77	1009	N.D.		
28) Bromochloromethane	0.000		0	N.D. d		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.064	83	1140	N.D.		
32) Dibromofluoromethane	9.434	113	658929	52.56	ug/L #	90
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.575	75	1018	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	9.851	41	1287	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	0.000		0	N.D. d		
41) Benzene	9.886	78	7658	N.D.		
42) 1,2-Dichloroethane	10.215	62	1148	N.D.		
43) Trichloroethene	10.456	130	2843	0.25	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.850	63	1542	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D. d		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.578	75	1408	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4016.D
Acq On : 4 Feb 2021 3:02 pm
Operator : KKW
Sample : AE00180-10
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 05 07:52:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

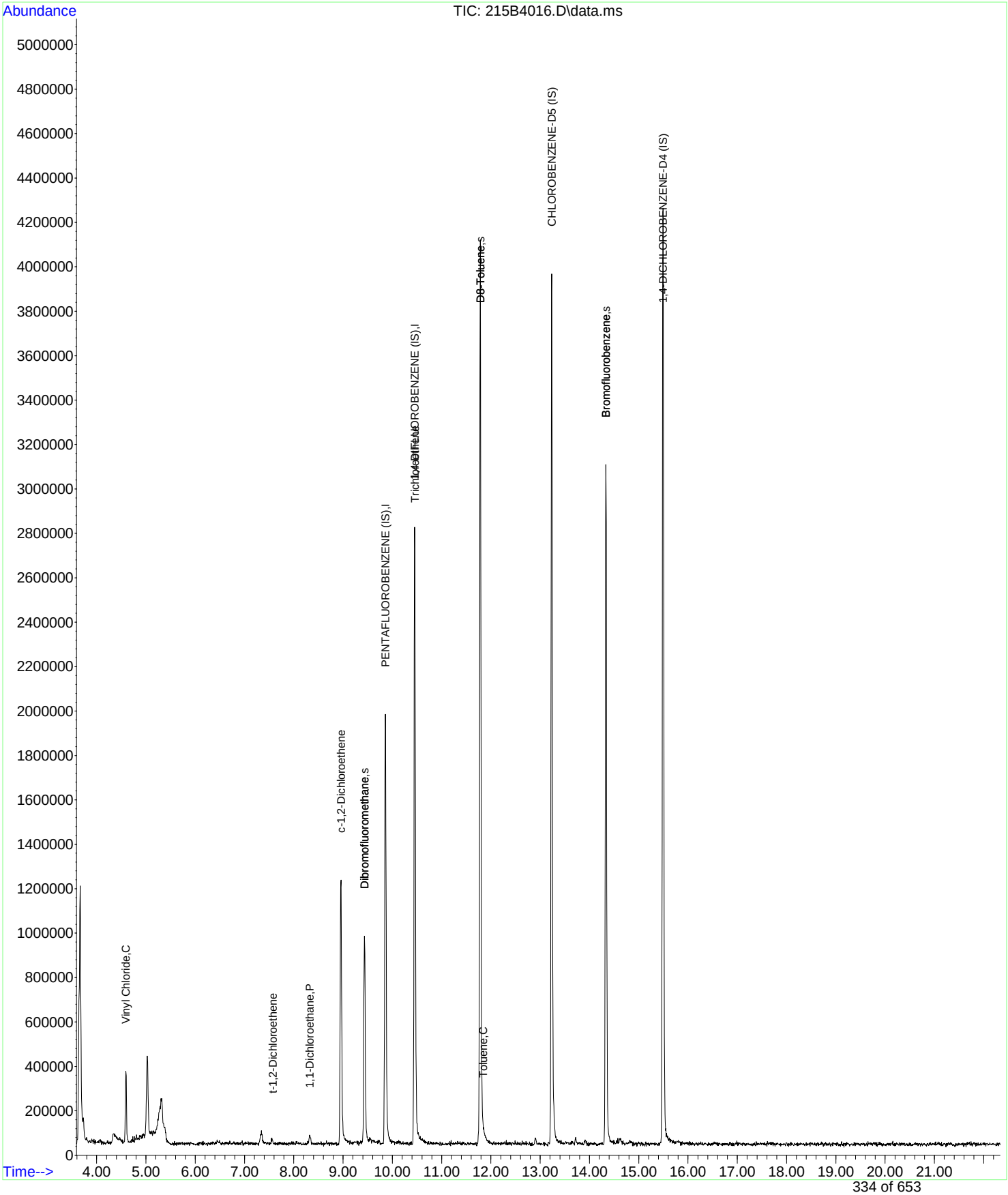
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2880635	47.82 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	7853	0.26 ug/L	84
57) T-1,3-Dichloropropene	12.236	75	1189	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.313	69	1612	N.D.	
60) 1,1,2-Trichloroethane	12.219	97	1026	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.765	43	1301	N.D.	
65) Ethylbenzene	13.235	106	2133	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.347	106	3371	N.D.	
69) o-xylene	13.788	106	2303	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1357188	54.58 ug/L	87
75) n-Propylbenzene	14.334	91	2875	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.569	83	1097	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	2572	N.D.	
82) 2-Chlorotoluene	14.616	91	1088	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.851	119	1209	N.D.	
85) 1,3,5-Trimethylbenzene	14.575	105	1369	N.D.	
86) p-Isopropyltoluene	15.333	119	1082	N.D.	
87) s-Butylbenzene	15.110	105	1093	N.D.	
88) 1,3-Dichlorobenzene	15.433	146	1300	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	2100	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4016.D
Acq On : 4 Feb 2021 3:02 pm
Operator : KKW
Sample : AE00180-10
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 05 07:52:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4017.D
Acq On : 4 Feb 2021 3:32 pm
Operator : KKW
Sample : AE00180-11
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 05 07:52:51 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	1149886	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2385404	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1381654	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1358096	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	641035	54.05 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.10%		
52) D8-Toluene	11.784	98	2822726	47.91 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.82%		
73) Bromofluorobenzene	14.334	95	1335513	54.13 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.26%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.946	85	2241	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.598	62	56440	4.07 ug/L #	83
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.420	64	1205	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.214	59	1139	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	6.572	151	21553	3.24 ug/L	95
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.637	76	3835	N.D.	
14) 3-chloropropene	7.224	41	1030	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.348	84	1023	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.553	96	16210	1.41 ug/L	89
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.182	45	1065	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.535	43	1485	N.D.	
26) c-1,2-Dichloroethene	8.952	96	584748	48.06 ug/L	84
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.222	56	1384	N.D.	
30) Chloroform	9.216	83	2034	N.D.	
32) Dibromofluoromethane	9.434	113	642149	54.15 ug/L #	89
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.539	75	1009	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.363	117	3490	N.D.	
41) Benzene	9.915	78	4078	N.D.	
42) 1,2-Dichloroethane	10.168	62	1298	N.D.	
43) Trichloroethene	10.456	130	276181	25.07 ug/L	94
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.938	93	1302	N.D.	
46) 1,2-Dichloropropane	11.096	63	1338	N.D.	
47) Bromodichloromethane	10.979	83	1276	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.660	75	1173	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4017.D
Acq On : 4 Feb 2021 3:32 pm
Operator : KKW
Sample : AE00180-11
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 05 07:52:51 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

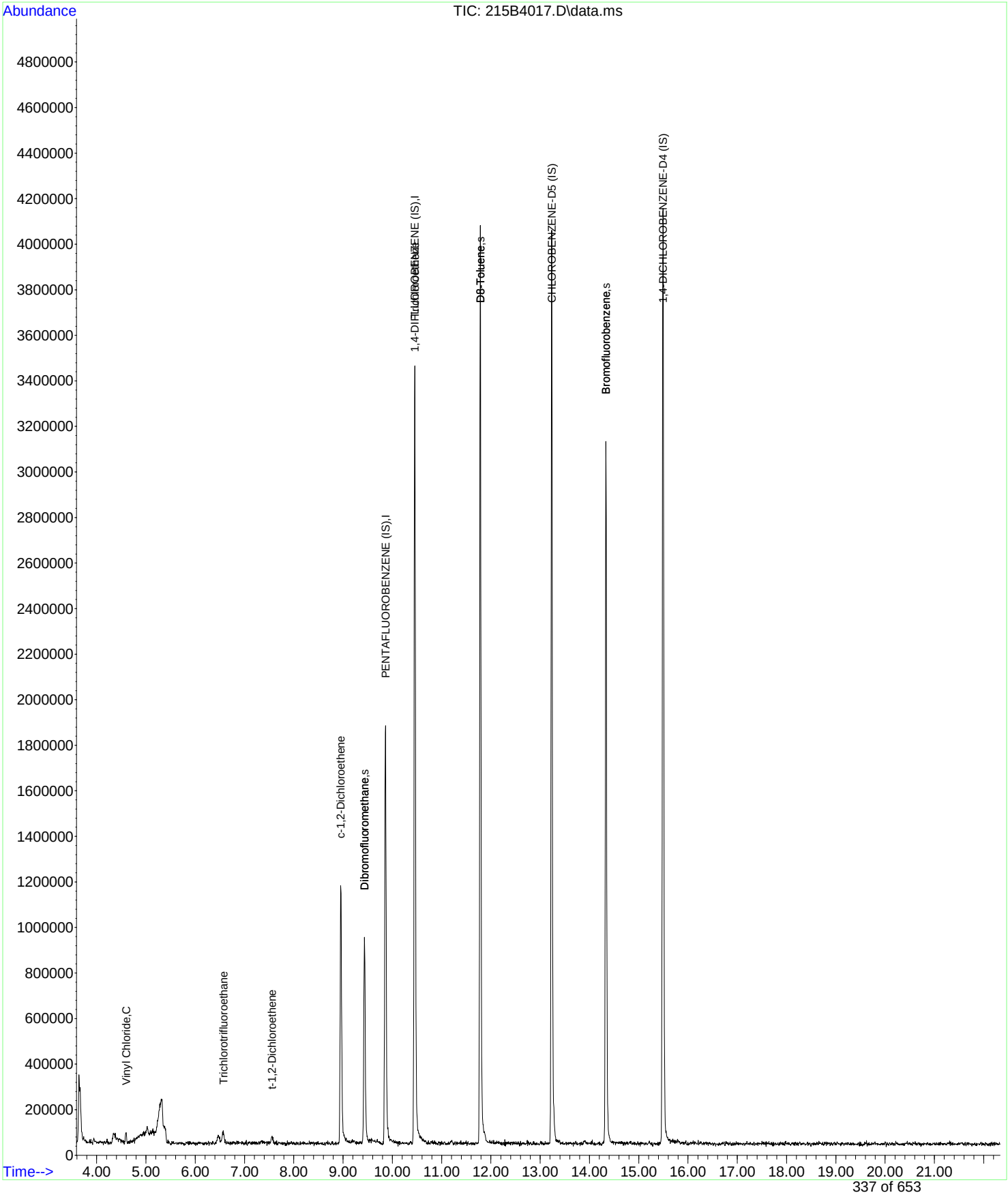
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2814887	47.77 ug/L #	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.842	92	1461	N.D.	
57) T-1,3-Dichloropropene	12.078	75	1242	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.924	107	1026	N.D.	
64) 2-Hexanone	12.977	43	1106	N.D.	
65) Ethylbenzene	13.364	106	1505	N.D.	
66) Chlorobenzene	13.229	112	2174	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.364	106	1579	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1335513	54.13 ug/L	86
75) n-Propylbenzene	14.345	91	2411	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	15.762	91	1200	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.664	128	1718	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4017.D
Acq On : 4 Feb 2021 3:32 pm
Operator : KKW
Sample : AE00180-11
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 05 07:52:51 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4018.D
Acq On : 4 Feb 2021 4:01 pm
Operator : KKW
Sample : AE00180-12@2.5X
Misc : 2.5
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Feb 05 07:52:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	1174117	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2417037	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1426949	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1359965	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.433	113	658732	54.40 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.80%		
52) D8-Toluene	11.784	98	2848356	47.71 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.42%		
73) Bromofluorobenzene	14.334	95	1383008	54.27 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.54%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	4.392	50	3445	N.D.	
4) Vinyl Chloride	4.598	62	34110	2.41 ug/L #	1
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.450	64	1071	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.355	59	1015	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	6.549	151	37834	5.57 ug/L	95
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.625	76	2260	N.D.	
14) 3-chloropropene	7.236	41	1168	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.348	84	6188	0.50 ug/L #	60
17) Methyl Acetate	7.495	43	1231	N.D.	
18) t-1,2-Dichloroethene	7.542	96	4781	0.41 ug/L	89
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.123	45	1175	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.611	43	2142	N.D.	
26) c-1,2-Dichloroethene	8.952	96	727273	58.54 ug/L #	82
27) 2,2-Dichloropropane	9.157	77	1701	N.D.	
28) Bromochloromethane	0.000		0	N.D. d	
29) Cyclohexane	9.057	56	1397	N.D.	
30) Chloroform	9.234	83	5298	0.23 ug/L #	83
32) Dibromofluoromethane	9.433	113	659773	54.48 ug/L #	94
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.533	75	1482	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.375	117	2052	N.D.	
41) Benzene	9.892	78	3723	N.D.	
42) 1,2-Dichloroethane	10.227	62	1260	N.D.	
43) Trichloroethene	10.456	130	819106	73.39 ug/L #	81
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	11.008	63	1044	N.D.	
47) Bromodichloromethane	11.143	83	1236	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	11.555	63	1154	N.D.	
51) C-1,3-Dichloropropene	11.490	75	1041	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4018.D
Acq On : 4 Feb 2021 4:01 pm
Operator : KKW
Sample : AE00180-12@2.5X
Misc : 2.5
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Feb 05 07:52:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

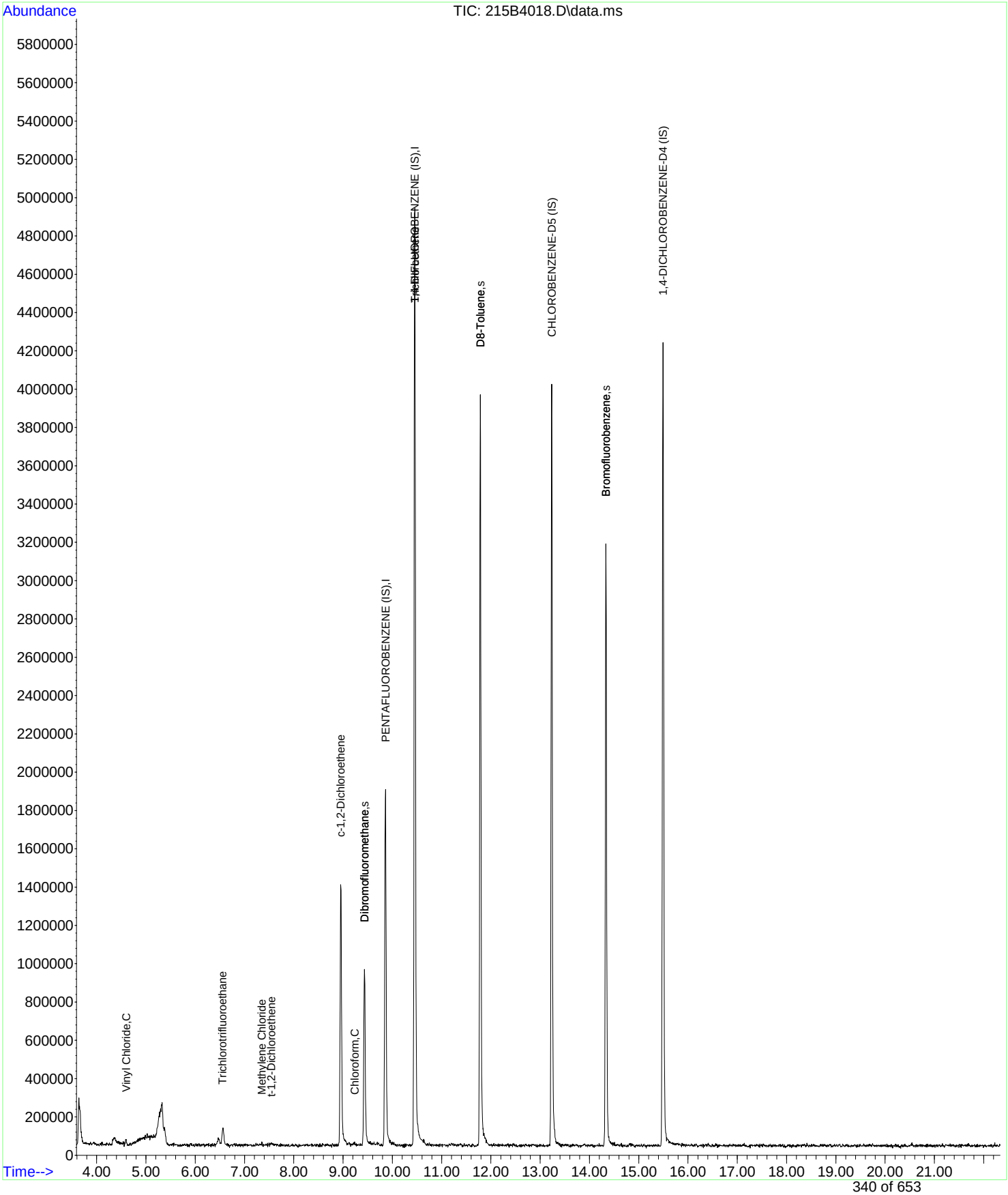
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2848356	47.71 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	12.324	75	1410	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.195	97	1486	N.D.	
61) Dibromochloromethane	12.407	129	1320	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.924	43	1111	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.253	112	1239	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1383008	54.27 ug/L	85
75) n-Propylbenzene	14.351	91	2898	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.381	83	1043	N.D.	
77) 1,2,3-Trichloropropane	14.516	61	1009	N.D.	
78) T-1,4-Dichloro-2-Butene	14.293	53	1027	N.D.	
80) Bromobenzene	14.328	156	1687	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.474	146	2468	N.D.	
89) 1,4-Dichlorobenzene	15.474	146	2468	N.D.	
90) n-Butylbenzene	15.562	91	1283	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4018.D
Acq On : 4 Feb 2021 4:01 pm
Operator : KKW
Sample : AE00180-12@2.5X
Misc : 2.5
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Feb 05 07:52:56 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4019.D
Acq On : 4 Feb 2021 4:31 pm
Operator : KKW
Sample : AE00180-13@10X
Misc : 10
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 05 07:53:00 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1206545	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2436731	50.00 ug/L	-0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1382941	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1338681	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	662851	53.27 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.54%		
52) D8-Toluene	11.784	98	2811766	46.72 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.44%		
73) Bromofluorobenzene	14.334	95	1345541	54.48 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.934	85	1908	N.D.	
3) Chloromethane	4.404	50	1835	N.D.	
4) Vinyl Chloride	4.592	62	19283	1.32 ug/L #	46
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.309	64	1045	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D. d	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.807	142	1489	N.D.	
13) Carbon Disulfide	6.637	76	1938	N.D.	
14) 3-chloropropene	7.219	41	1127	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.342	84	5711	0.45 ug/L #	63
17) Methyl Acetate	7.571	43	1745	N.D.	
18) t-1,2-Dichloroethene	7.559	96	4962	0.41 ug/L #	57
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.941	45	1189	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.458	43	1077	N.D.	
26) c-1,2-Dichloroethene	8.958	96	621035	48.64 ug/L	87
27) 2,2-Dichloropropane	9.028	77	1262	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.222	83	3824	N.D.	
32) Dibromofluoromethane	9.434	113	664888	53.43 ug/L #	92
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.821	41	1169	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.898	78	3880	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.450	130	577099	51.29 ug/L #	83
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	11.138	63	1352	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	11.190	69	1084	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4019.D
Acq On : 4 Feb 2021 4:31 pm
Operator : KKW
Sample : AE00180-13@10X
Misc : 10
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 05 07:53:00 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

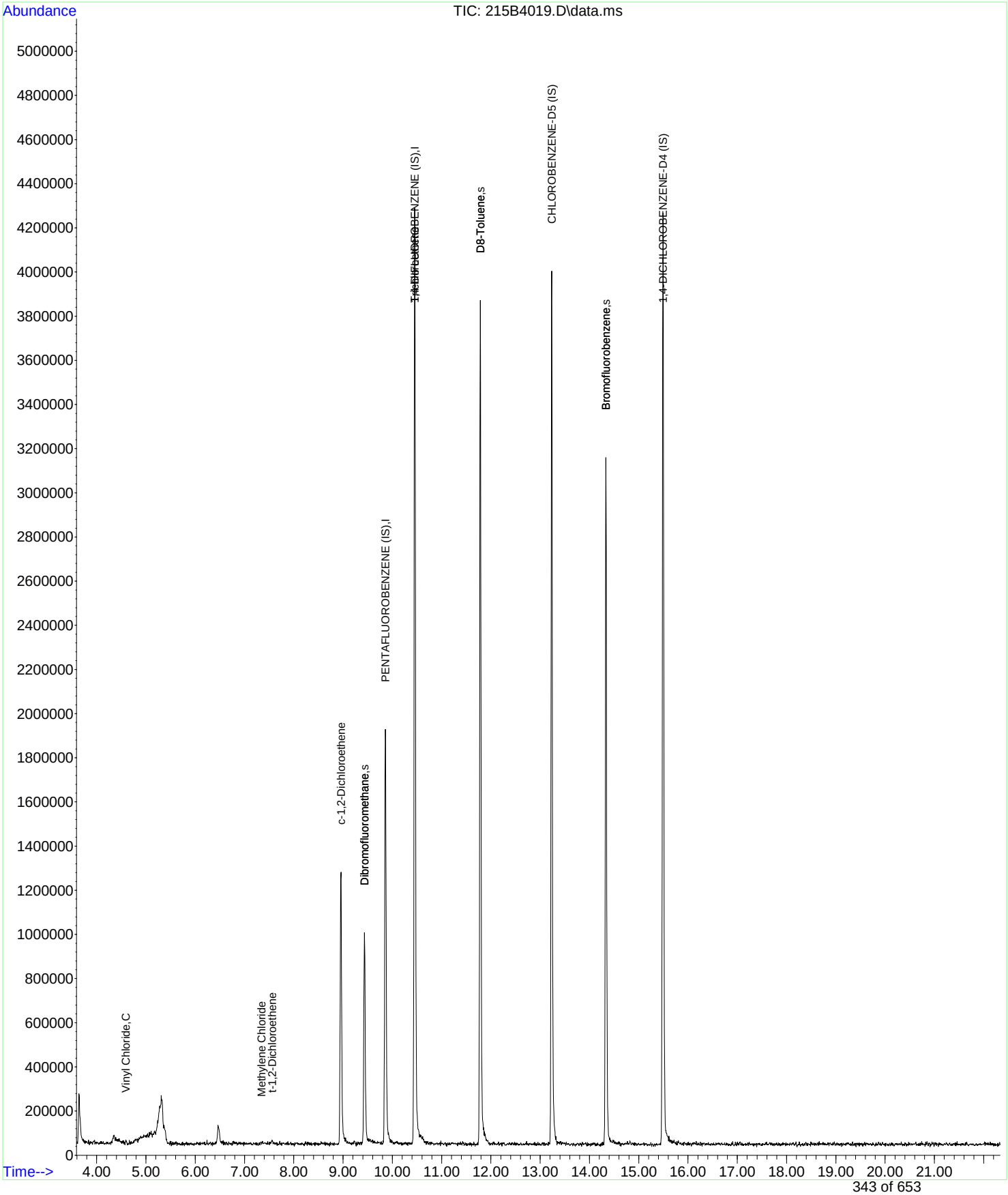
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2807967	46.65 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	2213	N.D.	
57) T-1,3-Dichloropropene	12.136	75	1021	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.247	112	1573	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1345541	54.48 ug/L	85
75) n-Propylbenzene	14.334	91	4074	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.410	83	1011	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.328	156	1174	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.433	146	1526	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	1659	N.D.	
90) n-Butylbenzene	15.720	91	1077	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	19.011	180	1005	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4019.D
Acq On : 4 Feb 2021 4:31 pm
Operator : KKW
Sample : AE00180-13@10X
Misc : 10
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Feb 05 07:53:00 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4020.D
Acq On : 4 Feb 2021 5:00 pm
Operator : KKW
Sample : AE00180-14@100X
Misc : 100
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Feb 05 07:53:04 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1149494	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2354754	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1352565	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1326447	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	617980	52.12 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.24%		
52) D8-Toluene	11.784	98	2783862	47.86 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.72%		
73) Bromofluorobenzene	14.334	95	1327901	54.97 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.94%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.975	85	1884	N.D.	
3) Chloromethane	4.404	50	2599	N.D.	
4) Vinyl Chloride	4.592	62	23358	1.68 ug/L #	58
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.208	59	1147	N.D.	
9) 1,1-Dichloroethene	6.537	96	2213	0.22 ug/L #	81
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.637	76	1970	N.D.	
14) 3-chloropropene	7.271	41	1034	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.348	84	6803	0.57 ug/L #	46
17) Methyl Acetate	7.412	43	1362	N.D.	
18) t-1,2-Dichloroethene	7.565	96	1755	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.888	45	1165	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.182	63	1112	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.540	43	1181	N.D.	
26) c-1,2-Dichloroethene	8.958	96	698506	57.43 ug/L #	82
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.234	83	5096	0.23 ug/L #	79
32) Dibromofluoromethane	9.434	113	617980	52.12 ug/L #	89
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.657	75	1214	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.375	117	1385	N.D.	
41) Benzene	9.886	78	5982	N.D.	
42) 1,2-Dichloroethane	10.203	62	1040	N.D.	
43) Trichloroethene	10.462	130	802970	73.85 ug/L #	80
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	11.061	63	1132	N.D.	
47) Bromodichloromethane	10.926	83	1672	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	11.484	63	1218	N.D.	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4020.D
Acq On : 4 Feb 2021 5:00 pm
Operator : KKW
Sample : AE00180-14@100X
Misc : 100
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Feb 05 07:53:04 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

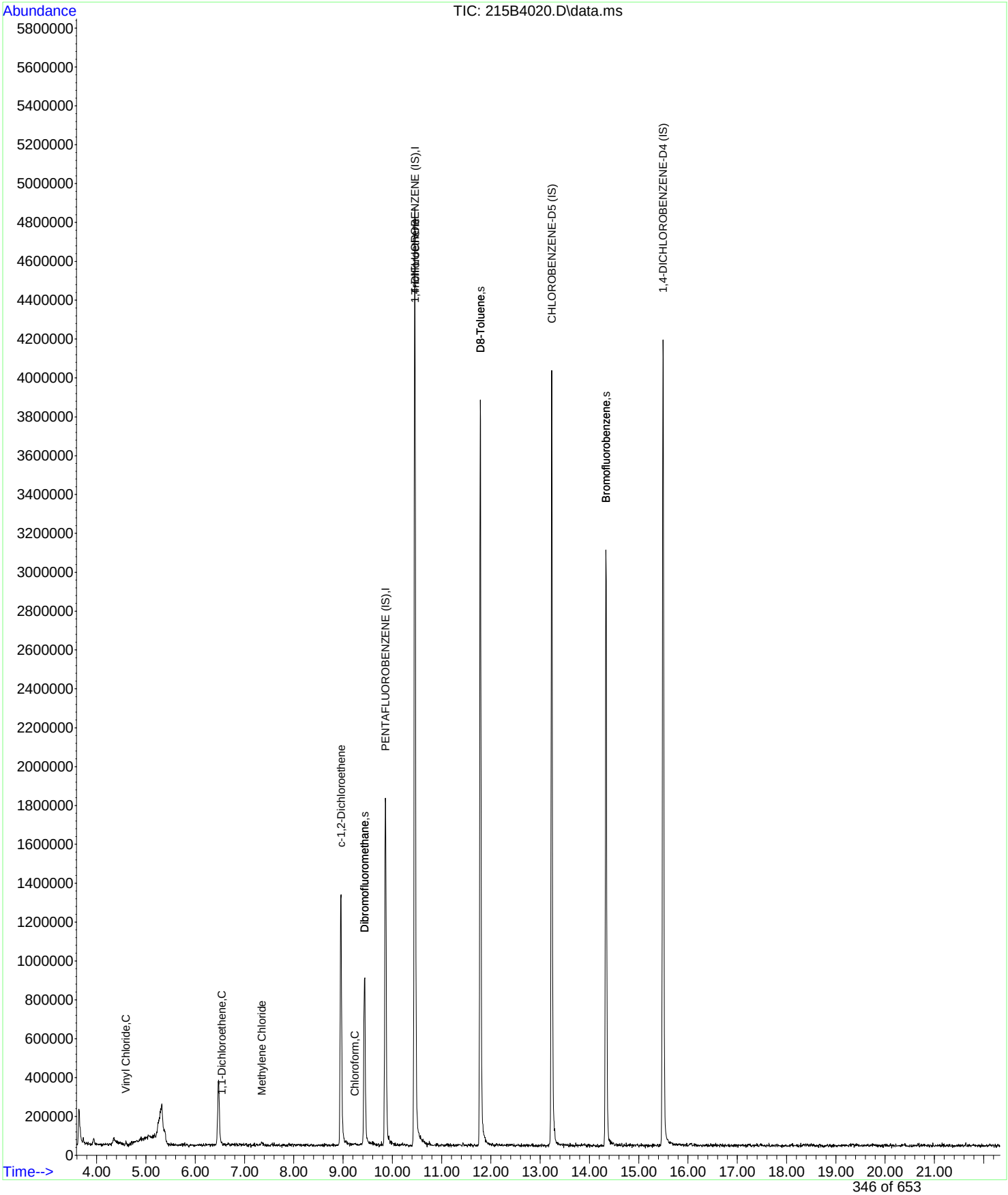
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2783862	47.86 ug/L	97
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.895	92	1025	N.D.	
57) T-1,3-Dichloropropene	12.248	75	1143	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.207	69	1759	N.D.	
60) 1,1,2-Trichloroethane	12.471	97	1167	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.583	76	1053	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1327901	54.97 ug/L	86
75) n-Propylbenzene	14.322	91	4851	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.346	83	1047	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.340	156	1336	N.D.	
81) 1,2,4-Trimethylbenzene	15.057	105	1141	N.D.	
82) 2-Chlorotoluene	14.739	91	1275	N.D.	
83) 4-Chlorotoluene	14.739	91	1275	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.610	105	1154	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.057	105	1141	N.D.	
88) 1,3-Dichlorobenzene	15.485	146	1653	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	1653	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.723	128	1226	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4020.D
Acq On : 4 Feb 2021 5:00 pm
Operator : KKW
Sample : AE00180-14@100X
Misc : 100
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Feb 05 07:53:04 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4021.D
Acq On : 4 Feb 2021 5:30 pm
Operator : KKW
Sample : AE00180-15@500X
Misc : 500
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Feb 05 07:53:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1155769	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2390674	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1383191	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1345577	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	628585	52.73	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.46%			
52) D8-Toluene	11.784	98	2801014	47.43	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.86%			
73) Bromofluorobenzene	14.334	95	1343443	54.39	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d	
3) Chloromethane	4.386	50	1437	N.D.		
4) Vinyl Chloride	4.586	62	25130	1.80	ug/L #	53
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.362	64	1227	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.008	59	1091	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.619	76	1087	N.D.		
14) 3-chloropropene	7.166	41	1267	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.342	84	1972	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.559	96	2716	0.24	ug/L #	55
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.053	45	2042	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.176	63	1144	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.546	43	1154	N.D.		
26) c-1,2-Dichloroethene	8.958	96	480878	39.32	ug/L	83
27) 2,2-Dichloropropane	9.046	77	1056	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.081	56	1050	N.D.		
30) Chloroform	9.240	83	1591	N.D.		
32) Dibromofluoromethane	9.434	113	628928	52.76	ug/L #	87
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.386	117	1618	N.D.		
41) Benzene	9.886	78	3159	N.D.		
42) 1,2-Dichloroethane	10.127	62	1031	N.D.		
43) Trichloroethene	10.456	130	506698	45.90	ug/L #	84
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.867	63	1274	N.D.		
47) Bromodichloromethane	11.067	83	1010	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
51) C-1,3-Dichloropropene	11.637	75	1440	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4021.D
Acq On : 4 Feb 2021 5:30 pm
Operator : KKW
Sample : AE00180-15@500X
Misc : 500
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Feb 05 07:53:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

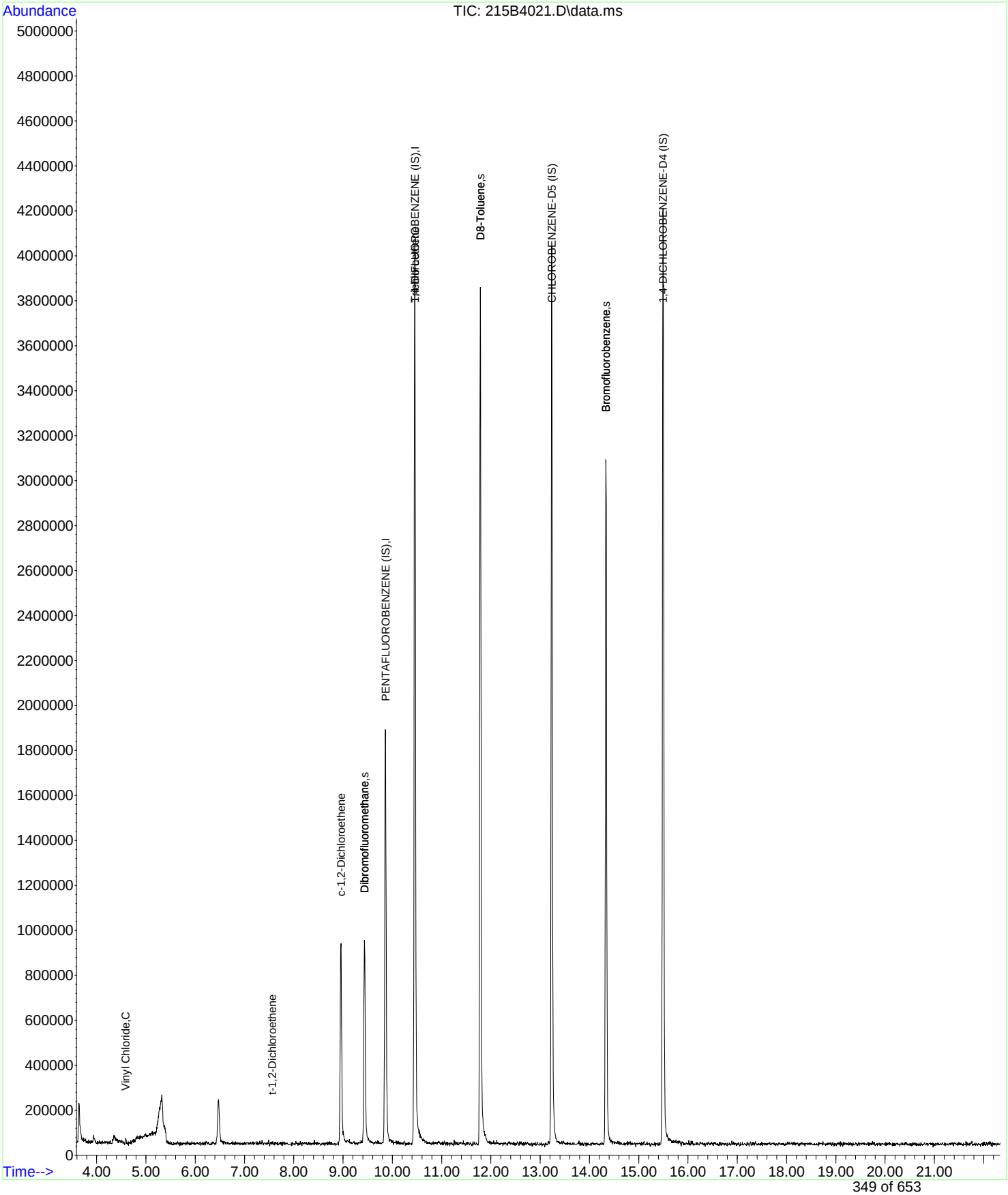
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2799563	47.41 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.813	92	1373	N.D.	
57) T-1,3-Dichloropropene	12.266	75	1736	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.383	69	1422	N.D.	
60) 1,1,2-Trichloroethane	12.360	97	1800	N.D.	
61) Dibromochloromethane	12.542	129	1218	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.223	112	1145	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.864	104	1521	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1343443	54.39 ug/L	88
75) n-Propylbenzene	14.334	91	5068	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.369	83	1085	N.D.	
77) 1,2,3-Trichloropropane	14.604	61	1018	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.992	105	1024	N.D.	
82) 2-Chlorotoluene	14.557	91	1341	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.992	105	1024	N.D.	
88) 1,3-Dichlorobenzene	15.485	146	2175	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	2175	N.D.	
90) n-Butylbenzene	15.855	91	1728	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4021.D
Acq On : 4 Feb 2021 5:30 pm
Operator : KKW
Sample : AE00180-15@500X
Misc : 500
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Feb 05 07:53:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4022.D
Acq On : 4 Feb 2021 5:59 pm
Operator : KKW
Sample : AE00180-16
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Feb 05 07:53:12 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	1215488	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2425935	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1382411	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1375428	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	664259	52.99 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.98%		
52) D8-Toluene	11.784	98	2827228	47.18 ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.36%		
73) Bromofluorobenzene	14.334	95	1385488	56.12 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 112.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.598	62	13035	0.89 ug/L #	41
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.315	64	1260	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.672	96	1024	N.D.	
10) Trichlorotrifluoroethane	6.555	151	26642	3.79 ug/L #	93
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	7.230	41	1618	N.D.	
15) Acetone	7.430	43	18499	6.48 ug/L	91
16) Methylene Chloride	7.324	84	1340	N.D.	
17) Methyl Acetate	7.495	43	1407	N.D.	
18) t-1,2-Dichloroethene	7.559	96	9227	0.76 ug/L #	81
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.634	43	1344	N.D.	
26) c-1,2-Dichloroethene	8.958	96	528355	41.08 ug/L	85
27) 2,2-Dichloropropane	8.946	77	1308	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.116	56	1346	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	665182	53.06 ug/L #	91
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	9.821	41	1316	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.357	117	3282	N.D.	
41) Benzene	9.874	78	9809	N.D.	
42) 1,2-Dichloroethane	10.086	62	1019	N.D.	
43) Trichloroethene	10.462	130	156571	13.98 ug/L #	92
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	11.490	63	1369	N.D.	
51) C-1,3-Dichloropropene	11.543	75	1364	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4022.D
Acq On : 4 Feb 2021 5:59 pm
Operator : KKW
Sample : AE00180-16
Misc :
ALS Vial : 22 Sample Multiplier: 1

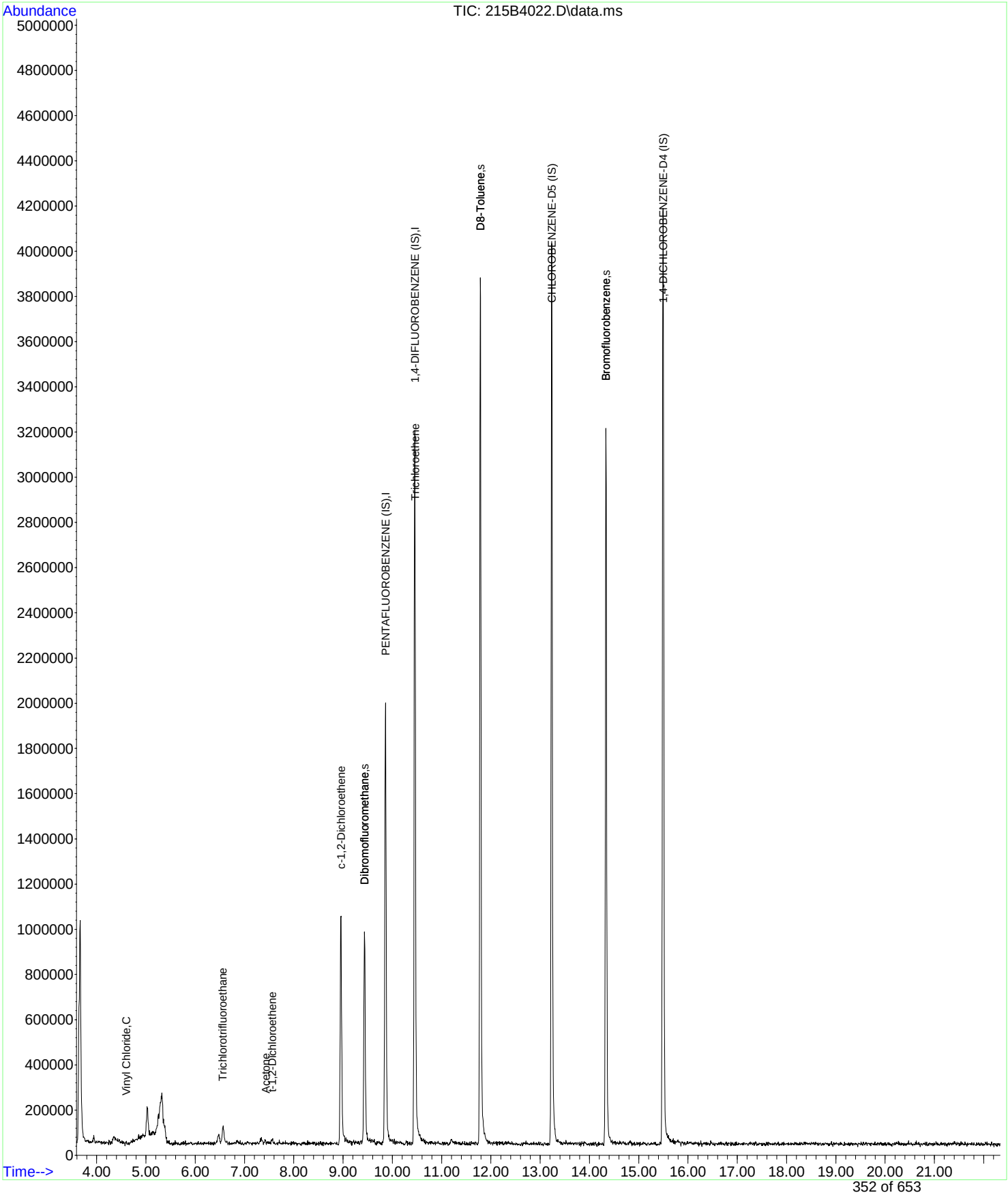
Quant Time: Feb 05 07:53:12 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2827228	47.18 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	2723	N.D.	
57) T-1,3-Dichloropropene	12.271	75	1311	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.730	43	1292	N.D.	
65) Ethylbenzene	13.353	106	1033	N.D.	
66) Chlorobenzene	13.358	112	2025	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.353	106	1033	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1385488	56.12 ug/L	85
75) n-Propylbenzene	14.328	91	3112	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.604	83	1186	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.340	156	1961	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.827	91	1132	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.491	146	3124	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	3124	N.D.	
90) n-Butylbenzene	15.532	91	1472	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4022.D
Acq On : 4 Feb 2021 5:59 pm
Operator : KKW
Sample : AE00180-16
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Feb 05 07:53:12 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4023.D
Acq On : 4 Feb 2021 6:29 pm
Operator : KKW
Sample : 1B04020-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1224240	50.00	ug/L		# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2429321	50.00	ug/L		-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1479376	50.00	ug/L		#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1463989	50.00	ug/L		# 0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.433	113	688768	54.55	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.10%				
52) D8-Toluene	11.784	98	2875704	47.92	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.84%				
73) Bromofluorobenzene	14.334	95	1450226	54.89	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.78%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	311443	19.71	ug/L		97
3) Chloromethane	4.404	50	190552	10.47	ug/L		91
4) Vinyl Chloride	4.592	62	269048	18.21	ug/L		99
5) Bromomethane	5.238	94	50572	13.10	ug/L		93
6) Chloroethane	5.444	64	150067	23.09	ug/L		96
7) Trichlorofluoromethane	5.708	101	400872	21.81	ug/L		99
8) Diethyl ether	6.184	59	143416	14.03	ug/L		88
9) 1,1-Dichloroethene	6.537	96	225701	21.35	ug/L	#	77
10) Trichlorotrifluoroethane	6.554	151	163524	23.10	ug/L		96
11) Acrolein	7.024	56	100940	47.48	ug/L		94
12) Iodomethane	6.784	142	152992	13.50	ug/L	#	89
13) Carbon Disulfide	6.631	76	637838	18.42	ug/L	#	95
14) 3-chloropropene	7.201	41	248743	11.91	ug/L	#	65
15) Acetone	7.406	43	198391	68.98	ug/L		94
16) Methylene Chloride	7.342	84	247416	19.31	ug/L	#	73
17) Methyl Acetate	7.536	43	87522	9.74	ug/L	#	83
18) t-1,2-Dichloroethene	7.553	96	254021	20.77	ug/L	#	79
19) Methyl tert-butyl ether	7.641	73	585822	18.93	ug/L		92
20) Acetonitrile	8.041	41	194204	83.29	ug/L	#	87
21) Isopropyl ether	8.064	45	551451	13.42	ug/L	#	82
22) Chloroprene	8.282	88	221176	18.88	ug/L		88
23) 1,1-Dichloroethane	8.317	63	449190	17.86	ug/L		99
24) Acrylonitrile	8.399	53	67141	17.67	ug/L	#	75
25) Vinyl Acetate	8.558	43	224843	8.72	ug/L	#	90
26) c-1,2-Dichloroethene	8.958	96	1356931	104.75	ug/L		85
27) 2,2-Dichloropropane	9.075	77	386951	18.21	ug/L	#	80
28) Bromochloromethane	9.187	128	122304	26.73	ug/L		100
29) Cyclohexane	9.198	56	409958	14.98	ug/L	#	80
30) Chloroform	9.222	83	493655	20.55	ug/L		96
32) Dibromofluoromethane	9.433	113	693267	54.91	ug/L	#	93
33) 2-Butanone	9.557	72	115218	83.77	ug/L	#	50
34) 1,1,1-Trichloroethane	9.486	97	415594	20.96	ug/L		99
35) 1,1-Dichloropropene	9.610	75	392720	19.46	ug/L		89
36) Propionitrile	9.915	54	32902	19.11	ug/L	#	1
37) Methacrylonitrile	9.921	41	165414	19.46	ug/L		89
38) Isobutyl Alcohol	9.909	43	181805	176.80	ug/L	#	34
40) Carbon Tetrachloride	9.416	117	307896	16.92	ug/L		94
41) Benzene	9.886	78	1088895	19.61	ug/L		94
42) 1,2-Dichloroethane	10.097	62	338081	16.69	ug/L	#	92
43) Trichloroethene	10.456	130	529288	47.19	ug/L	#	84
44) Methyl cyclohexane	10.456	83	515643	18.50	ug/L	#	81
45) Dibromomethane	10.908	93	143384	18.17	ug/L		95
46) 1,2-Dichloropropane	10.991	63	233248	14.99	ug/L		93
47) Bromodichloromethane	11.026	83	330302	19.37	ug/L		94
48) Methyl Methacrylate	11.085	69	139536	13.53	ug/L	#	78
49) 1,4-Dioxane	11.202	88	48420	343.82	ug/L		87
50) 2-Chloroethyl vinyl ether	11.531	63	1121	N.D.			
51) C-1,3-Dichloropropene	11.613	75	363123	15.84	ug/L	#	93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4023.D
Acq On : 4 Feb 2021 6:29 pm
Operator : KKW
Sample : 1B04020-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

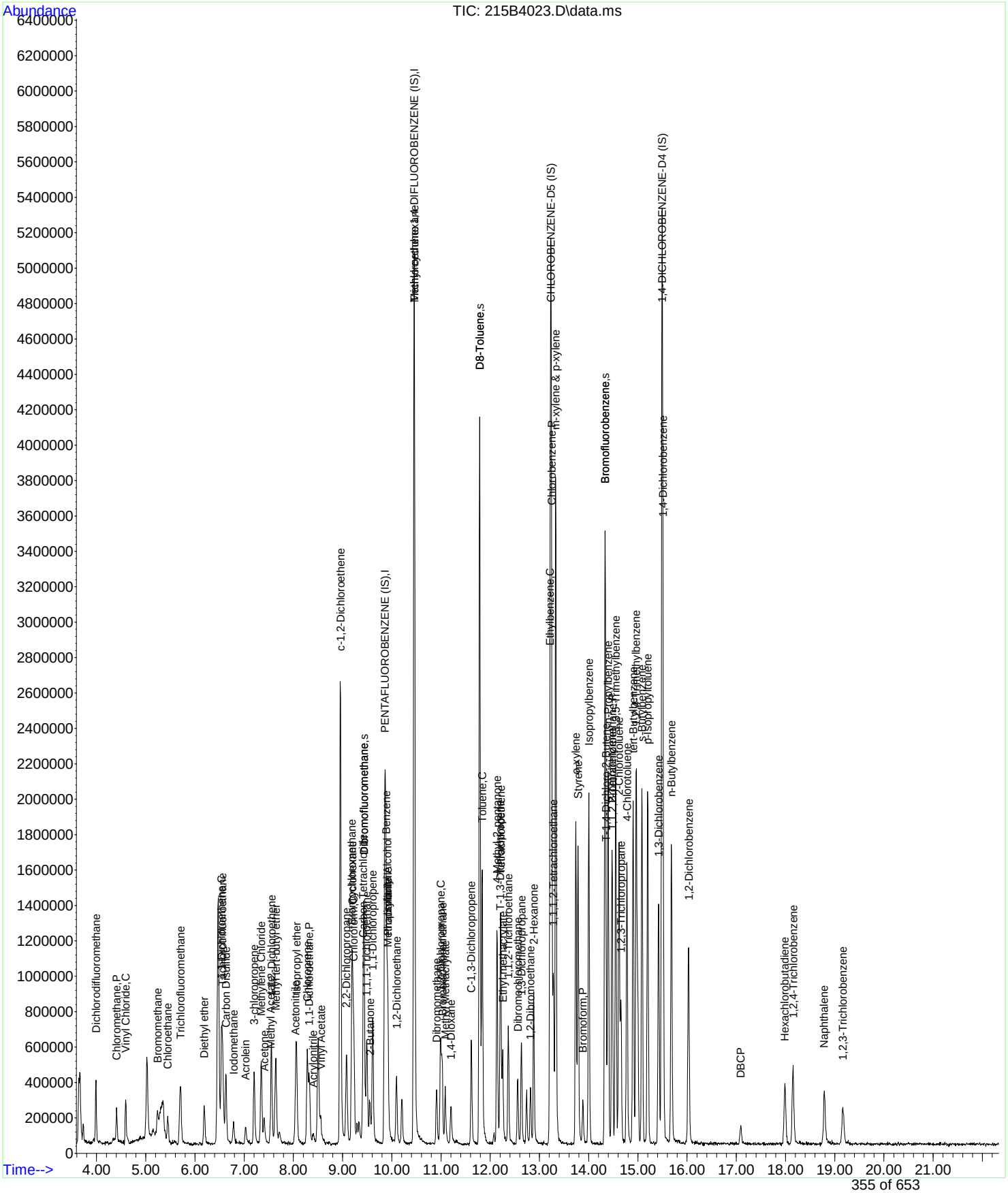
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	2875704	47.92	ug/L		93
54) 4-Methyl-2-pentanone	12.136	100	164750	99.96	ug/L	#	60
56) Toluene	11.837	92	713690	22.61	ug/L	#	96
57) T-1,3-Dichloropropene	12.201	75	347570	18.50	ug/L		91
58) Tetrachloroethene	12.213	164	185260	21.33	ug/L		94
59) Ethyl methacrylate	12.254	69	276350	16.45	ug/L	#	92
60) 1,1,2-Trichloroethane	12.365	97	221138	20.73	ug/L		96
61) Dibromochloromethane	12.559	129	214240	23.49	ug/L	#	96
62) 1,3-Dichloropropane	12.636	76	383681	19.43	ug/L	#	83
63) 1,2-Dibromoethane	12.818	107	226984	22.87	ug/L		93
64) 2-Hexanone	12.882	43	511753	70.40	ug/L	#	92
65) Ethylbenzene	13.211	106	429106	22.37	ug/L		91
66) Chlorobenzene	13.247	112	800242	25.16	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.282	131	245428	25.79	ug/L		99
68) m-xylene & p-xylene	13.329	106	1143355	51.35	ug/L		85
69) o-xylene	13.740	106	570130	24.97	ug/L		83
70) Styrene	13.781	104	912077	24.46	ug/L	#	86
71) Bromoform	13.881	173	114669	22.33	ug/L		99
72) Isopropylbenzene	14.005	105	1471262	24.48	ug/L		97
74) Bromofluorobenzene	14.334	95	1450226	54.89	ug/L		84
75) n-Propylbenzene	14.392	91	1887686	23.49	ug/L	#	94
76) 1,1,2,2-Tetrachloroethane	14.481	83	335700	22.52	ug/L		98
77) 1,2,3-Trichloropropane	14.657	61	95278m	17.48	ug/L		
78) T-1,4-Dichloro-2-Butene	14.351	53	94469	16.06	ug/L	#	61
80) Bromobenzene	14.475	156	319508	21.67	ug/L	#	79
81) 1,2,4-Trimethylbenzene	14.962	105	1396451	20.37	ug/L		94
82) 2-Chlorotoluene	14.616	91	1128535	19.59	ug/L		93
83) 4-Chlorotoluene	14.780	91	1152457	19.16	ug/L	#	91
84) tert-Butylbenzene	14.904	119	1117567	21.46	ug/L		88
85) 1,3,5-Trimethylbenzene	14.551	105	1364214	20.55	ug/L		95
86) p-Isopropyltoluene	15.197	119	1385625	21.42	ug/L		92
87) s-Butylbenzene	15.080	105	1687486	21.66	ug/L		96
88) 1,3-Dichlorobenzene	15.421	146	657429	22.26	ug/L		92
89) 1,4-Dichlorobenzene	15.509	146	659409	20.83	ug/L		97
90) n-Butylbenzene	15.679	91	1230094	18.29	ug/L		94
91) 1,2-Dichlorobenzene	16.032	146	597157	21.42	ug/L	#	90
92) DBCP	17.089	157	36294	16.59	ug/L		99
93) Hexachlorobutadiene	17.982	225	79741	12.71	ug/L	#	88
94) 1,2,4-Trichlorobenzene	18.153	180	195465	14.22	ug/L		98
95) Naphthalene	18.782	128	423196	14.69	ug/L	#	91
96) 1,2,3-Trichlorobenzene	19.163	180	102284	12.98	ug/L		92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4023.D
Acq On : 4 Feb 2021 6:29 pm
Operator : KKW
Sample : 1B04020-MS1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4024.D
Acq On : 4 Feb 2021 6:59 pm
Operator : KKW
Sample : 1B04020-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1251293	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2574120	50.00	ug/L		-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1495094	50.00	ug/L	#	-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1484776	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	708896	54.93	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.86%				
52) D8-Toluene	11.784	98	3037081	47.77	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.54%				
73) Bromofluorobenzene	14.334	95	1482461	55.52	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 111.04%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	318592	19.72	ug/L		98
3) Chloromethane	4.410	50	235082	12.64	ug/L		94
4) Vinyl Chloride	4.592	62	283447	18.77	ug/L		96
5) Bromomethane	5.239	94	67236	16.77	ug/L		94
6) Chloroethane	5.444	64	149360	22.48	ug/L		93
7) Trichlorofluoromethane	5.709	101	395607	21.06	ug/L		97
8) Diethyl ether	6.190	59	169659	16.24	ug/L	#	89
9) 1,1-Dichloroethene	6.543	96	220806	20.44	ug/L	#	80
10) Trichlorotrifluoroethane	6.572	151	159454	22.04	ug/L		96
11) Acrolein	7.031	56	107169	49.33	ug/L		98
12) Iodomethane	6.784	142	208137	17.96	ug/L	#	84
13) Carbon Disulfide	6.631	76	663498	18.75	ug/L	#	95
14) 3-chloropropene	7.207	41	274582	12.86	ug/L	#	77
15) Acetone	7.401	43	207102	70.45	ug/L		96
16) Methylene Chloride	7.348	84	249979	19.08	ug/L	#	73
17) Methyl Acetate	7.530	43	82829	9.02	ug/L	#	83
18) t-1,2-Dichloroethene	7.553	96	253360	20.27	ug/L		85
19) Methyl tert-butyl ether	7.642	73	618936	19.56	ug/L	#	88
20) Acetonitrile	8.053	41	196081	82.28	ug/L	#	87
21) Isopropyl ether	8.059	45	578766	13.78	ug/L	#	82
22) Chloroprene	8.282	88	236709	19.77	ug/L		92
23) 1,1-Dichloroethane	8.329	63	451180	17.55	ug/L	#	96
24) Acrylonitrile	8.394	53	59131	15.23	ug/L	#	98
25) Vinyl Acetate	8.546	43	250698	9.52	ug/L	#	92
26) c-1,2-Dichloroethene	8.958	96	1401540	105.85	ug/L		85
27) 2,2-Dichloropropane	9.081	77	391854	18.04	ug/L	#	80
28) Bromochloromethane	9.193	128	118759	25.39	ug/L		92
29) Cyclohexane	9.193	56	412315	14.74	ug/L	#	79
30) Chloroform	9.228	83	485593	19.78	ug/L		98
32) Dibromofluoromethane	9.434	113	708896	54.93	ug/L	#	90
33) 2-Butanone	9.557	72	115361	82.08	ug/L	#	57
34) 1,1,1-Trichloroethane	9.492	97	429304	21.18	ug/L		95
35) 1,1-Dichloropropene	9.610	75	375644	18.21	ug/L		91
36) Propionitrile	9.904	54	31765	18.05	ug/L	#	18
37) Methacrylonitrile	9.910	41	174033	20.03	ug/L		86
38) Isobutyl Alcohol	9.904	43	180711	171.94	ug/L	#	41
40) Carbon Tetrachloride	9.416	117	341579	17.71	ug/L		91
41) Benzene	9.880	78	1100832	18.71	ug/L		93
42) 1,2-Dichloroethane	10.092	62	333956	15.56	ug/L	#	92
43) Trichloroethene	10.456	130	538603	45.32	ug/L	#	83
44) Methyl cyclohexane	10.456	83	563337	19.08	ug/L	#	84
45) Dibromomethane	10.903	93	142225	17.01	ug/L		94
46) 1,2-Dichloropropane	10.991	63	246405	14.94	ug/L	#	90
47) Bromodichloromethane	11.020	83	320037	17.77	ug/L		98
48) Methyl Methacrylate	11.085	69	141773	12.97	ug/L		86
49) 1,4-Dioxane	11.208	88	48835	327.26	ug/L	#	76
50) 2-Chloroethyl vinyl ether	11.608	63	1637	N.D.			
51) C-1,3-Dichloropropene	11.614	75	375219	15.46	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4024.D
Acq On : 4 Feb 2021 6:59 pm
Operator : KKW
Sample : 1B04020-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

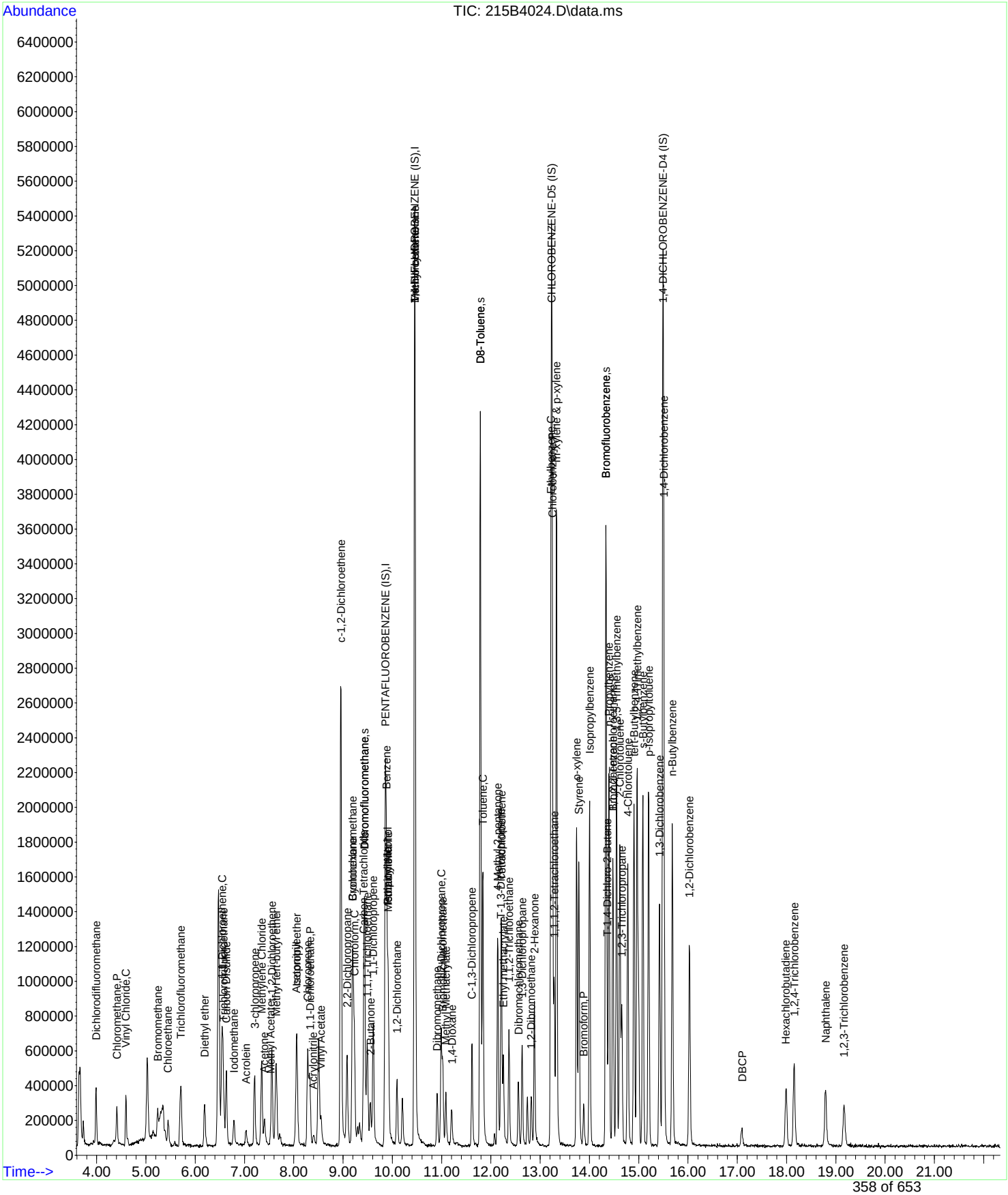
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3037081	47.77 ug/L #	94
54) 4-Methyl-2-pentanone	12.136	100	170860	97.83 ug/L #	62
56) Toluene	11.837	92	725315	22.74 ug/L	97
57) T-1,3-Dichloropropene	12.201	75	378370	19.93 ug/L	93
58) Tetrachloroethene	12.213	164	193069	22.00 ug/L	99
59) Ethyl methacrylate	12.248	69	284110	16.73 ug/L #	92
60) 1,1,2-Trichloroethane	12.366	97	233066	21.62 ug/L	92
61) Dibromochloromethane	12.559	129	220858	23.93 ug/L #	97
62) 1,3-Dichloropropane	12.636	76	388853	19.48 ug/L #	82
63) 1,2-Dibromoethane	12.818	107	223227	22.25 ug/L	93
64) 2-Hexanone	12.883	43	517712	70.47 ug/L #	92
65) Ethylbenzene	13.218	106	442983	22.85 ug/L #	87
66) Chlorobenzene	13.247	112	813299	25.31 ug/L	100
67) 1,1,1,2-Tetrachloroethane	13.288	131	248803	25.87 ug/L	97
68) m-xylene & p-xylene	13.329	106	1155858	51.36 ug/L	86
69) o-xylene	13.740	106	557961	24.18 ug/L	87
70) Styrene	13.782	104	919042	24.39 ug/L #	85
71) Bromoform	13.881	173	110492	21.38 ug/L	95
72) Isopropylbenzene	14.005	105	1491678	24.56 ug/L #	94
74) Bromofluorobenzene	14.334	95	1482461	55.52 ug/L	86
75) n-Propylbenzene	14.393	91	1913065	23.56 ug/L	93
76) 1,1,2,2-Tetrachloroethane	14.475	83	311992	20.71 ug/L #	95
77) 1,2,3-Trichloropropane	14.657	61	93462m	16.97 ug/L	
78) T-1,4-Dichloro-2-Butene	14.357	53	88319	14.85 ug/L #	49
80) Bromobenzene	14.475	156	309420	20.70 ug/L #	79
81) 1,2,4-Trimethylbenzene	14.968	105	1385938	19.94 ug/L	93
82) 2-Chlorotoluene	14.616	91	1136852	19.46 ug/L	92
83) 4-Chlorotoluene	14.780	91	1187005	19.46 ug/L	94
84) tert-Butylbenzene	14.904	119	1159537	21.96 ug/L	88
85) 1,3,5-Trimethylbenzene	14.551	105	1384794	20.56 ug/L	95
86) p-Isopropyltoluene	15.203	119	1444538	22.02 ug/L	91
87) s-Butylbenzene	15.086	105	1693795	21.44 ug/L	98
88) 1,3-Dichlorobenzene	15.421	146	648908	21.67 ug/L	95
89) 1,4-Dichlorobenzene	15.509	146	668415	20.82 ug/L	94
90) n-Butylbenzene	15.679	91	1308317	19.18 ug/L	94
91) 1,2-Dichlorobenzene	16.026	146	602643	21.32 ug/L	92
92) DBCP	17.101	157	39768	17.89 ug/L	100
93) Hexachlorobutadiene	17.983	225	75324	11.86 ug/L	90
94) 1,2,4-Trichlorobenzene	18.153	180	206347	14.79 ug/L	95
95) Naphthalene	18.793	128	476903	16.29 ug/L #	91
96) 1,2,3-Trichlorobenzene	19.164	180	128012	15.93 ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4024.D
Acq On : 4 Feb 2021 6:59 pm
Operator : KKW
Sample : 1B04020-MSD1
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Feb 05 07:53:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA64821

Instrument: OVGCMS5

Calibration ID: 2011113

Printed: 2/5/2021 8:55:14AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA64821-CCV1	QC		1	25	A1A1253	A0H0536		
1B04041-BS1	QC		2	26		A0H0536		
AA64821-CRL1	QC		3	27	A1A1254	A0H0536		
1B04041-BLK1	QC		4	29		A0H0536		
1B04041-MS1	QC		5	30		A0H0536		
AE00592-01	60D TCL SOM01.2 CLP-LIK	D	6	31		A0H0536		BatchQC
AE00592-01	8260D Arom	D	7			A0H0536		hist 1x kg 02/3/21
AE00592-02	8260D Arom	C	8	33		A0H0536		hist nd kg 2/3/21
AE00592-03	8260D Arom	C	9	34		A0H0536		hist nd kg 2/3/21
AE00180-17	60D TCL SOM01.2 CLP-LIK	B	10	335		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-18	60D TCL SOM01.2 CLP-LIK	B	11	336		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-19	60D TCL SOM01.2 CLP-LIK	B	12	337		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-20	60D TCL SOM01.2 CLP-LIK	B	13	338		A0H0536	Tetra Tech NUS, Inc. (TE015)	run25x nc2/4/21 RUSH. MUST MEET
AE00180-21	60D TCL SOM01.2 CLP-LIK	B	14	339		A0H0536	Tetra Tech NUS, Inc. (TE015)	run1x nc2/4/21 RUSH. MUST MEET
AE00180-22	60D TCL SOM01.2 CLP-LIK	B	15	340		A0H0536	Tetra Tech NUS, Inc. (TE015)	run5x nc2/4/21 RUSH. MUST MEET
AE00180-23	60D TCL SOM01.2 CLP-LIK	B	16	341		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AE00180-24	60D TCL SOM01.2 CLP-LIK	B	17	342		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AE00180-25	60D TCL SOM01.2 CLP-LIK	B	18	343		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AE00180-26	60D TCL SOM01.2 CLP-LIK	B	19	44		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AE00180-27	60D TCL SOM01.2 CLP-LIK	B	20	485		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AE00180-28	60D TCL SOM01.2 CLP-LIK	B	21	486		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AE00180-29	60D TCL SOM01.2 CLP-LIK	B	22	487		A0H0536	Tetra Tech NUS, Inc. (TE015)	need screen RUSH. MUST MEET TAT
AA64821-CCV2	QC		23	2	A1A1253	A0H0536		

Samples Loaded By — Date 02/05/21

Data Processed By — Date 02/05/21

ANALYSIS SEQUENCE

AA64821

Instrument: OVGCMS5

Calibration ID: 2011113

Printed: 2/5/2021 8:55:14AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
1B04041-MSD1	QC		24	3		A0H0536		

Samples Loaded By — Date 2/05/21

Data Processed By — Date 2/05/21

PREPARATION BENCH SHEET

Printed: 2/4/2021 1:19:08PM

1B04041

ENCO Orlando

Analysis
8260D Arom [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
___ A0F0992 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution
A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1B04041-BLK1		Blank		QC			5	5			5	
1B04041-BS1		LCS		QC			5	5	A1A1251 A1A0898	2 2	5	
1B04041-MS1		Matrix Spike [AE00592-01]	E	QC	<2	N	5	5	A1A1251 A1A0898	2 2	5	
1B04041-MSD1		Matrix Spike Dup [AE00592-01]	C	QC	<2	N	5	5	A1A1251 A1A0898	2 2	5	
AE00180-17	C	HMPN-MW0024-060.0-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-18	C	HMPN-MW0035-035.0-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-19	C	HMPN-MW0034-015.0-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-20	C	HMPN-MW0039-035.0-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run25x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-21	C	HMPN-MW0040-042.5-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-22	C	HMPN-MW0009-010.0-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run5x nc2/4/21 RUSH. MUST MEET TAT KD 2/1/21
AE00180-23	C	HMPN-MW0004-010.0-202101B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-24	C	HMPN-MW0027-042.5-202102B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-25	C	HMPN-MW0028-047.5-202102B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-26	C	HMPN-MW0016-010.0-202102B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-27	C	HMPN-MW0045-030.0-202102B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00180-28	C	HMPN-MW0002-035.0-202102B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21

PREPARATION BENCH SHEET

Printed: 2/4/2021 1:19:08PM

1B04041

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

___ A0F0992 8260 surr working (lower conc.)

Spiking Solution

A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE00180-29	C	HMPN-DRUM222803-20210208 B[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	need screen RUSH. MUST MEET TAT KD 2/1/21
AE00592-01		DGRS Influent D[MS37	09-Feb-21	8260D Arom	<2	N	5	5			5	hist 1x kg 02/3/21
AE00592-01		DGRS Influent D[MS37		8260D TCL SOM01.2 CLP-LIKE			5	5			5	Added for BatchQC in: 1B04041
AE00592-02		Post Airstripper C[MS37	09-Feb-21	8260D Arom	<2	N	5	5			5	hist nd kg 2/3/21
AE00592-03		DGRS Effluent C[MS37	09-Feb-21	8260D Arom	<2	N	5	5			5	hist nd kg 2/3/21

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5
EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 02/04/21

StopDate 02/05/21

Instrument ID OVGcms.5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A0B1371	Residual Chlorine Strips (Potassium Iodide S	102916
A1B0635	P&T Anti-Foam working solution	N/A

02/05/21

Samples Prepared By Date

Samples Prepared By Date

Sequence Name: C:\msdchem\1\sequence\215B4.s
Comment:
Operator: KKW
Data Path: C:\msdchem\1\DATA\020421\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample Name/Misc Info
1) Sample	1	215B4001 8260S rinse
2) Sample	2	215B4002 8260S CCV1
3) Sample	3	215B4003 8260S BS1
4) Sample	4	215B4004 8260S RINSE
5) Sample	5	215B4005 8260S BLK1
6) Sample	6	215B4006 8260S CRL1
7) Sample	7	215B4007 8260S AE00180-01
8) Sample	8	215B4008 8260S AE00180-02@500X
9) Sample	9	215B4009 8260S AE00180-03@2X
10) Sample	10	215B4010 8260S AE00180-04@50X
11) Sample	11	215B4011 8260S AE00180-05
12) Sample	12	215B4012 8260S AE00180-06
13) Sample	13	215B4013 8260S AE00180-07
14) Sample	14	215B4014 8260S AE00180-08
15) Sample	15	215B4015 8260S AE00180-09
16) Sample	16	215B4016 8260S AE00180-10
17) Sample	17	215B4017 8260S AE00180-11
18) Sample	18	215B4018 8260S AE00180-12@2.5X
19) Sample	19	215B4019 8260S AE00180-13@10X
20) Sample	20	215B4020 8260S AE00180-14@100X
21) Sample	21	215B4021 8260S AE00180-15@500X
22) Sample	22	215B4022 8260S AE00180-16
23) Sample	23	215B4023 8260S 1B04020-MS1
24) Sample	23	215B4024 8260S 1B04020-MSD1
25) Sample	24	215B4025 8260S RINSE
26) Sample	25	215B4026 8260S AA64821-CCV1 ↓ rc
27) Sample	26	215B4027 8260S 1B04041-BS1 ✓
28) Sample	27	215B4028 8260S ~~1B04041-MS1~~ CRL
29) Sample	27	215B4029 8260S ~~1B04041-MSD1~~ CRL
30) Sample	28	215B4030 8260S RINSE
31) Sample	29	215B4031 8260S 1B04041-BLK1 ✓ w odesh.
32) Sample	30	215B4032 8260S ~~AA64821-CRL1~~ ms ✓
33) Sample	31	215B4033 8260S AE00592-01 ✓
34) Sample	32	215B4034 8260S AE00592-02 ✓
35) Sample	33	215B4035 8260S AE00592-03 ✓
36) Sample	34	215B4036 8260S AE00180-17 ✓
37) Sample	35	215B4037 8260S AE00180-18 ✓ rr 5X CB
38) Sample	36	215B4038 8260S AE00180-19 ✓ rr 1x rc ↓ ccv
39) Sample	37	215B4039 8260S AE00180-20@25X ✓ rr 25x rc ↓ ccv
40) Sample	38	215B4040 8260S AE00180-21 ✓ rr 1x rc ↓ ccv
41) Sample	39	215B4041 8260S AE00180-22@5X ✓ rr 5x rc ↓ ccv
42) Sample	40	215B4042 8260S AE00180-23 ✓
43) Sample	41	215B4043 8260S AE00180-24@500X ✓ rr 2000x TCR

Sequence Name: C:\msdchem\1\sequence\215B4.s

Line	Type	Vial	DataFile	Method	Sample Name
44)	Sample	42	215B4044	8260S	AE00180-25@1000X ✓ rr 10000x Freon & TCE
45)	Sample	43	215B4045	8260S	AE00180-26@10X ✓ rr 1x overdilute
46)	Sample	44	215B4046	8260S	AE00180-27@5X ✓ rr 1x overdilute
47)	Sample	45	215B4047	8260S	AE00180-28@50X ✓ rr 10x overdilute
48)	Sample	46	215B4048	8260S	AE00180-29@50 ✓ rr 50x VC

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ ~~Orlando~~

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

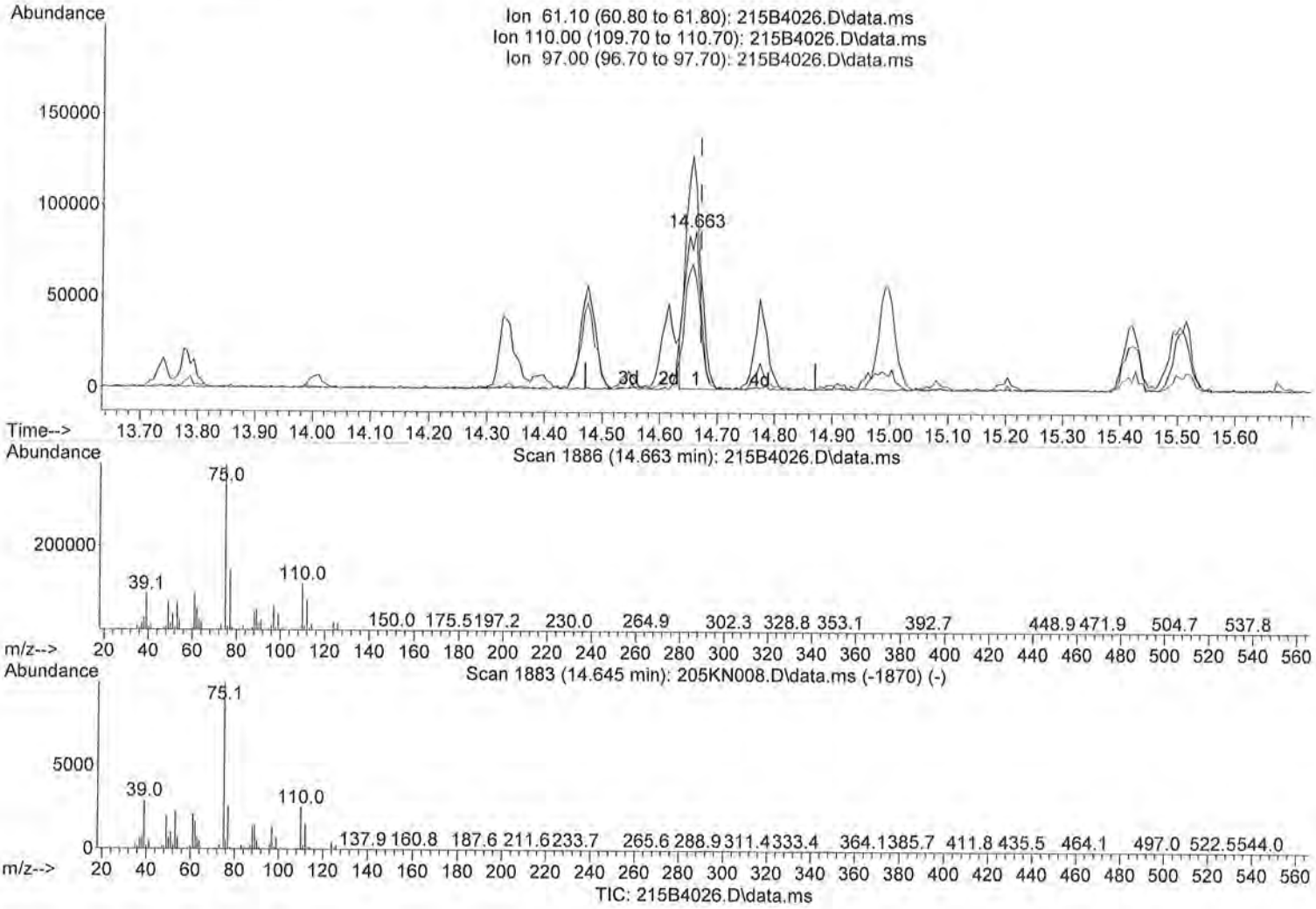
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

Instrument ID:	OVGCMS-5
Sequence/Batch ID:	AA64821/180404
Data File Prefix:	215B4
Date and Time Range of MIs:	0205h1 0814 1017
Reviewer Print Name:	Karie Gonzalez
Reviewer Signature:	Karie Gonzalez
Date of Review:	2/5/21

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4026.D
Acq On : 4 Feb 2021 7:58 pm
Operator : KKW
Sample : AA64821-CCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Feb 05 07:53:26 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.663min (-0.008) 27.16 ug/L

response 164010

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	150.26#
97.00	49.10	88.91#
0.00	0.00	0.00

Select One:

~~X~~ Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date W 02/05/21

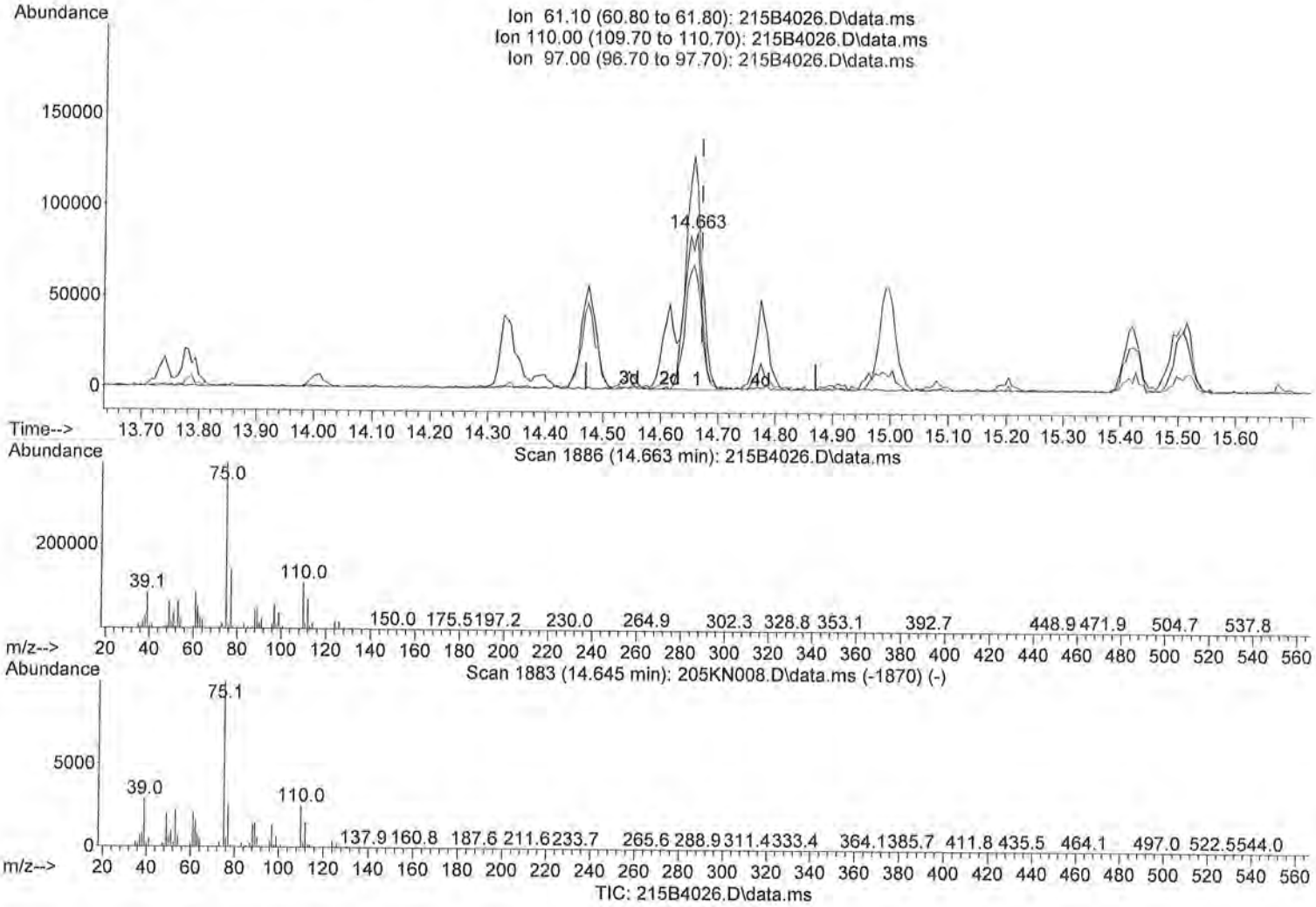
Review by/Date:

111920W.M Fri Feb 05 08:11:10 2021 Page: 1

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4026.D
Acq On : 4 Feb 2021 7:58 pm
Operator : KKW
Sample : AA64821-CCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Feb 05 07:53:26 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.663min (-0.008) 40.65 ug/L m

response 245520

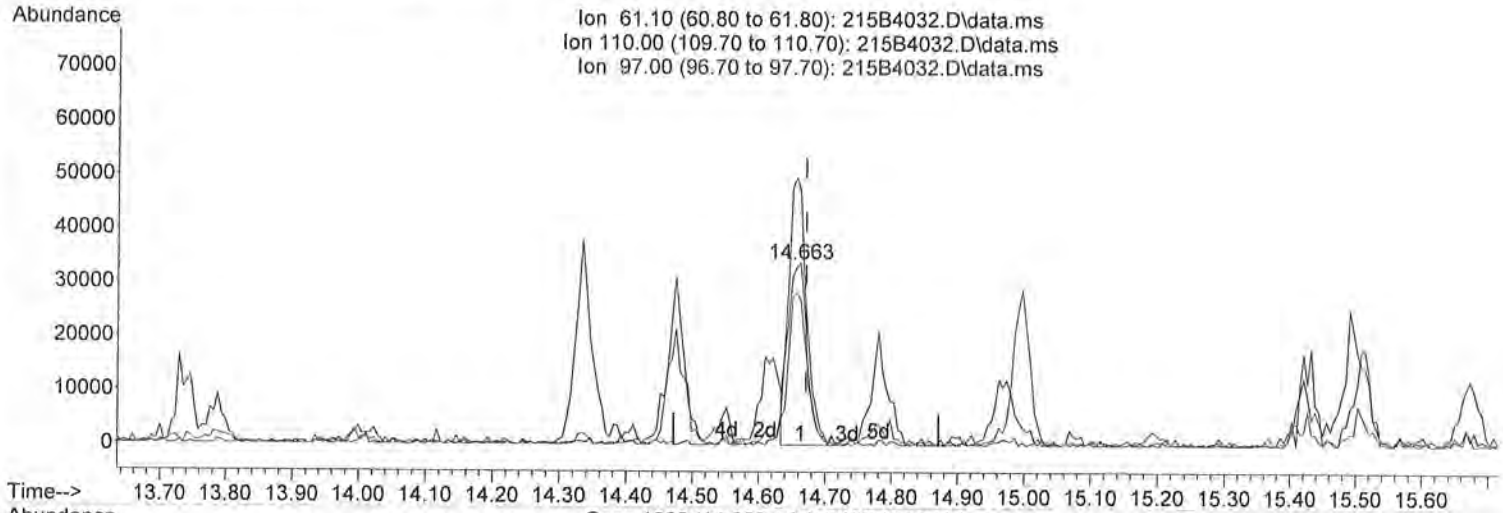
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	100.37#
97.00	49.10	59.39#
0.00	0.00	0.00

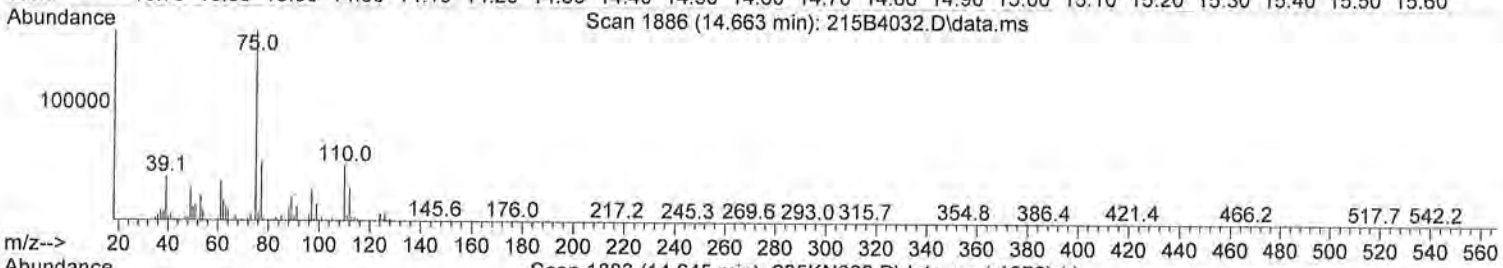
Select One:
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 02/05/21
Review by/Date:

Quantitation Report (Qedit)

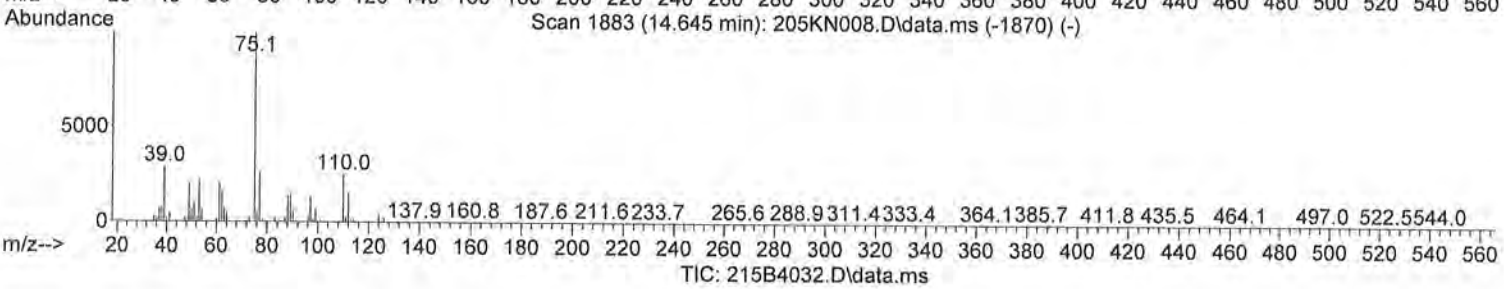
Data Path : C:\msdchem\1\data\020421\
Data File : 215B4032.D
Acq On : 4 Feb 2021 10:56 pm
Operator : KKW
Sample : 1B04041-MS1
Misc :
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Feb 05 07:53:48 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration





Scan 1886 (14.663 min): 215B4032.D\data.ms



Scan 1883 (14.645 min): 205KN008.D\data.ms (-1870) (-)

TIC: 215B4032.D\data.ms

(77) 1,2,3-Trichloropropane

14.663min (-0.008) 11.92 ug/L

response 66648

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	144.69#
97.00	49.10	84.70#
0.00	0.00	0.00

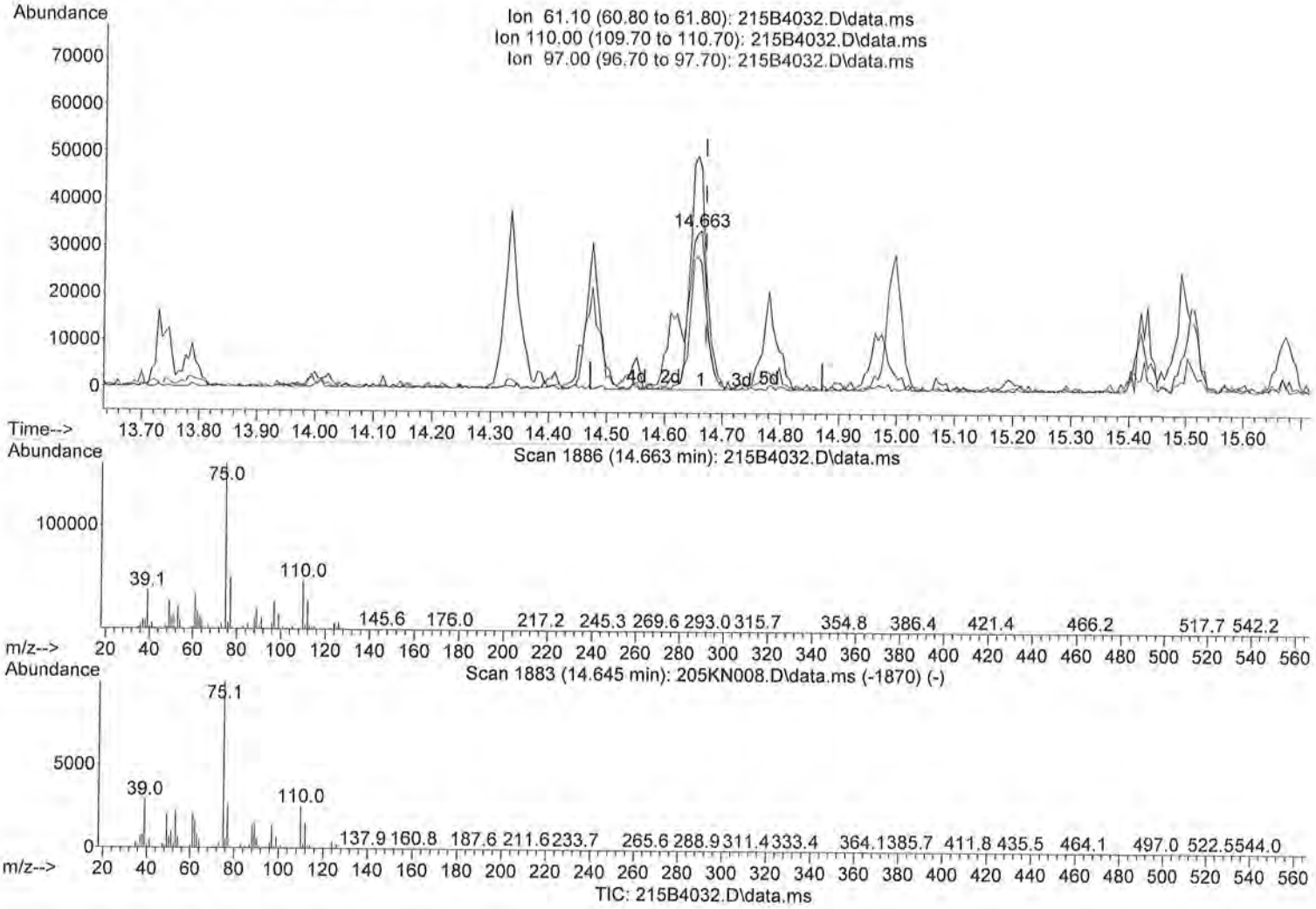
Select One:
[ ] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 2/05/21
Review by/Date:

111920W.M Fri Feb 05 08:19:29 2021 Page: 1

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4032.D
Acq On : 4 Feb 2021 10:56 pm
Operator : KKW
Sample : 1B04041-MS1
Misc :
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Feb 05 07:53:48 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.663min (-0.008) 17.79 ug/L m

response 99451

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	96.97
97.00	49.10	56.76
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

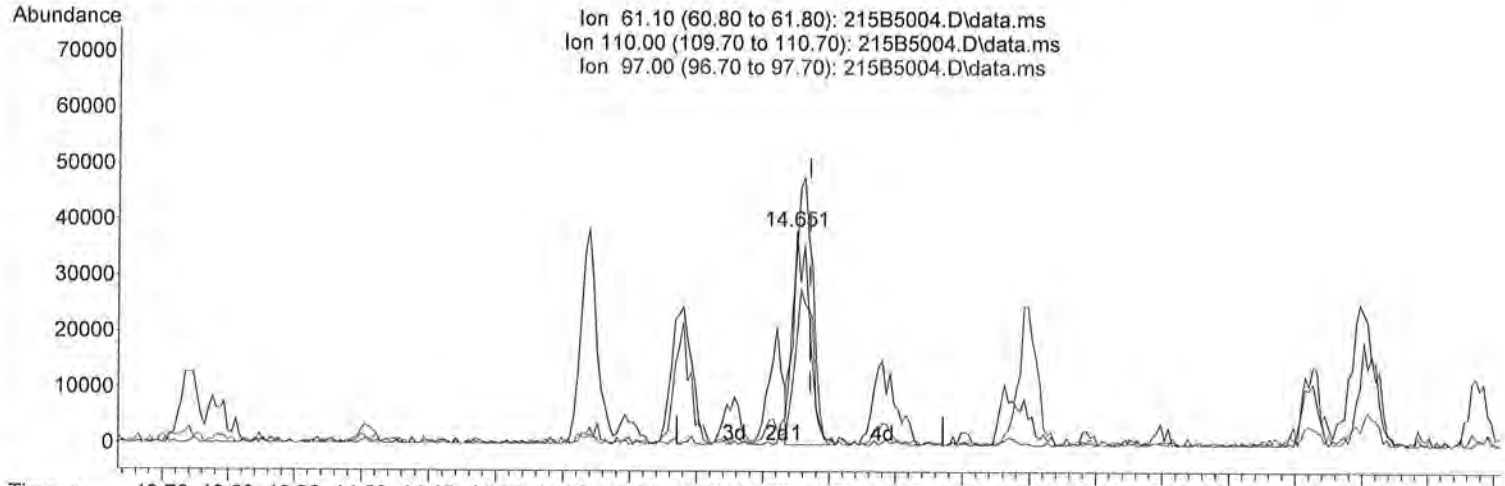
Review by/Date W 2/5/21

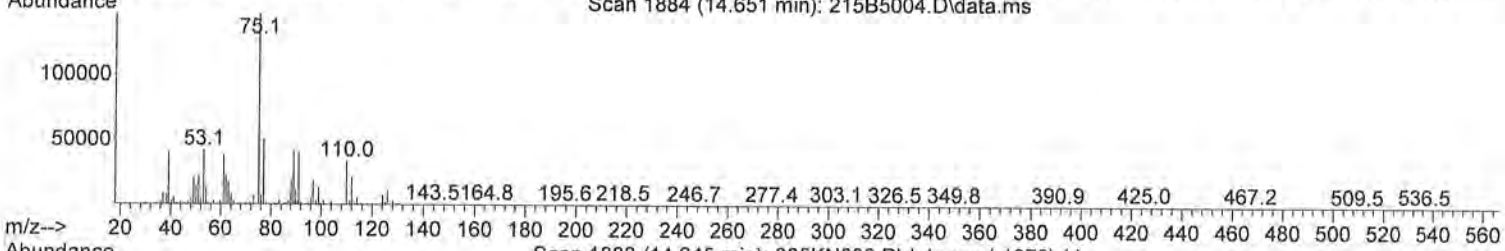
Review by/Date:

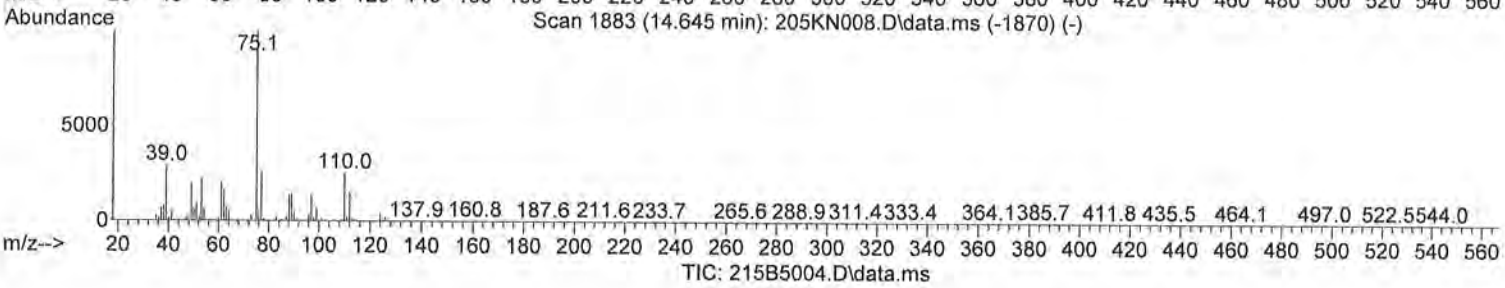
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5004.D
Acq On : 5 Feb 2021 9:25 am
Operator : KKW
Sample : 1B04041-MSD1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 10:16:57 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B5004.D\data.ms

(77) 1,2,3-Trichloropropane

14.651min (-0.020) 11.15 ug/L

response 68714

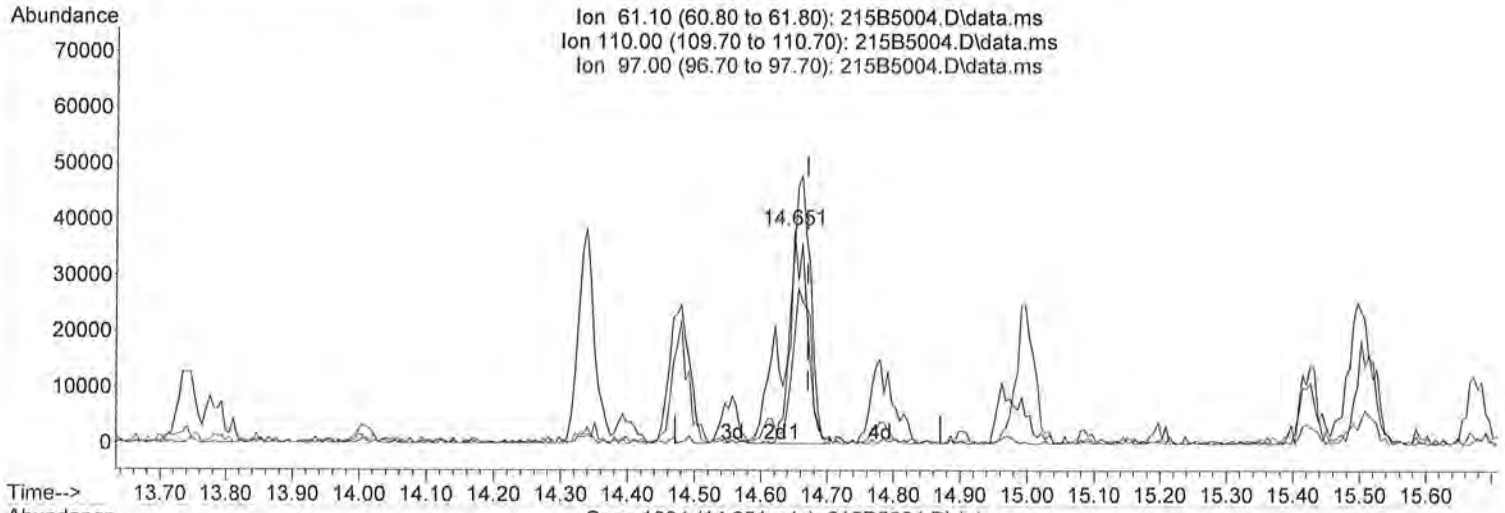
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	136.48#
97.00	49.10	72.45#
0.00	0.00	0.00

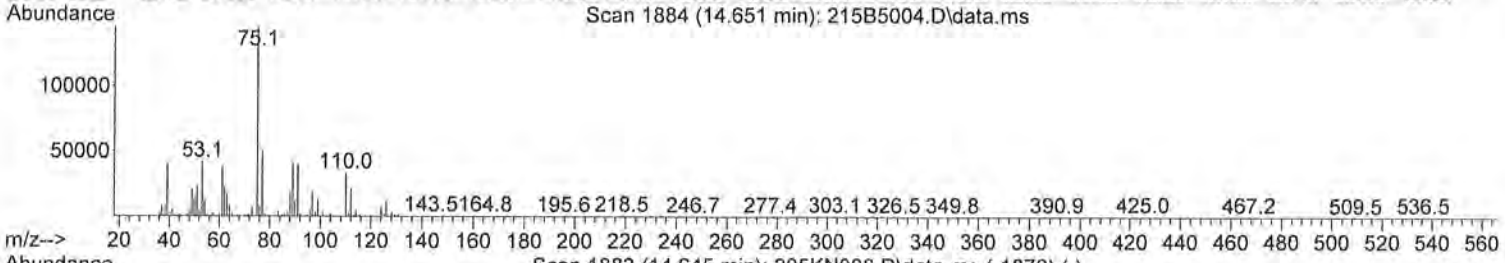
Select One:
[X] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date AO 02/05/21
Review by/Date:

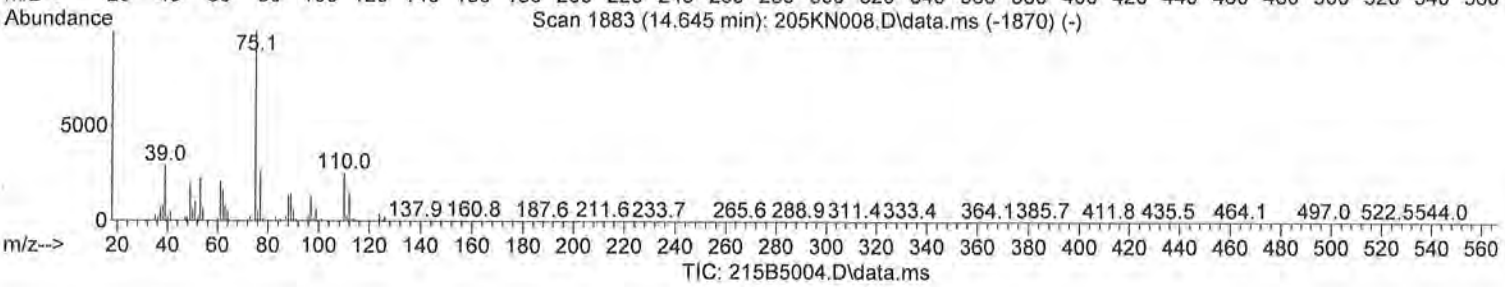
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5004.D
Acq On : 5 Feb 2021 9:25 am
Operator : KKW
Sample : 1B04041-MSD1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 10:16:57 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B5004.D\data.ms

(77) 1,2,3-Trichloropropane

14.651min (-0.020) 16.06 ug/L m

response 99010

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	94.72
97.00	49.10	50.28
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date W 02/05/21

Review by/Date:

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4026.D
Acq On : 4 Feb 2021 7:58 pm
Operator : KKW
Sample : AA64821-CCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Feb 05 07:53:26 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1293715	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2598501	50.00	ug/L		-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1639441	50.00	ug/L	#	-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1519108	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	705438	52.87	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.74%				
52) D8-Toluene	11.784	98	3135075	48.85	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 97.70%				
73) Bromofluorobenzene	14.334	95	1584470	54.12	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.24%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	298899	17.90	ug/L		96
3) Chloromethane	4.404	50	204089	10.62	ug/L		97
4) Vinyl Chloride	4.592	62	238409	15.27	ug/L		98
5) Bromomethane	5.233	94	117942	27.21	ug/L		97
6) Chloroethane	5.438	64	131081	19.09	ug/L		94
7) Trichlorofluoromethane	5.691	101	348613	17.95	ug/L		96
8) Diethyl ether	6.184	59	340820	31.56	ug/L		88
9) 1,1-Dichloroethene	6.537	96	493135	44.15	ug/L		81
10) Trichlorotrifluoroethane	6.566	151	334503	44.72	ug/L		92
11) Acrolein	7.025	56	668989	297.81	ug/L		100
12) Iodomethane	6.778	142	3209482	267.92	ug/L	#	89
13) Carbon Disulfide	6.625	76	8429541	230.40	ug/L		96
14) 3-chloropropene	7.201	41	696571	31.56	ug/L	#	75
15) Acetone	7.401	43	503400	165.62	ug/L		100
16) Methylene Chloride	7.348	84	542390	40.05	ug/L	#	72
17) Methyl Acetate	7.536	43	182544	19.22	ug/L	#	83
18) t-1,2-Dichloroethene	7.553	96	555946	43.02	ug/L		84
19) Methyl tert-butyl ether	7.636	73	1361312	41.62	ug/L	#	90
20) Acetonitrile	8.023	41	695180	282.13	ug/L		96
21) Isopropyl ether	8.053	45	1359884	31.32	ug/L	#	86
22) Chloroprene	8.282	88	598120	48.32	ug/L		87
23) 1,1-Dichloroethane	8.317	63	1002256	37.70	ug/L	#	99
24) Acrylonitrile	8.388	53	1385143	345.05	ug/L		97
25) Vinyl Acetate	8.546	43	3941823	144.73	ug/L	#	90
26) c-1,2-Dichloroethene	8.952	96	643122	46.98	ug/L		83
27) 2,2-Dichloropropane	9.075	77	865690	38.27	ug/L		96
28) Bromochloromethane	9.193	128	263310	54.46	ug/L		91
29) Cyclohexane	9.199	56	850489	29.41	ug/L	#	83
30) Chloroform	9.228	83	1143038	45.03	ug/L		97
32) Dibromofluoromethane	9.434	113	705438	52.87	ug/L	#	90
33) 2-Butanone	9.551	72	286771	194.66	ug/L	#	62
34) 1,1,1-Trichloroethane	9.492	97	949956	45.33	ug/L		97
35) 1,1-Dichloropropene	9.610	75	837846	39.29	ug/L	#	90
36) Propionitrile	9.904	54	660558	362.99	ug/L		95
37) Methacrylonitrile	9.915	41	3079956	342.80	ug/L	#	83
38) Isobutyl Alcohol	9.915	43	718926	661.60	ug/L		91
40) Carbon Tetrachloride	9.416	117	842212	43.26	ug/L	#	76
41) Benzene	9.880	78	2414469	40.64	ug/L		93
42) 1,2-Dichloroethane	10.092	62	817705	37.74	ug/L		92
43) Trichloroethene	10.456	130	599341	49.95	ug/L	#	86
44) Methyl cyclohexane	10.456	83	1096982	36.80	ug/L		86
45) Dibromomethane	10.908	93	353716	41.91	ug/L		96
46) 1,2-Dichloropropane	10.991	63	590407	34.23	ug/L		92
47) Bromodichloromethane	11.020	83	825715	42.99	ug/L		95
48) Methyl Methacrylate	11.085	69	370859	33.62	ug/L	#	85
49) 1,4-Dioxane	11.202	88	128696	854.34	ug/L	#	77
50) 2-Chloroethyl vinyl ether	11.525	63	1448	N.D.			
51) C-1,3-Dichloropropene	11.613	75	1000339	38.77	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4026.D
Acq On : 4 Feb 2021 7:58 pm
Operator : KKW
Sample : AA64821-CCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Feb 05 07:53:26 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

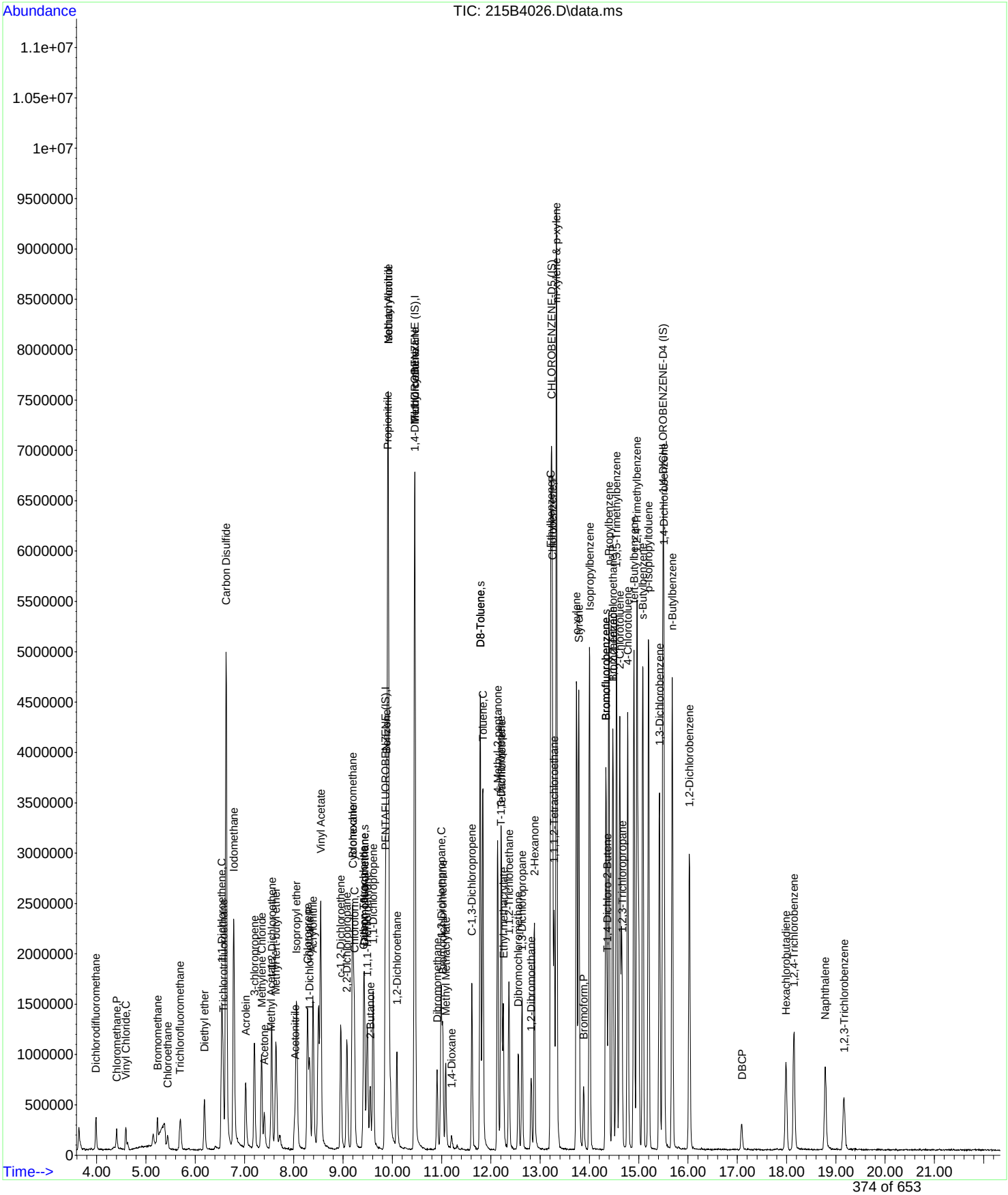
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3130237	48.77 ug/L	95
54) 4-Methyl-2-pentanone	12.136	100	410268	232.71 ug/L #	65
56) Toluene	11.837	92	1742187	49.80 ug/L #	95
57) T-1,3-Dichloropropene	12.201	75	921945	44.29 ug/L	92
58) Tetrachloroethene	12.213	164	445137	46.26 ug/L	98
59) Ethyl methacrylate	12.254	69	797643	42.84 ug/L #	93
60) 1,1,2-Trichloroethane	12.366	97	591358	50.03 ug/L	91
61) Dibromochloromethane	12.554	129	570273	52.29 ug/L #	96
62) 1,3-Dichloropropane	12.630	76	1011325	46.21 ug/L #	85
63) 1,2-Dibromoethane	12.818	107	545255	49.56 ug/L	89
64) 2-Hexanone	12.883	43	1338063	166.09 ug/L #	92
65) Ethylbenzene	13.212	106	1136560	53.46 ug/L #	85
66) Chlorobenzene	13.247	112	1987809	56.40 ug/L	100
67) 1,1,1,2-Tetrachloroethane	13.282	131	646289	61.29 ug/L	95
68) m-xylene & p-xylene	13.329	106	2812176	113.96 ug/L	87
69) o-xylene	13.735	106	1461969	57.77 ug/L	88
70) Styrene	13.782	104	2470670	59.79 ug/L #	86
71) Bromoform	13.881	173	300160	47.89 ug/L	99
72) Isopropylbenzene	14.005	105	3819444	57.34 ug/L	94
74) Bromofluorobenzene	14.334	95	1584470	54.12 ug/L #	82
75) n-Propylbenzene	14.393	91	4741241	53.25 ug/L	95
76) 1,1,2,2-Tetrachloroethane	14.475	83	820124	49.65 ug/L	97
77) 1,2,3-Trichloropropane	14.663	61	245520m	40.65 ug/L	
78) T-1,4-Dichloro-2-Butene	14.357	53	238358	36.56 ug/L	98
80) Bromobenzene	14.475	156	815981	53.34 ug/L #	78
81) 1,2,4-Trimethylbenzene	14.963	105	3620960	50.91 ug/L	95
82) 2-Chlorotoluene	14.616	91	2919592	48.84 ug/L	93
83) 4-Chlorotoluene	14.774	91	3061457	49.04 ug/L	94
84) tert-Butylbenzene	14.904	119	2839310	52.55 ug/L	90
85) 1,3,5-Trimethylbenzene	14.545	105	3455462	50.15 ug/L	94
86) p-Isopropyltoluene	15.198	119	3545976	52.84 ug/L	93
87) s-Butylbenzene	15.080	105	4239825	52.45 ug/L	97
88) 1,3-Dichlorobenzene	15.421	146	1678957	54.79 ug/L	94
89) 1,4-Dichlorobenzene	15.509	146	1726165	52.55 ug/L #	89
90) n-Butylbenzene	15.679	91	3282446	47.04 ug/L	95
91) 1,2-Dichlorobenzene	16.026	146	1511291	52.25 ug/L	94
92) DBCP	17.095	157	95871	40.73 ug/L	92
93) Hexachlorobutadiene	17.988	225	191461	28.42 ug/L #	89
94) 1,2,4-Trichlorobenzene	18.147	180	519345	35.81 ug/L	97
95) Naphthalene	18.782	128	1145959	37.49 ug/L #	91
96) 1,2,3-Trichlorobenzene	19.169	180	262692	31.05 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4026.D
Acq On : 4 Feb 2021 7:58 pm
Operator : KKW
Sample : AA64821-CCV1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Feb 05 07:53:26 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4027.D
Acq On : 4 Feb 2021 8:27 pm
Operator : KKW
Sample : 1B04041-BS1
Misc :
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Feb 05 07:53:31 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1351558	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2773360	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1610114	50.00	ug/L	#	-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1496937	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	739183	53.03	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.06%				
52) D8-Toluene	11.784	98	3249398	47.43	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.86%				
73) Bromofluorobenzene	14.334	95	1587282	55.20	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	287082	16.45	ug/L		100
3) Chloromethane	4.410	50	239223	11.91	ug/L		99
4) Vinyl Chloride	4.592	62	299232	18.35	ug/L		98
5) Bromomethane	5.232	94	47827	11.31	ug/L		97
6) Chloroethane	5.450	64	159256	22.20	ug/L		97
7) Trichlorofluoromethane	5.708	101	398966	19.66	ug/L		99
8) Diethyl ether	6.184	59	178358	15.81	ug/L		94
9) 1,1-Dichloroethene	6.537	96	234381	20.09	ug/L	#	76
10) Trichlorotrifluoroethane	6.566	151	159528	20.41	ug/L		94
11) Acrolein	7.025	56	130110	55.44	ug/L		97
12) Iodomethane	6.784	142	327643	26.18	ug/L	#	87
13) Carbon Disulfide	6.631	76	706818	18.49	ug/L	#	95
14) 3-chloropropene	7.201	41	312567	13.55	ug/L	#	85
15) Acetone	7.401	43	213942	67.37	ug/L		100
16) Methylene Chloride	7.348	84	268708	18.99	ug/L	#	70
17) Methyl Acetate	7.530	43	88330	8.90	ug/L	#	85
18) t-1,2-Dichloroethene	7.553	96	267359	19.80	ug/L		83
19) Methyl tert-butyl ether	7.641	73	630101	18.44	ug/L	#	90
20) Acetonitrile	8.047	41	218529	84.89	ug/L	#	88
21) Isopropyl ether	8.059	45	665446	14.67	ug/L	#	85
22) Chloroprene	8.282	88	255296	19.74	ug/L		84
23) 1,1-Dichloroethane	8.317	63	476765	17.17	ug/L		98
24) Acrylonitrile	8.405	53	74656	17.80	ug/L		97
25) Vinyl Acetate	8.552	43	276361	9.71	ug/L	#	88
26) c-1,2-Dichloroethene	8.952	96	302240	21.13	ug/L	#	82
27) 2,2-Dichloropropane	9.075	77	382941	16.34	ug/L		96
28) Bromochloromethane	9.193	128	124785	24.70	ug/L		99
29) Cyclohexane	9.198	56	439097	14.53	ug/L	#	85
30) Chloroform	9.228	83	517602	19.52	ug/L		97
32) Dibromofluoromethane	9.434	113	739183	53.03	ug/L	#	90
33) 2-Butanone	9.551	72	123732	81.51	ug/L	#	52
34) 1,1,1-Trichloroethane	9.492	97	428787	19.58	ug/L		99
35) 1,1-Dichloropropene	9.616	75	387622	17.40	ug/L		91
36) Propionitrile	9.909	54	33658	17.70	ug/L	#	16
37) Methacrylonitrile	9.915	41	202517	21.58	ug/L		87
38) Isobutyl Alcohol	9.904	43	198707	175.04	ug/L	#	43
40) Carbon Tetrachloride	9.422	117	329548	15.86	ug/L		99
41) Benzene	9.886	78	1192331	18.81	ug/L		92
42) 1,2-Dichloroethane	10.092	62	341175	14.75	ug/L		97
43) Trichloroethene	10.462	130	263392	20.57	ug/L	#	93
44) Methyl cyclohexane	10.462	83	559039	17.57	ug/L	#	87
45) Dibromomethane	10.908	93	145214	16.12	ug/L		95
46) 1,2-Dichloropropane	10.991	63	257131	14.49	ug/L		92
47) Bromodichloromethane	11.026	83	339549	17.51	ug/L		95
48) Methyl Methacrylate	11.085	69	141508	12.02	ug/L	#	87
49) 1,4-Dioxane	11.202	88	47083	292.85	ug/L		95
50) 2-Chloroethyl vinyl ether	11.502	63	1135	N.D.			
51) C-1,3-Dichloropropene	11.619	75	421572	16.10	ug/L		89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4027.D
Acq On : 4 Feb 2021 8:27 pm
Operator : KKW
Sample : 1B04041-BS1
Misc :
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Feb 05 07:53:31 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

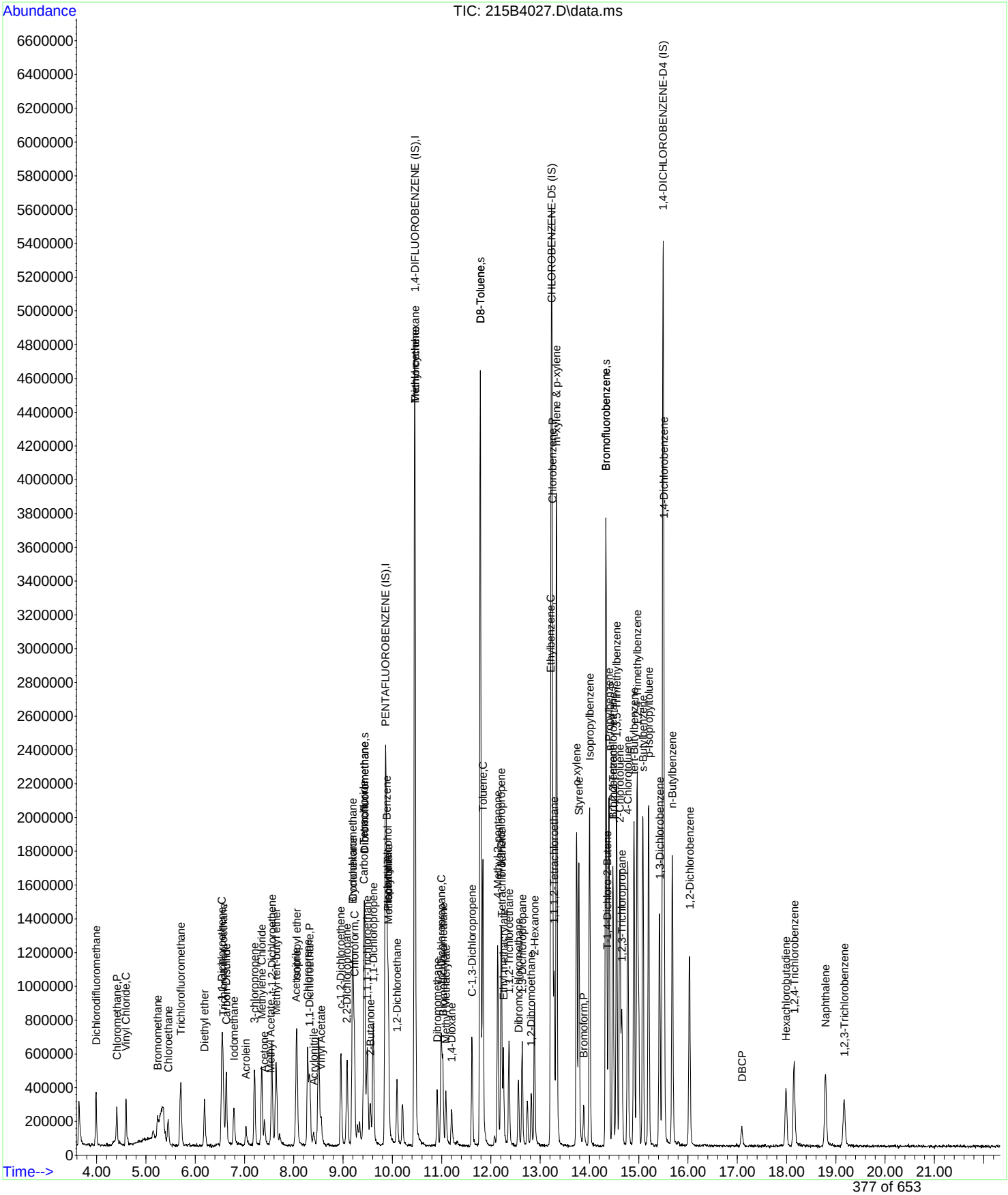
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3249398	47.43	ug/L	#	93
54) 4-Methyl-2-pentanone	12.136	100	152639	81.12	ug/L	#	73
56) Toluene	11.837	92	768899	22.38	ug/L		94
57) T-1,3-Dichloropropene	12.207	75	381885	18.68	ug/L		93
58) Tetrachloroethene	12.219	164	183919	19.46	ug/L		91
59) Ethyl methacrylate	12.254	69	288341	15.77	ug/L		97
60) 1,1,2-Trichloroethane	12.365	97	229100	19.74	ug/L		93
61) Dibromochloromethane	12.559	129	227696	22.97	ug/L	#	95
62) 1,3-Dichloropropane	12.636	76	413706	19.25	ug/L	#	83
63) 1,2-Dibromoethane	12.818	107	236497	21.89	ug/L	#	100
64) 2-Hexanone	12.883	43	506402	64.00	ug/L	#	92
65) Ethylbenzene	13.212	106	459348	22.00	ug/L		91
66) Chlorobenzene	13.247	112	836424	24.17	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	246043	23.76	ug/L		98
68) m-xylene & p-xylene	13.329	106	1204913	49.72	ug/L		84
69) o-xylene	13.740	106	596414	24.00	ug/L		85
70) Styrene	13.781	104	993452	24.48	ug/L	#	85
71) Bromoform	13.881	173	107403	19.44	ug/L		97
72) Isopropylbenzene	14.005	105	1543987	23.60	ug/L		93
74) Bromofluorobenzene	14.334	95	1587282	55.20	ug/L	#	82
75) n-Propylbenzene	14.398	91	1908900	21.83	ug/L		95
76) 1,1,2,2-Tetrachloroethane	14.475	83	330992	20.40	ug/L	#	95
77) 1,2,3-Trichloropropane	14.657	61	92637	15.62	ug/L	#	75
78) T-1,4-Dichloro-2-Butene	14.357	53	87250	13.63	ug/L	#	49
80) Bromobenzene	14.475	156	298743	19.82	ug/L		92
81) 1,2,4-Trimethylbenzene	14.968	105	1435457	20.48	ug/L		94
82) 2-Chlorotoluene	14.616	91	1180103	20.03	ug/L	#	92
83) 4-Chlorotoluene	14.774	91	1207945	19.64	ug/L		93
84) tert-Butylbenzene	14.904	119	1124411	21.12	ug/L		89
85) 1,3,5-Trimethylbenzene	14.551	105	1386817	20.43	ug/L		96
86) p-Isopropyltoluene	15.203	119	1421455	21.49	ug/L		94
87) s-Butylbenzene	15.086	105	1702582	21.37	ug/L		96
88) 1,3-Dichlorobenzene	15.427	146	657989	21.79	ug/L		94
89) 1,4-Dichlorobenzene	15.509	146	683462	21.11	ug/L		94
90) n-Butylbenzene	15.679	91	1266600	18.42	ug/L		95
91) 1,2-Dichlorobenzene	16.032	146	601949	21.12	ug/L		95
92) DBCP	17.095	157	39269	17.53	ug/L		97
93) Hexachlorobutadiene	17.988	225	78664	12.27	ug/L	#	86
94) 1,2,4-Trichlorobenzene	18.153	180	215298	15.30	ug/L		94
95) Naphthalene	18.787	128	609832	20.58	ug/L	#	91
96) 1,2,3-Trichlorobenzene	19.175	180	131206	16.18	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4027.D
Acq On : 4 Feb 2021 8:27 pm
Operator : KKW
Sample : 1B04041-BS1
Misc :
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Feb 05 07:53:31 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4028.D
Acq On : 4 Feb 2021 8:57 pm
Operator : KKW
Sample : AA64821-CRL1
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Feb 05 07:53:36 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1275996	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2624030	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1530993	50.00	ug/L	#-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1445019	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	692376	52.61	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.22%			
52) D8-Toluene	11.784	98	3031199	46.77	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.54%			
73) Bromofluorobenzene	14.334	95	1456490	53.27	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.54%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.993	85	10810	0.66	ug/L #	92
3) Chloromethane	4.410	50	14871	0.78	ug/L #	77
4) Vinyl Chloride	4.592	62	9128	0.59	ug/L	99
5) Bromomethane	5.238	94	6829	1.79	ug/L #	37
6) Chloroethane	5.450	64	7164	1.06	ug/L	92
7) Trichlorofluoromethane	5.697	101	13591	0.71	ug/L #	69
8) Diethyl ether	6.184	59	5185	0.49	ug/L #	48
9) 1,1-Dichloroethene	6.549	96	9411	0.85	ug/L #	60
10) Trichlorotrifluoroethane	6.549	151	4563	0.62	ug/L #	40
11) Acrolein	7.025	56	14413	6.51	ug/L	84
12) Iodomethane	6.784	142	33321	2.82	ug/L #	87
13) Carbon Disulfide	6.631	76	111271	3.08	ug/L	96
14) 3-chloropropene	7.195	41	11370	0.52	ug/L #	86
15) Acetone	7.436	43	10543	3.52	ug/L #	60
16) Methylene Chloride	7.348	84	59980	4.49	ug/L #	73
17) Methyl Acetate	7.559	43	3563	0.38	ug/L #	66
18) t-1,2-Dichloroethene	7.553	96	9302	0.73	ug/L	85
19) Methyl tert-butyl ether	7.642	73	22585	0.70	ug/L	95
20) Acetonitrile	8.053	41	9931	4.09	ug/L #	70
21) Isopropyl ether	8.059	45	16219	0.38	ug/L #	50
22) Chloroprene	8.288	88	6981	0.57	ug/L	83
23) 1,1-Dichloroethane	8.329	63	17761	0.68	ug/L #	94
24) Acrylonitrile	8.394	53	29378	7.42	ug/L #	64
25) Vinyl Acetate	8.564	43	47157	1.76	ug/L #	90
26) c-1,2-Dichloroethene	8.958	96	11371	0.84	ug/L	82
27) 2,2-Dichloropropane	9.093	77	10661	0.48	ug/L #	73
28) Bromochloromethane	9.187	128	4125	0.86	ug/L #	1
29) Cyclohexane	9.199	56	12615	0.44	ug/L #	75
30) Chloroform	9.234	83	14275	0.57	ug/L #	85
32) Dibromofluoromethane	9.434	113	693188	52.67	ug/L #	89
33) 2-Butanone	9.598	72	3711	2.61	ug/L #	42
34) 1,1,1-Trichloroethane	9.492	97	13923	0.67	ug/L #	85
35) 1,1-Dichloropropene	9.622	75	10277	0.49	ug/L #	70
36) Propionitrile	9.915	54	11724	6.53	ug/L #	94
37) Methacrylonitrile	9.915	41	34194	3.86	ug/L #	81
38) Isobutyl Alcohol	9.933	43	10785	10.06	ug/L #	78
40) Carbon Tetrachloride	9.422	117	10153	0.52	ug/L #	52
41) Benzene	9.886	78	41570	0.69	ug/L #	87
42) 1,2-Dichloroethane	10.098	62	11725	0.54	ug/L #	81
43) Trichloroethene	10.468	130	11378	0.94	ug/L #	1
44) Methyl cyclohexane	10.450	83	53952	1.79	ug/L #	52
45) Dibromomethane	10.920	93	8140	0.96	ug/L	89
46) 1,2-Dichloropropane	10.985	63	9162	0.56	ug/L	97
47) Bromodichloromethane	11.020	83	13414	0.76	ug/L #	85
48) Methyl Methacrylate	11.108	69	4010	0.36	ug/L #	47
49) 1,4-Dioxane	11.202	88	1862	12.24	ug/L #	11
50) 2-Chloroethyl vinyl ether	11.508	63	17522	2.07	ug/L #	85
51) C-1,3-Dichloropropene	11.613	75	13662	0.57	ug/L #	95

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4028.D
Acq On : 4 Feb 2021 8:57 pm
Operator : KKW
Sample : AA64821-CRL1
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Feb 05 07:53:36 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

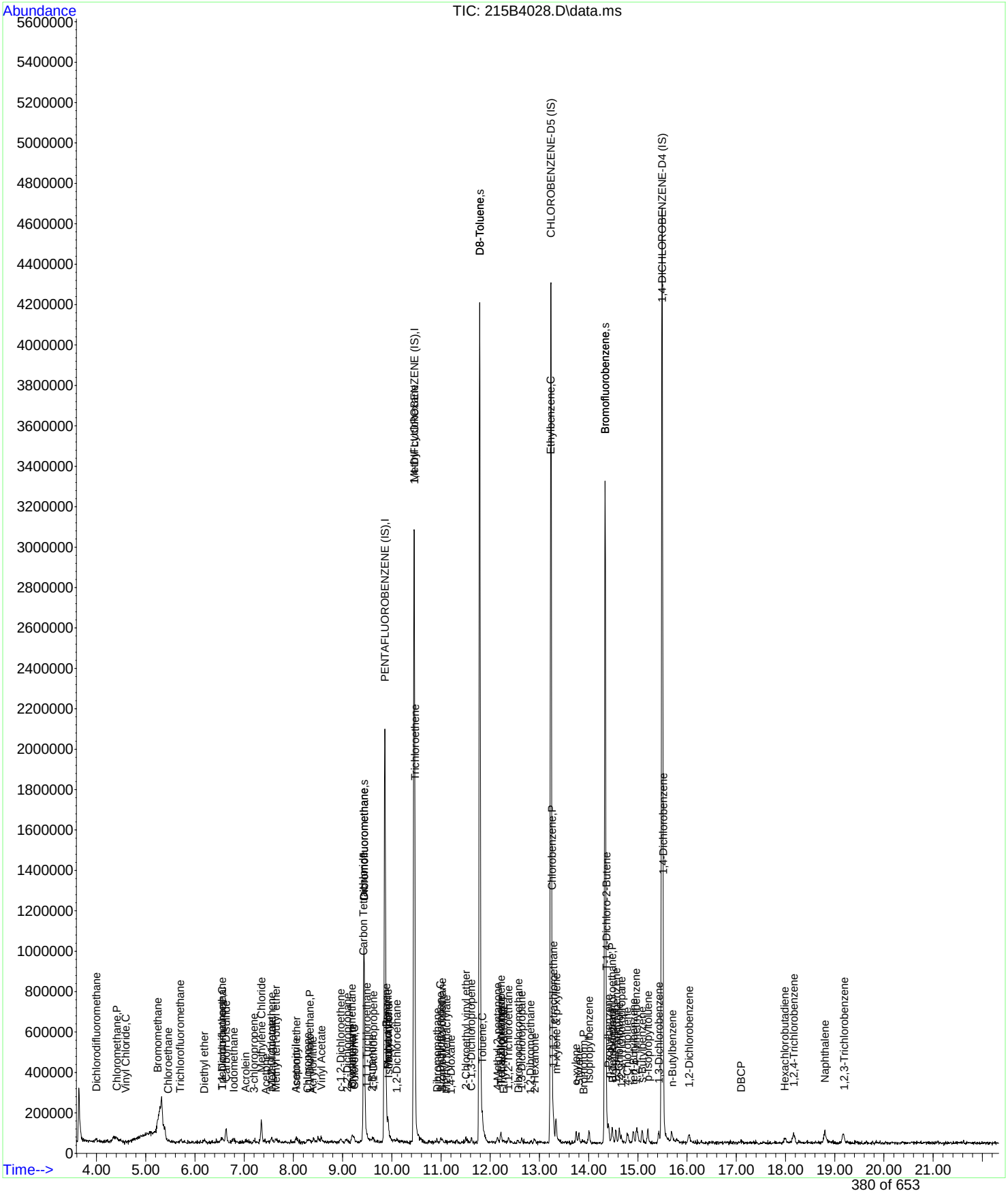
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3031135	46.77	ug/L	#	93
54) 4-Methyl-2-pentanone	12.148	100	6096	3.42	ug/L	#	56
56) Toluene	11.837	92	26638	0.82	ug/L		97
57) T-1,3-Dichloropropene	12.213	75	10269	0.53	ug/L	#	88
58) Tetrachloroethene	12.219	164	8832	0.98	ug/L		82
59) Ethyl methacrylate	12.271	69	5267	0.30	ug/L	#	54
60) 1,1,2-Trichloroethane	12.366	97	8781	0.80	ug/L	#	72
61) Dibromochloromethane	12.571	129	7285	0.82	ug/L	#	84
62) 1,3-Dichloropropane	12.636	76	16470	0.81	ug/L	#	54
63) 1,2-Dibromoethane	12.818	107	8172	0.80	ug/L	#	97
64) 2-Hexanone	12.900	43	14790	1.97	ug/L	#	92
65) Ethylbenzene	13.223	106	16767	0.84	ug/L	#	83
66) Chlorobenzene	13.253	112	34821	1.06	ug/L		97
67) 1,1,1,2-Tetrachloroethane	13.282	131	9858	1.00	ug/L		88
68) m-xylene & p-xylene	13.341	106	36638	1.59	ug/L		95
69) o-xylene	13.740	106	18214	0.77	ug/L		94
70) Styrene	13.799	104	28927	0.75	ug/L		95
71) Bromoform	13.893	173	4660	0.96	ug/L	#	73
72) Isopropylbenzene	14.005	105	40558	0.65	ug/L		94
74) Bromofluorobenzene	14.334	95	1456490	53.27	ug/L	#	83
75) n-Propylbenzene	14.404	91	74134	0.89	ug/L	#	96
76) 1,1,2,2-Tetrachloroethane	14.475	83	14511	0.94	ug/L	#	78
77) 1,2,3-Trichloropropane	14.663	61	4306	0.76	ug/L	#	64
78) T-1,4-Dichloro-2-Butene	14.357	53	1258	0.21	ug/L	#	1
80) Bromobenzene	14.487	156	13589	0.93	ug/L		85
81) 1,2,4-Trimethylbenzene	14.963	105	49389	0.73	ug/L		97
82) 2-Chlorotoluene	14.622	91	44678	0.79	ug/L		96
83) 4-Chlorotoluene	14.780	91	43053	0.73	ug/L		98
84) tert-Butylbenzene	14.910	119	36103	0.70	ug/L		96
85) 1,3,5-Trimethylbenzene	14.557	105	46387	0.71	ug/L		99
86) p-Isopropyltoluene	15.203	119	48076	0.75	ug/L		95
87) s-Butylbenzene	15.086	105	55709	0.72	ug/L		95
88) 1,3-Dichlorobenzene	15.427	146	32183	1.10	ug/L	#	85
89) 1,4-Dichlorobenzene	15.515	146	31570	1.01	ug/L	#	1
90) n-Butylbenzene	15.697	91	48583	0.73	ug/L	#	66
91) 1,2-Dichlorobenzene	16.038	146	29286	1.06	ug/L	#	70
92) DBCP	17.095	157	4594	2.18	ug/L	#	40
93) Hexachlorobutadiene	17.983	225	6843	1.13	ug/L		94
94) 1,2,4-Trichlorobenzene	18.171	180	24970	1.86	ug/L		98
95) Naphthalene	18.799	128	106803	3.80	ug/L	#	78
96) 1,2,3-Trichlorobenzene	19.193	180	26585	3.48	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4028.D
Acq On : 4 Feb 2021 8:57 pm
Operator : KKW
Sample : AA64821-CRL1
Misc :
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Feb 05 07:53:36 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4031.D
Acq On : 4 Feb 2021 10:26 pm
Operator : KKW
Sample : 1B04041-BLK1
Misc :
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Feb 05 07:53:44 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1199534	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2453816	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1404372	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1342519	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	644659	52.11	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.22%			
52) D8-Toluene	11.784	98	2827847	46.66	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.32%			
73) Bromofluorobenzene	14.334	95	1325867	52.87	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	4.416	50	1403	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.362	64	1064	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.631	76	4276	N.D.		
14) 3-chloropropene	7.183	41	1948	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	7.565	43	1229	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	7.548	73	1220	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.170	45	2258	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.211	63	1259	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.423	43	1463	N.D.		
26) c-1,2-Dichloroethene	8.981	96	1280	N.D.		
27) 2,2-Dichloropropane	8.940	77	1109	N.D.		
28) Bromochloromethane	0.000		0	N.D.	d	
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.240	83	1206	N.D.		
32) Dibromofluoromethane	9.434	113	645778	52.20	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.	d	
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.357	117	1938	N.D.		
41) Benzene	9.874	78	3398	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	10.873	93	1177	N.D.		
46) 1,2-Dichloropropane	11.008	63	1124	N.D.		
47) Bromodichloromethane	10.991	83	1021	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	11.514	63	1037	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4031.D
Acq On : 4 Feb 2021 10:26 pm
Operator : KKW
Sample : 1B04041-BLK1
Misc :
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Feb 05 07:53:44 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

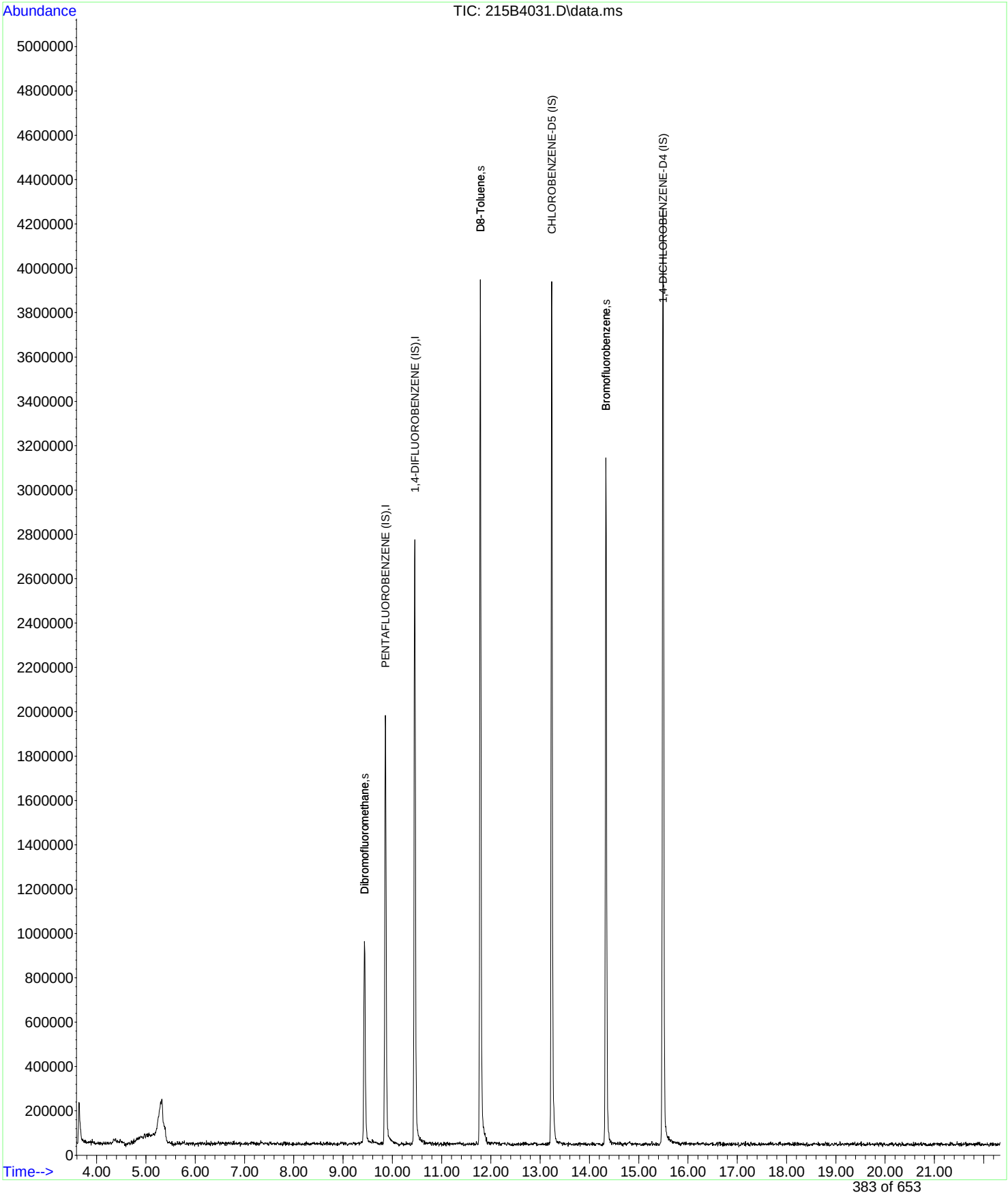
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2826509	46.63 ug/L #	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.819	92	2011	N.D.	
57) T-1,3-Dichloropropene	12.254	75	1612	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.383	97	1126	N.D.	
61) Dibromochloromethane	12.589	129	1187	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.924	43	1000	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.229	112	1089	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1325867	52.87 ug/L	85
75) n-Propylbenzene	14.393	91	1256	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.328	83	1381	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.322	156	1360	N.D.	
81) 1,2,4-Trimethylbenzene	15.098	105	1021	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.792	91	1080	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.227	119	1142	N.D.	
87) s-Butylbenzene	15.098	105	1021	N.D.	
88) 1,3-Dichlorobenzene	15.433	146	1265	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	5639	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	16.026	146	1163	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.870	128	1991	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4031.D
Acq On : 4 Feb 2021 10:26 pm
Operator : KKW
Sample : 1B04041-BLK1
Misc :
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Feb 05 07:53:44 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4032.D
Acq On : 4 Feb 2021 10:56 pm
Operator : KKW
Sample : 1B04041-MS1
Misc :
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Feb 05 07:53:48 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1219153	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2488311	50.00	ug/L		-0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1517810	50.00	ug/L	#	-0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1493687	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	662610	52.70	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.40%				
52) D8-Toluene	11.784	98	2967758	48.29	ug/L		-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.58%				
73) Bromofluorobenzene	14.334	95	1490933	55.00	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.00%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	289370	18.39	ug/L		99
3) Chloromethane	4.404	50	197075	10.88	ug/L		93
4) Vinyl Chloride	4.592	62	261611	17.78	ug/L		95
5) Bromomethane	5.233	94	64930	16.63	ug/L	#	93
6) Chloroethane	5.450	64	147961	22.86	ug/L		95
7) Trichlorofluoromethane	5.703	101	404584	22.10	ug/L		97
8) Diethyl ether	6.184	59	155305	15.26	ug/L		86
9) 1,1-Dichloroethene	6.543	96	213465	20.28	ug/L	#	79
10) Trichlorotrifluoroethane	6.566	151	156159	22.15	ug/L		90
11) Acrolein	7.025	56	135700	64.10	ug/L	#	9
12) Iodomethane	6.784	142	182628	16.18	ug/L	#	87
13) Carbon Disulfide	6.631	76	620859	18.01	ug/L		95
14) 3-chloropropene	7.201	41	255421	12.28	ug/L	#	76
15) Acetone	7.407	43	185822	64.87	ug/L		98
16) Methylene Chloride	7.348	84	240969	18.88	ug/L	#	72
17) Methyl Acetate	7.530	43	70174	7.84	ug/L	#	69
18) t-1,2-Dichloroethene	7.553	96	241445	19.82	ug/L		84
19) Methyl tert-butyl ether	7.642	73	1953136	63.36	ug/L		94
20) Acetonitrile	7.982	41	3105	1.34	ug/L	#	52
21) Isopropyl ether	8.059	45	561347	13.72	ug/L	#	84
22) Chloroprene	8.276	88	213462	18.30	ug/L		91
23) 1,1-Dichloroethane	8.323	63	429870	17.16	ug/L		97
24) Acrylonitrile	8.405	53	85677	22.65	ug/L	#	76
25) Vinyl Acetate	8.558	43	196879	7.67	ug/L	#	88
26) c-1,2-Dichloroethene	8.958	96	266109	20.63	ug/L		84
27) 2,2-Dichloropropane	9.081	77	336814	15.93	ug/L		97
28) Bromochloromethane	9.193	128	118967	26.11	ug/L		96
29) Cyclohexane	9.199	56	626698	23.00	ug/L		93
30) Chloroform	9.228	83	487869	20.39	ug/L		95
32) Dibromofluoromethane	9.434	113	662610	52.70	ug/L	#	88
33) 2-Butanone	9.557	72	119439	87.17	ug/L	#	63
34) 1,1,1-Trichloroethane	9.492	97	410604	20.79	ug/L		99
35) 1,1-Dichloropropene	9.616	75	375915	18.71	ug/L	#	84
36) Propionitrile	9.915	54	27071	15.79	ug/L	#	1
37) Methacrylonitrile	9.915	41	188480	22.26	ug/L	#	83
38) Isobutyl Alcohol	9.910	43	187618	183.22	ug/L	#	1
40) Carbon Tetrachloride	9.422	117	327123	17.55	ug/L		85
41) Benzene	9.880	78	3583404	62.99	ug/L		94
42) 1,2-Dichloroethane	10.098	62	318779	15.36	ug/L		96
43) Trichloroethene	10.456	130	268698	23.39	ug/L	#	90
44) Methyl cyclohexane	10.456	83	662962	23.23	ug/L		89
45) Dibromomethane	10.908	93	149221	18.46	ug/L		94
46) 1,2-Dichloropropane	10.991	63	234650	14.73	ug/L	#	89
47) Bromodichloromethane	11.020	83	334501	19.16	ug/L		97
48) Methyl Methacrylate	11.085	69	145610	13.78	ug/L	#	79
49) 1,4-Dioxane	11.196	88	49494	343.11	ug/L		88
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.613	75	373940	15.92	ug/L		93

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4032.D
Acq On : 4 Feb 2021 10:56 pm
Operator : KKW
Sample : 1B04041-MS1
Misc :
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Feb 05 07:53:48 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

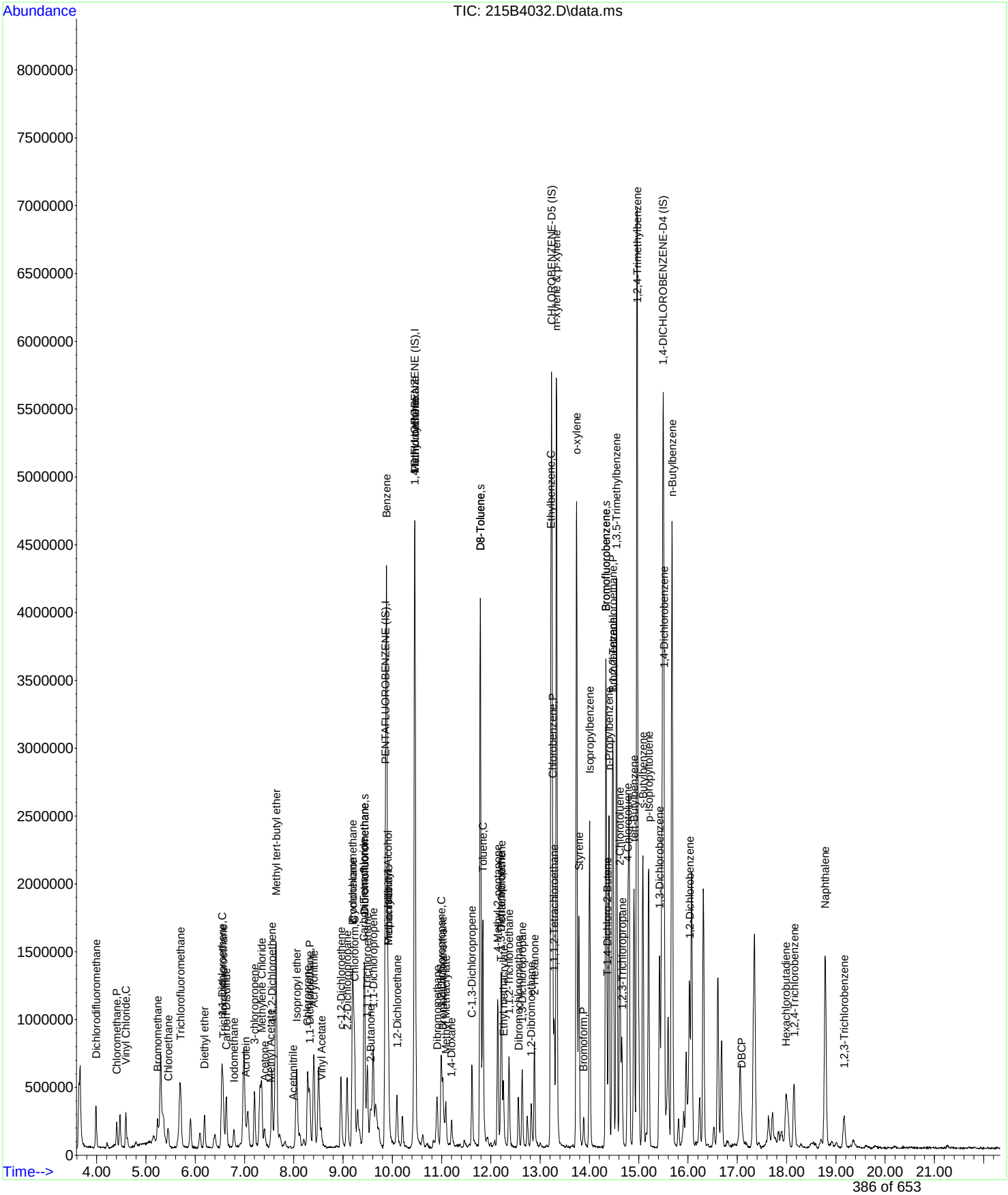
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	2967758	48.29	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	159576	94.52	ug/L	#	58
56) Toluene	11.837	92	742801	22.94	ug/L		94
57) T-1,3-Dichloropropene	12.201	75	353902	18.36	ug/L	#	93
58) Tetrachloroethene	12.213	164	187647	21.06	ug/L		96
59) Ethyl methacrylate	12.254	69	262487	15.23	ug/L	#	91
60) 1,1,2-Trichloroethane	12.371	97	227748	20.81	ug/L		92
61) Dibromochloromethane	12.559	129	209403	22.44	ug/L		97
62) 1,3-Dichloropropane	12.636	76	376274	18.57	ug/L	#	84
63) 1,2-Dibromoethane	12.818	107	219765	21.58	ug/L	#	94
64) 2-Hexanone	12.883	43	448702	60.16	ug/L	#	88
65) Ethylbenzene	13.218	106	636688	32.35	ug/L	#	87
66) Chlorobenzene	13.253	112	797769	24.45	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	247404	25.34	ug/L		97
68) m-xylene & p-xylene	13.329	106	1772005	77.56	ug/L		85
69) o-xylene	13.740	106	1450569	61.91	ug/L		91
70) Styrene	13.787	104	959994	25.09	ug/L	#	85
71) Bromoform	13.876	173	104098	19.95	ug/L		91
72) Isopropylbenzene	14.005	105	1793354	29.08	ug/L		96
74) Bromofluorobenzene	14.334	95	1490933	55.00	ug/L		84
75) n-Propylbenzene	14.399	91	2212503	26.84	ug/L	#	93
76) 1,1,2,2-Tetrachloroethane	14.475	83	316809	20.72	ug/L	#	99
77) 1,2,3-Trichloropropane	14.663	61	99451m	17.79	ug/L		
78) T-1,4-Dichloro-2-Butene	14.357	53	79302	13.14	ug/L	#	16
80) Bromobenzene	14.475	156	319772	21.26	ug/L		92
81) 1,2,4-Trimethylbenzene	14.968	105	4713674	67.40	ug/L		95
82) 2-Chlorotoluene	14.616	91	1143104	19.45	ug/L		92
83) 4-Chlorotoluene	14.775	91	1376317	22.42	ug/L		98
84) tert-Butylbenzene	14.904	119	1127597	21.23	ug/L		89
85) 1,3,5-Trimethylbenzene	14.545	105	2695325	39.79	ug/L		94
86) p-Isopropyltoluene	15.203	119	1454963	22.05	ug/L		92
87) s-Butylbenzene	15.086	105	1815175	22.84	ug/L		96
88) 1,3-Dichlorobenzene	15.421	146	655245	21.75	ug/L		94
89) 1,4-Dichlorobenzene	15.515	146	666333	20.63	ug/L		95
90) n-Butylbenzene	15.679	91	1681923	24.51	ug/L	#	95
91) 1,2-Dichlorobenzene	16.032	146	604117	21.24	ug/L		94
92) DBCP	17.090	157	38146	17.08	ug/L		100
93) Hexachlorobutadiene	17.988	225	75376	11.80	ug/L	#	85
94) 1,2,4-Trichlorobenzene	18.153	180	210473	15.00	ug/L		94
95) Naphthalene	18.782	128	1854054	60.37	ug/L	#	92
96) 1,2,3-Trichlorobenzene	19.169	180	104162	12.96	ug/L	#	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4032.D
Acq On : 4 Feb 2021 10:56 pm
Operator : KKW
Sample : 1B04041-MS1
Misc :
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Feb 05 07:53:48 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4033.D
Acq On : 4 Feb 2021 11:26 pm
Operator : KKW
Sample : AE00592-01
Misc :
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Feb 05 07:53:52 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1296741	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2793187	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1581742	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1482665	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	736371	55.06	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 110.12%			
52) D8-Toluene	11.784	98	3286216	47.63	ug/L	-0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.26%			
73) Bromofluorobenzene	14.334	95	1536545	54.40	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.957	85	1740	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.	d	
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	0.000		0	N.D.	d	
14) 3-chloropropene	0.000		0	N.D.	d	
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.553	96	2043	N.D.		
19) Methyl tert-butyl ether	7.641	73	1572318	47.96	ug/L	96
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.211	45	1717	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.270	63	2317	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.552	43	1462	N.D.		
26) c-1,2-Dichloroethene	8.958	96	1560	N.D.		
27) 2,2-Dichloropropane	9.069	77	1045	N.D.		
28) Bromochloromethane	0.000		0	N.D.	d	
29) Cyclohexane	9.228	56	317264	10.95	ug/L #	66
30) Chloroform	0.000		0	N.D.	d	
32) Dibromofluoromethane	9.439	113	737183	55.12	ug/L #	90
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	d	
35) 1,1-Dichloropropene	0.000		0	N.D.	d	
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.398	117	1230	N.D.		
41) Benzene	9.886	78	2828339	44.29	ug/L	94
42) 1,2-Dichloroethane	10.092	62	2423	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	10.891	93	1449	N.D.		
46) 1,2-Dichloropropane	10.985	63	1294	N.D.		
47) Bromodichloromethane	0.000		0	N.D.	d	
48) Methyl Methacrylate	0.000		0	N.D.	d	
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.613	75	1445	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4033.D
Acq On : 4 Feb 2021 11:26 pm
Operator : KKW
Sample : AE00592-01
Misc :
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Feb 05 07:53:52 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

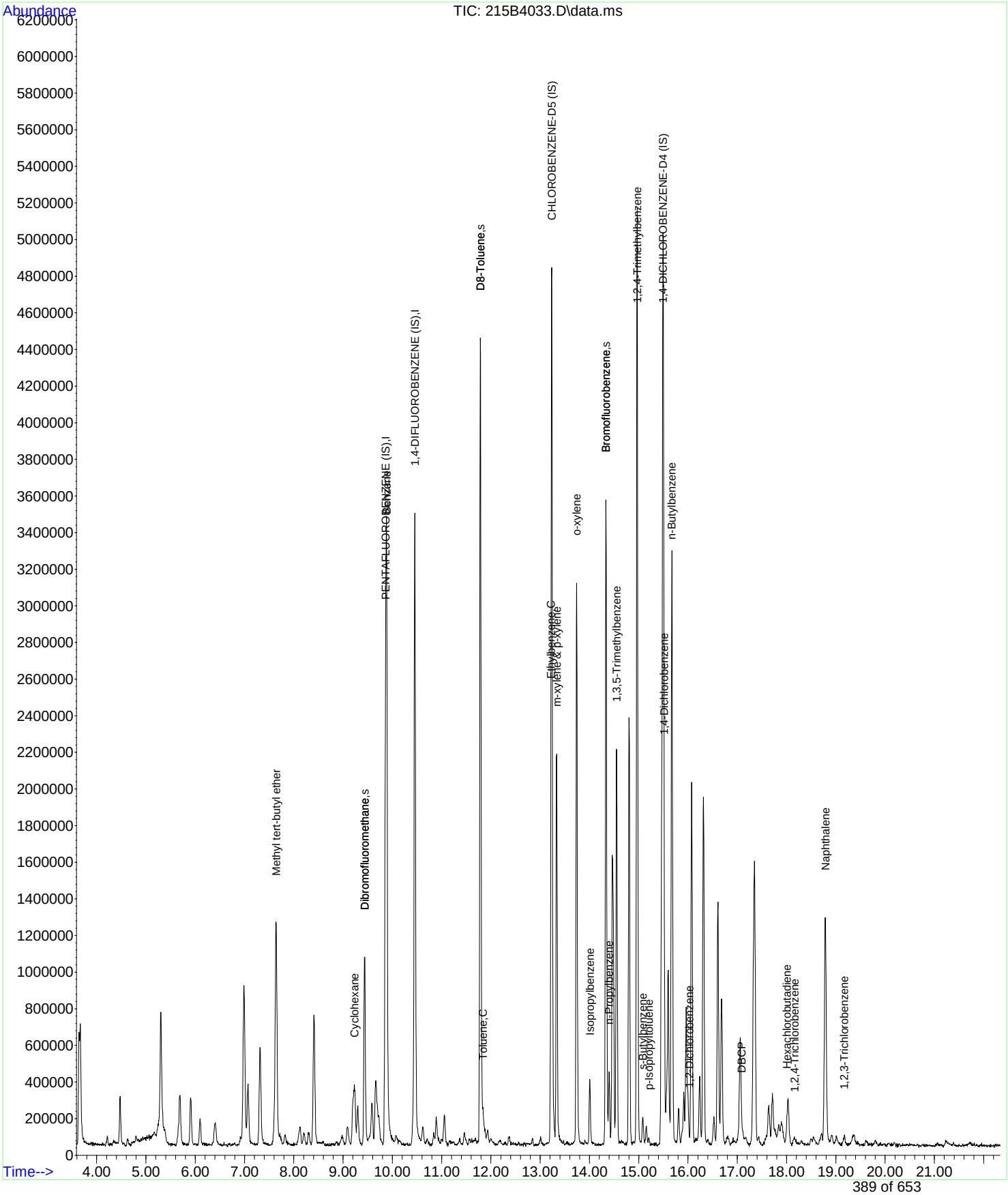
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3279710	47.54 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	33183	0.98 ug/L	98
57) T-1,3-Dichloropropene	12.230	75	2349	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.266	69	1576	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D. d	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.636	76	1901	N.D.	
63) 1,2-Dibromoethane	12.835	107	1530	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.217	106	195198	9.52 ug/L	97
66) Chlorobenzene	13.253	112	4187	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	681929	28.64 ug/L	84
69) o-xylene	13.740	106	948288	38.84 ug/L	90
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.011	105	282479	4.40 ug/L	97
74) Bromofluorobenzene	14.334	95	1536545	54.40 ug/L #	81
75) n-Propylbenzene	14.398	91	327990	3.82 ug/L	97
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D. d	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.469	156	2150	N.D.	
81) 1,2,4-Trimethylbenzene	14.968	105	3367023	48.51 ug/L	95
82) 2-Chlorotoluene	14.633	91	7360	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D. d	
84) tert-Butylbenzene	14.904	119	6732	N.D.	
85) 1,3,5-Trimethylbenzene	14.551	105	1431487	21.29 ug/L	96
86) p-Isopropyltoluene	15.203	119	23330	0.36 ug/L #	47
87) s-Butylbenzene	15.080	105	81226	1.03 ug/L #	29
88) 1,3-Dichlorobenzene	15.421	146	3606	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	10084	0.31 ug/L #	1
90) n-Butylbenzene	15.668	91	384341	5.64 ug/L #	61
91) 1,2-Dichlorobenzene	16.026	146	8556	0.30 ug/L #	87
92) DBCP	17.089	157	1790	0.83 ug/L	91
93) Hexachlorobutadiene	18.006	225	3843	0.62 ug/L #	32
94) 1,2,4-Trichlorobenzene	18.165	180	13426	0.97 ug/L #	26
95) Naphthalene	18.787	128	1704808	56.14 ug/L #	92
96) 1,2,3-Trichlorobenzene	19.169	180	14311	1.83 ug/L #	69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4033.D
Acq On : 4 Feb 2021 11:26 pm
Operator : KKW
Sample : AE00592-01
Misc :
ALS Vial : 31 Sample Multiplier: 1

Quant Time: Feb 05 07:53:52 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4036.D
Acq On : 5 Feb 2021 12:55 am
Operator : KKW
Sample : AE00180-17
Misc :
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Feb 05 07:54:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	1292426	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2695366	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1533203	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1432979	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.440	113	696315	52.24 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.48%		
52) D8-Toluene	11.790	98	3138039	47.13 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.26%		
73) Bromofluorobenzene	14.334	95	1509847	55.14 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.575	62	1137	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.350	64	1140	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.284	59	1020	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.807	142	4933	0.41 ug/L #	61
13) Carbon Disulfide	6.631	76	2726	N.D.	
14) 3-chloropropene	7.283	41	1032	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.365	84	1915	N.D.	
17) Methyl Acetate	7.507	43	1071	N.D.	
18) t-1,2-Dichloroethene	7.395	96	1058	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.088	45	1078	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.276	63	1434	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.523	43	1526	N.D.	
26) c-1,2-Dichloroethene	8.975	96	3667	0.27 ug/L #	83
27) 2,2-Dichloropropane	9.005	77	1039	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.440	113	696315	52.24 ug/L #	86
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.910	41	1355	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.910	78	7219	N.D.	
42) 1,2-Dichloroethane	9.974	62	1224	N.D.	
43) Trichloroethene	10.450	130	7429	0.60 ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	10.985	63	1196	N.D.	
47) Bromodichloromethane	11.102	83	1585	N.D.	
48) Methyl Methacrylate	11.067	69	1273	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	11.496	63	1442	N.D.	
51) C-1,3-Dichloropropene	11.772	75	1412	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4036.D
Acq On : 5 Feb 2021 12:55 am
Operator : KKW
Sample : AE00180-17
Misc :
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Feb 05 07:54:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

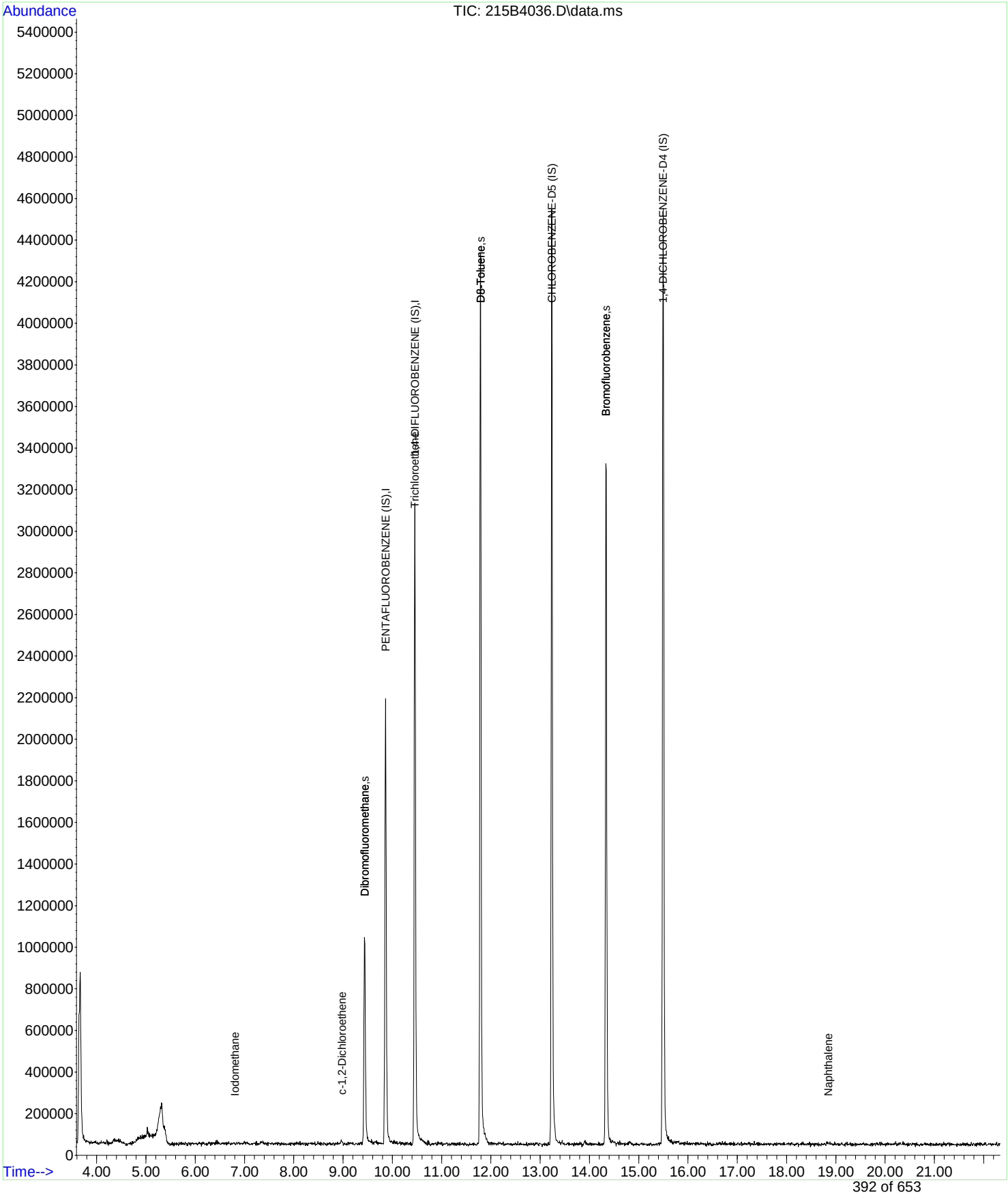
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3126566	46.96 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.813	92	1789	N.D.	
57) T-1,3-Dichloropropene	12.248	75	1980	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.366	69	1355	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.618	76	1349	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.947	43	1014	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.241	112	1361	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1509847	55.14 ug/L #	83
75) n-Propylbenzene	14.416	91	1781	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.328	83	2060	N.D.	
77) 1,2,3-Trichloropropane	14.675	61	1113	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.316	156	1313	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	2728	N.D.	
82) 2-Chlorotoluene	14.628	91	1514	N.D.	
83) 4-Chlorotoluene	14.816	91	1008	N.D.	
84) tert-Butylbenzene	14.904	119	1223	N.D.	
85) 1,3,5-Trimethylbenzene	14.569	105	1913	N.D.	
86) p-Isopropyltoluene	15.162	119	1307	N.D.	
87) s-Butylbenzene	14.986	105	2728	N.D.	
88) 1,3-Dichlorobenzene	15.439	146	1914	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	1558	N.D.	
90) n-Butylbenzene	15.515	91	1908	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.846	128	14329	0.52 ug/L #	89
96) 1,2,3-Trichlorobenzene	19.175	180	1005	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4036.D
Acq On : 5 Feb 2021 12:55 am
Operator : KKW
Sample : AE00180-17
Misc :
ALS Vial : 34 Sample Multiplier: 1

Quant Time: Feb 05 07:54:05 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4037.D
Acq On : 5 Feb 2021 1:25 am
Operator : KKW
Sample : AE00180-18
Misc :
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Feb 05 07:54:09 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.863	168	1248483	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2638675	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1501734	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1399603	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	712485	55.33	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 110.66%			
52) D8-Toluene	11.790	98	3071056	47.12	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.24%			
73) Bromofluorobenzene	14.340	95	1448541	54.01	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	4.434	50	2996	N.D.		
4) Vinyl Chloride	4.598	62	77796	5.16	ug/L	100
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.403	64	1010	N.D.		
7) Trichlorofluoromethane	5.632	101	1153	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.637	76	2868	N.D.		
14) 3-chloropropene	7.201	41	1450	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.354	84	1239	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.559	96	16434	1.32	ug/L #	80
19) Methyl tert-butyl ether	7.571	73	1155	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.053	45	1812	N.D.		
22) Chloroprene	8.294	88	1124	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.588	43	1281	N.D.		
26) c-1,2-Dichloroethene	8.958	96	1391508	105.33	ug/L	85
27) 2,2-Dichloropropane	9.046	77	1332	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.157	56	1183	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.439	113	713823	55.44	ug/L #	92
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	9.939	41	1515	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.369	117	2706	N.D.		
41) Benzene	9.910	78	5319	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	119958	9.85	ug/L #	83
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.991	63	1170	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	11.502	63	1132	N.D.		
51) C-1,3-Dichloropropene	11.772	75	2037	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4037.D
Acq On : 5 Feb 2021 1:25 am
Operator : KKW
Sample : AE00180-18
Misc :
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Feb 05 07:54:09 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

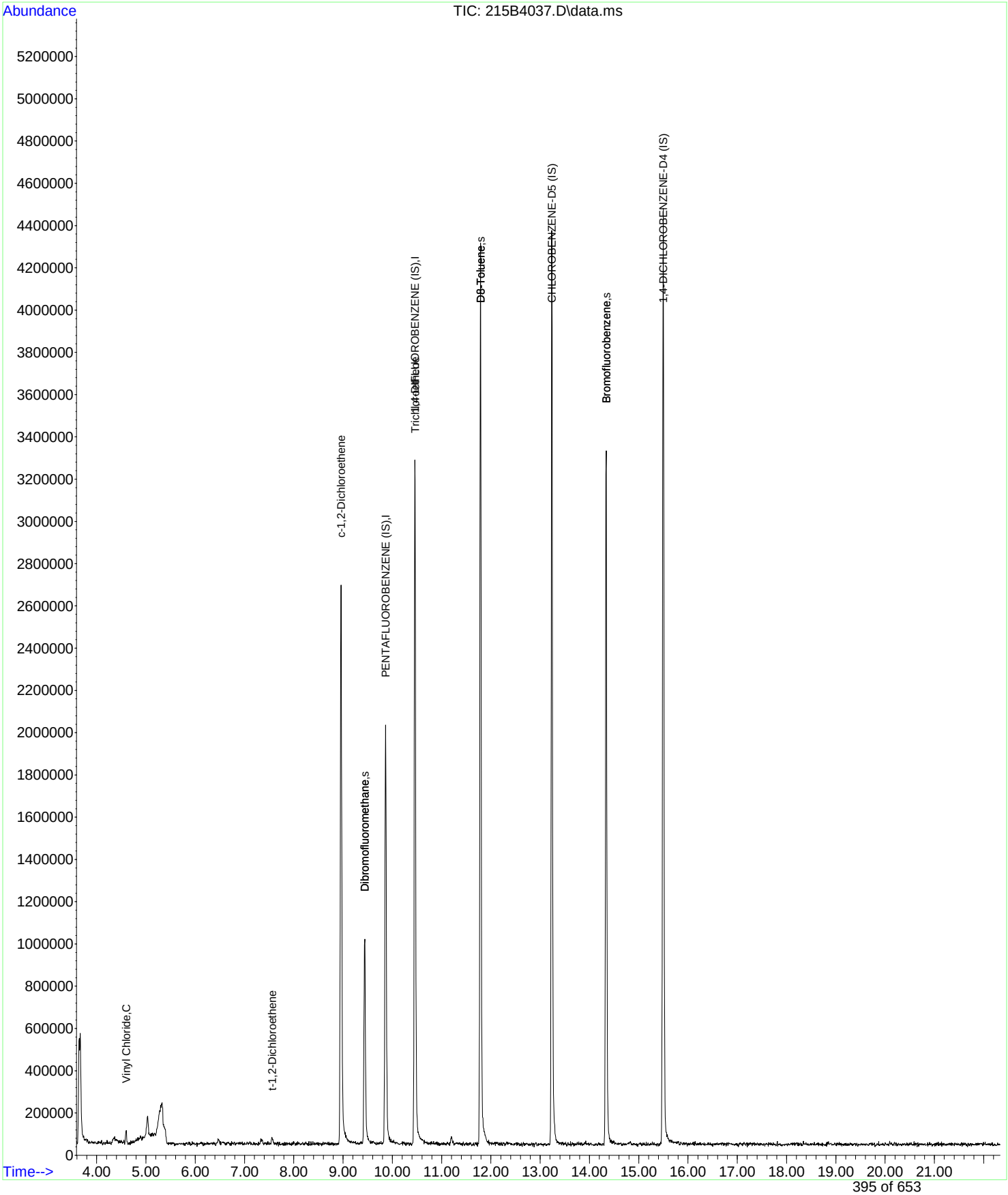
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3069521	47.10 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.790	92	1487	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.307	69	1075	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.824	43	1236	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.235	112	1543	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.958	105	1113	N.D.	
74) Bromofluorobenzene	14.340	95	1448541	54.01 ug/L	84
75) n-Propylbenzene	14.328	91	5114	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.310	83	1499	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.340	156	1974	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	1893	N.D.	
82) 2-Chlorotoluene	14.628	91	1016	N.D.	
83) 4-Chlorotoluene	14.628	91	1016	N.D.	
84) tert-Butylbenzene	14.916	119	1107	N.D.	
85) 1,3,5-Trimethylbenzene	14.434	105	1116	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.986	105	1893	N.D.	
88) 1,3-Dichlorobenzene	15.444	146	1690	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	1022	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D. d	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.840	128	3204	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4037.D
Acq On : 5 Feb 2021 1:25 am
Operator : KKW
Sample : AE00180-18
Misc :
ALS Vial : 35 Sample Multiplier: 1

Quant Time: Feb 05 07:54:09 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4038.D
Acq On : 5 Feb 2021 1:54 am
Operator : KKW
Sample : AE00180-19
Misc :
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Feb 05 07:54:13 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	1202815	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2508689	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1469083	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1389638	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.440	113	655849	52.87 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.74%		
52) D8-Toluene	11.790	98	2891640	46.67 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.34%		
73) Bromofluorobenzene	14.340	95	1384746	52.78 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.56%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.940	85	2424	N.D.	
3) Chloromethane	4.392	50	1342	N.D.	
4) Vinyl Chloride	4.598	62	17031	1.17 ug/L #	54
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.419	96	1082	N.D.	
10) Trichlorotrifluoroethane	6.572	151	7418	1.07 ug/L #	63
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.772	142	4241	0.38 ug/L #	33
13) Carbon Disulfide	6.637	76	3181	N.D.	
14) 3-chloropropene	7.083	41	1128	N.D.	
15) Acetone	7.412	43	25998	9.20 ug/L #	79
16) Methylene Chloride	7.342	84	1837	N.D.	
17) Methyl Acetate	7.530	43	1531	N.D.	
18) t-1,2-Dichloroethene	7.559	96	7672	0.64 ug/L #	62
19) Methyl tert-butyl ether	7.747	73	1017	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.012	45	1500	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.646	43	1233	N.D.	
26) c-1,2-Dichloroethene	8.964	96	193442	15.20 ug/L	83
27) 2,2-Dichloropropane	9.087	77	1080	N.D.	
28) Bromochloromethane	0.000		0	N.D. d	
29) Cyclohexane	9.199	56	1199	N.D.	
30) Chloroform	9.257	83	1660	N.D.	
32) Dibromofluoromethane	9.440	113	657500	53.00 ug/L #	91
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.610	97	1186	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.933	41	1117	N.D.	
38) Isobutyl Alcohol	9.863	43	2836	2.81 ug/L #	1
40) Carbon Tetrachloride	9.363	117	2159	N.D.	
41) Benzene	9.892	78	3481	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.462	130	72879	6.29 ug/L #	63
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.991	93	1508	N.D.	
46) 1,2-Dichloropropane	11.020	63	1082	N.D.	
47) Bromodichloromethane	11.079	83	1048	N.D.	
48) Methyl Methacrylate	11.232	69	1039	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	11.390	63	1166	N.D.	
51) C-1,3-Dichloropropene	11.666	75	1223	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4038.D
Acq On : 5 Feb 2021 1:54 am
Operator : KKW
Sample : AE00180-19
Misc :
ALS Vial : 36 Sample Multiplier: 1

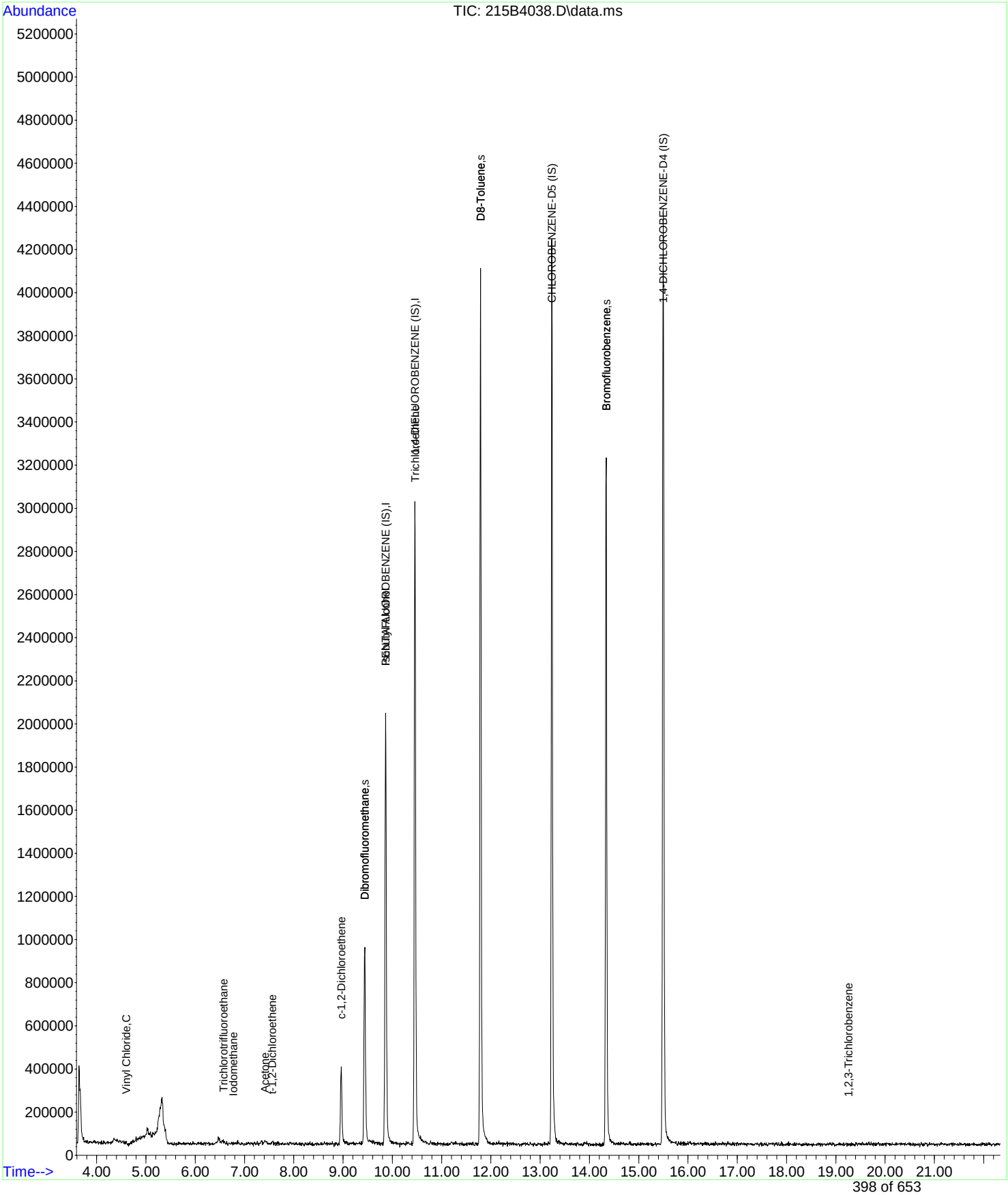
Quant Time: Feb 05 07:54:13 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2890942	46.65 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	12.213	75	1210	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.118	106	1065	N.D.	
66) Chlorobenzene	13.259	112	1005	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.058	105	1525	N.D.	
74) Bromofluorobenzene	14.340	95	1384746	52.78 ug/L	85
75) n-Propylbenzene	14.334	91	4913	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.334	83	1124	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	14.375	53	1079	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	1161	N.D.	
82) 2-Chlorotoluene	14.469	91	1020	N.D.	
83) 4-Chlorotoluene	14.810	91	1225	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.086	105	1267	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	1815	N.D.	
89) 1,4-Dichlorobenzene	15.521	146	1167	N.D.	
90) n-Butylbenzene	15.726	91	1082	N.D.	
91) 1,2-Dichlorobenzene	16.132	146	1004	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.852	128	2240	N.D.	
96) 1,2,3-Trichlorobenzene	19.252	180	1469	0.20 ug/L #	39

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4038.D
Acq On : 5 Feb 2021 1:54 am
Operator : KKW
Sample : AE00180-19
Misc :
ALS Vial : 36 Sample Multiplier: 1

Quant Time: Feb 05 07:54:13 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4039.D
Acq On : 5 Feb 2021 2:24 am
Operator : KKW
Sample : AE00180-20@25X
Misc : 25
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Feb 05 07:54:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	1171849	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2414208	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1390675	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1341887	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.439	113	644980	53.36 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.72%		
52) D8-Toluene	11.790	98	2808263	47.09 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.18%		
73) Bromofluorobenzene	14.334	95	1338242	53.88 ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.993	85	1567	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.592	62	150570	10.65 ug/L	97
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	5.714	101	1535	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.549	96	2990	0.30 ug/L #	79
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	7.195	41	3009	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.359	84	5047	0.41 ug/L #	52
17) Methyl Acetate	7.547	43	1110	N.D.	
18) t-1,2-Dichloroethene	7.559	96	5623	0.48 ug/L #	70
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.070	45	3310	N.D.	
22) Chloroprene	8.276	88	1582	N.D.	
23) 1,1-Dichloroethane	8.323	63	6267	0.26 ug/L #	56
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.593	43	1456	N.D.	
26) c-1,2-Dichloroethene	8.958	96	718702	57.96 ug/L	86
27) 2,2-Dichloropropane	9.087	77	3745	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.234	83	6774	0.29 ug/L #	88
32) Dibromofluoromethane	9.439	113	646371	53.48 ug/L #	89
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D. d	
35) 1,1-Dichloropropene	0.000		0	N.D. d	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	10.074	41	1285	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.422	117	1871	N.D.	
41) Benzene	9.892	78	17781	0.32 ug/L	96
42) 1,2-Dichloroethane	10.115	62	1103	N.D.	
43) Trichloroethene	10.468	130	16671	1.50 ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	11.008	63	2664	N.D.	
47) Bromodichloromethane	11.014	83	1152	N.D.	
48) Methyl Methacrylate	11.184	69	1026	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.766	75	1297	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4039.D
Acq On : 5 Feb 2021 2:24 am
Operator : KKW
Sample : AE00180-20@25X
Misc : 25
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Feb 05 07:54:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

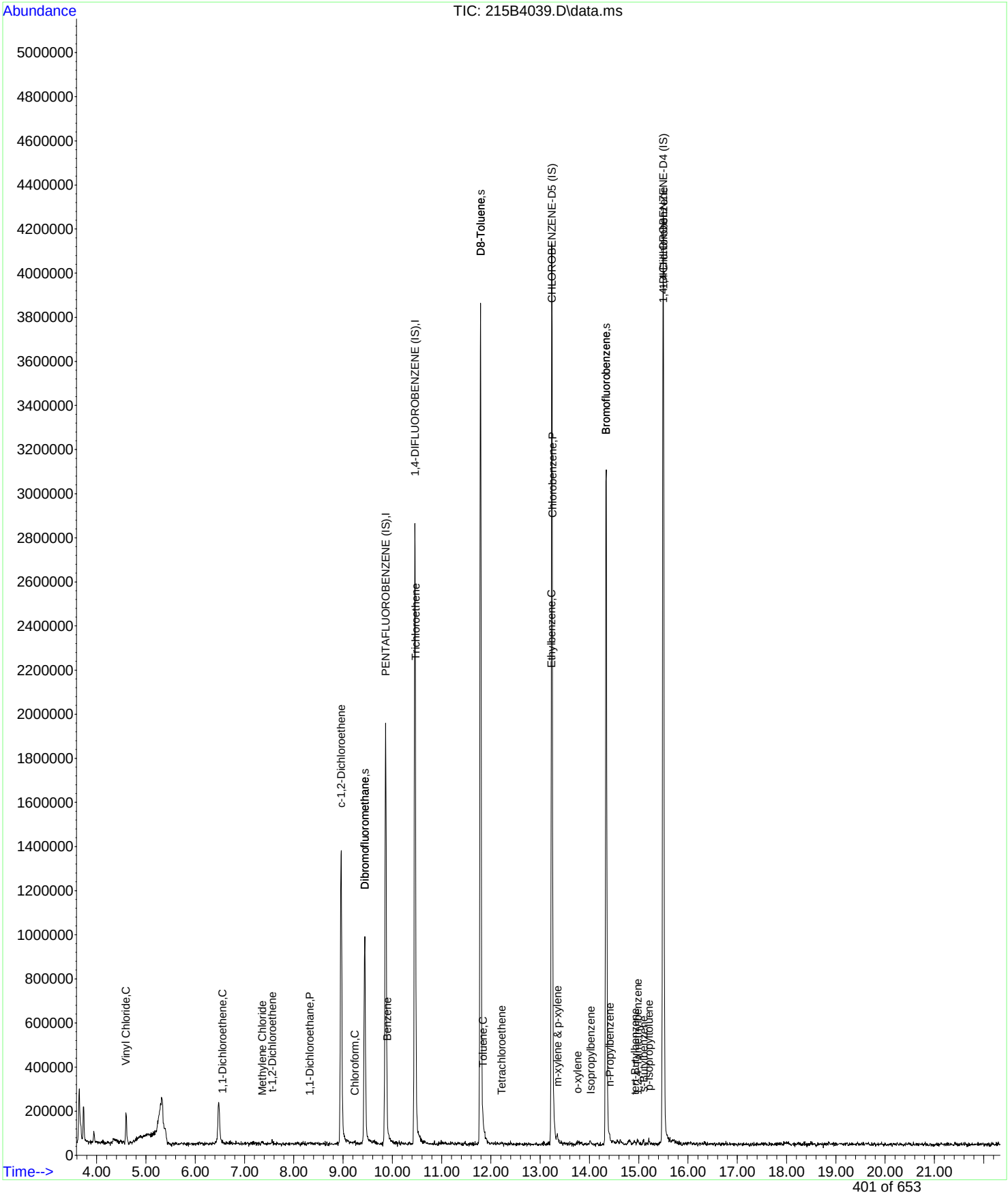
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2806626	47.07 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	9897	0.33 ug/L	80
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	12.213	164	2437	0.30 ug/L #	84
59) Ethyl methacrylate	12.318	69	1085	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.853	107	1230	N.D.	
64) 2-Hexanone	12.947	43	1140	N.D.	
65) Ethylbenzene	13.223	106	7016	0.39 ug/L #	80
66) Chlorobenzene	13.247	112	10150	0.34 ug/L #	72
67) 1,1,1,2-Tetrachloroethane	13.294	131	1547	N.D.	
68) m-xylene & p-xylene	13.347	106	11745	0.56 ug/L	97
69) o-xylene	13.758	106	5901	0.27 ug/L #	47
70) Styrene	13.787	104	1106	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.022	105	12061	0.21 ug/L #	85
74) Bromofluorobenzene	14.334	95	1338242	53.88 ug/L	85
75) n-Propylbenzene	14.410	91	21625	0.29 ug/L #	86
76) 1,1,2,2-Tetrachloroethane	14.486	83	1073	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	14.316	53	1023	N.D.	
80) Bromobenzene	14.492	156	1309	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	12898	0.21 ug/L #	95
82) 2-Chlorotoluene	0.000		0	N.D. d	
83) 4-Chlorotoluene	14.786	91	10268	N.D.	
84) tert-Butylbenzene	14.921	119	10752	0.23 ug/L #	76
85) 1,3,5-Trimethylbenzene	14.569	105	11688	N.D.	
86) p-Isopropyltoluene	15.203	119	11902	0.20 ug/L #	77
87) s-Butylbenzene	15.098	105	14716	0.21 ug/L #	88
88) 1,3-Dichlorobenzene	15.427	146	4377	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	9030	0.31 ug/L #	1
90) n-Butylbenzene	15.697	91	10704	N.D.	
91) 1,2-Dichlorobenzene	16.049	146	1516	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	18.212	180	1464	N.D.	
95) Naphthalene	18.881	128	1419	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4039.D
Acq On : 5 Feb 2021 2:24 am
Operator : KKW
Sample : AE00180-20@25X
Misc : 25
ALS Vial : 37 Sample Multiplier: 1

Quant Time: Feb 05 07:54:17 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4040.D
Acq On : 5 Feb 2021 2:54 am
Operator : KKW
Sample : AE00180-21
Misc :
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Feb 05 07:54:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1166335	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2364955	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1368132	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1346925	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	640007	53.20	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.40%			
52) D8-Toluene	11.790	98	2830378	48.45	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.90%			
73) Bromofluorobenzene	14.334	95	1322070	54.11	ug/L	-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.22%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.899	85	1414	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.598	62	186157	13.23	ug/L	97
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.391	64	1088	N.D.		
7) Trichlorofluoromethane	5.749	101	1130	N.D.		
8) Diethyl ether	6.225	59	1013	N.D.		
9) 1,1-Dichloroethene	6.531	96	1093	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.631	76	1990	N.D.		
14) 3-chloropropene	7.066	41	2160	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.359	84	1578	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.571	96	6614	0.57	ug/L	88
19) Methyl tert-butyl ether	7.606	73	1196	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.076	45	1729	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.517	43	1181	N.D.		
26) c-1,2-Dichloroethene	8.963	96	688733	55.81	ug/L	84
27) 2,2-Dichloropropane	9.040	77	1104	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.187	56	1172	N.D.		
30) Chloroform	9.069	83	1061	N.D.		
32) Dibromofluoromethane	9.610	113	4710	0.39	ug/L	95
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.692	75	1258	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	9.862	41	1324	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.381	117	2463	N.D.		
41) Benzene	9.892	78	2817	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	128865	11.80	ug/L	82
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.973	63	1292	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	11.184	69	1117	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
51) C-1,3-Dichloropropene	11.784	75	1136	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4040.D
Acq On : 5 Feb 2021 2:54 am
Operator : KKW
Sample : AE00180-21
Misc :
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Feb 05 07:54:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

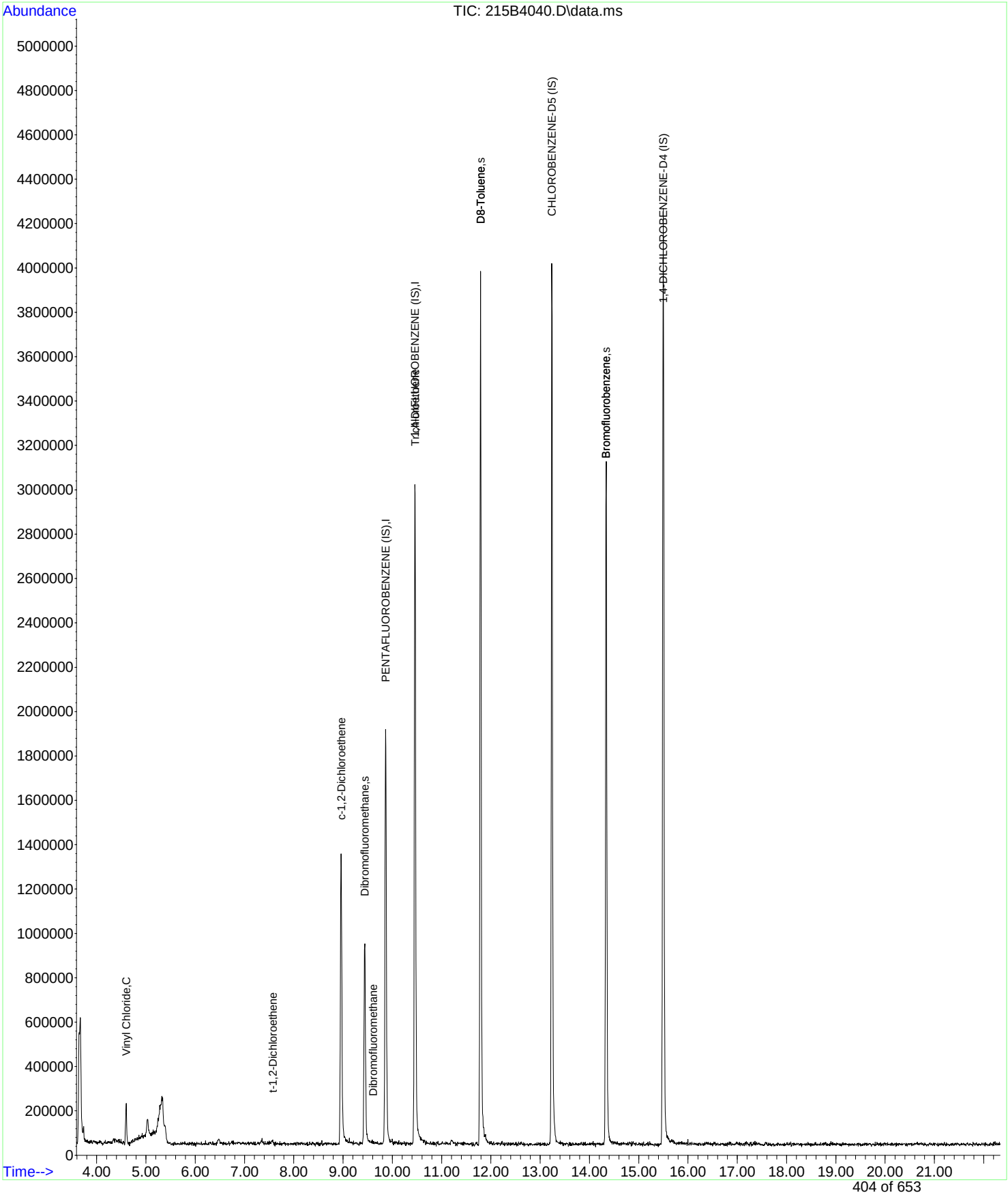
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2830378	48.45 ug/L #	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.842	92	3653	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.683	76	1073	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1322070	54.11 ug/L	87
75) n-Propylbenzene	14.340	91	5838	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.340	83	1329	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.486	156	1175	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	1139	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.986	105	1139	N.D.	
88) 1,3-Dichlorobenzene	15.509	146	3553	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	3553	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.940	128	1181	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4040.D
Acq On : 5 Feb 2021 2:54 am
Operator : KKW
Sample : AE00180-21
Misc :
ALS Vial : 38 Sample Multiplier: 1

Quant Time: Feb 05 07:54:21 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4041.D
Acq On : 5 Feb 2021 3:23 am
Operator : KKW
Sample : AE00180-22@5X
Misc : 5
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Feb 05 07:54:25 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1143182	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2352955	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1368339	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1310244	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	632417	53.64	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 107.28%			
52) D8-Toluene	11.790	98	2767368	47.62	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.24%			
73) Bromofluorobenzene	14.340	95	1325620	54.25	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.598	62	85371	6.19	ug/L #	87
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.332	64	1078	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.178	59	1401	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.584	151	2790	0.42	ug/L #	53
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.637	76	2088	N.D.		
14) 3-chloropropene	7.183	41	1031	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	7.571	43	1451	N.D.		
18) t-1,2-Dichloroethene	7.565	96	4511	0.40	ug/L	87
19) Methyl tert-butyl ether	7.706	73	1305	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	7.994	45	1203	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.329	63	1398	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.441	43	1657	N.D.		
26) c-1,2-Dichloroethene	8.958	96	863969	71.42	ug/L	85
27) 2,2-Dichloropropane	9.046	77	1034	N.D.		
28) Bromochloromethane	0.000		0	N.D.	d	
29) Cyclohexane	9.334	56	1425	N.D.		
30) Chloroform	9.263	83	1089	N.D.		
32) Dibromofluoromethane	9.439	113	632800	53.67	ug/L #	89
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	9.898	78	4257	N.D.		
42) 1,2-Dichloroethane	10.121	62	1056	N.D.		
43) Trichloroethene	10.462	130	107054	9.85	ug/L #	77
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.861	63	1288	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.760	75	1109	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4041.D
Acq On : 5 Feb 2021 3:23 am
Operator : KKW
Sample : AE00180-22@5X
Misc : 5
ALS Vial : 39 Sample Multiplier: 1

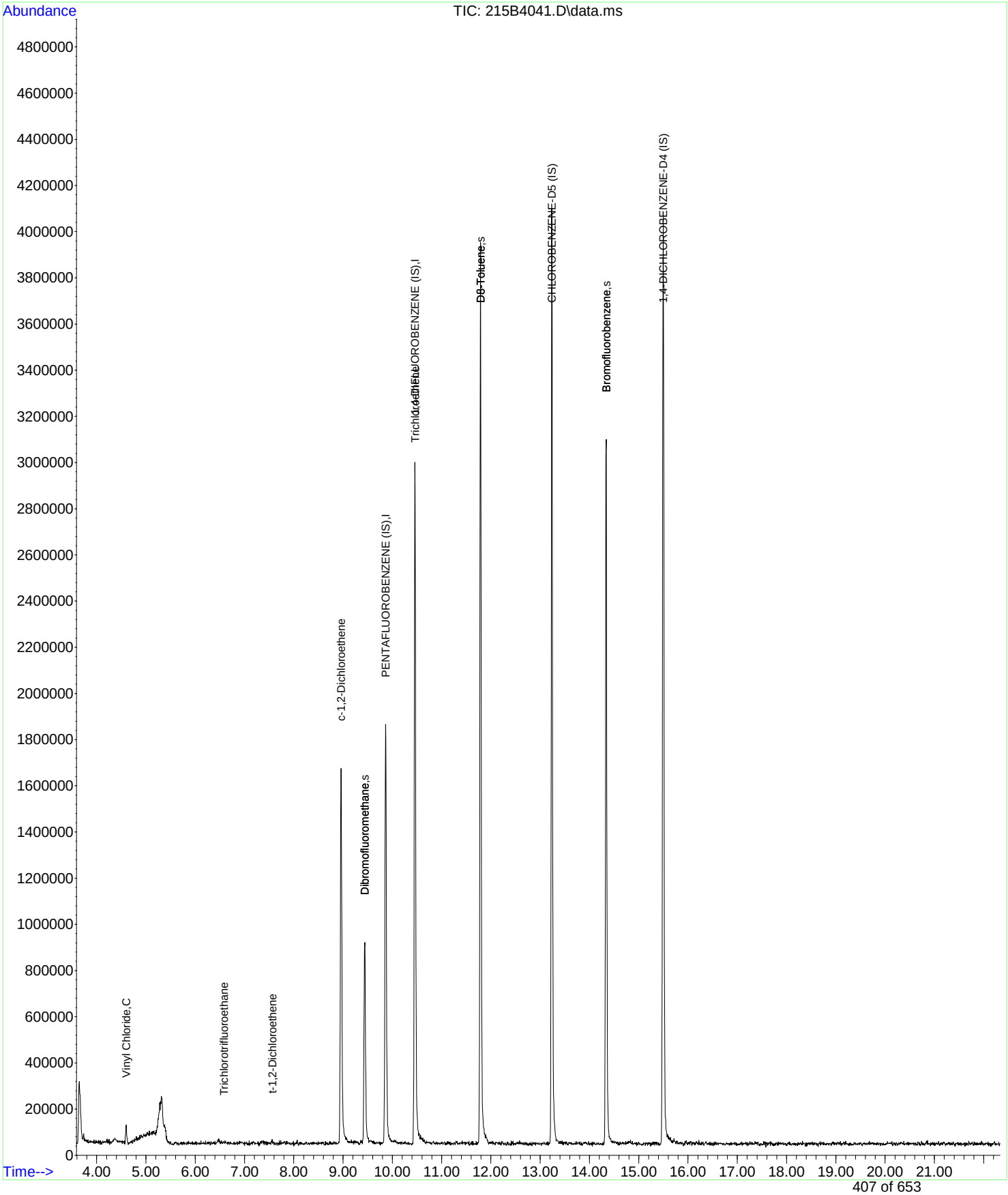
Quant Time: Feb 05 07:54:25 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2767368	47.62 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	1092	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.247	112	2218	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.828	104	1176	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1325620	54.25 ug/L	85
75) n-Propylbenzene	14.404	91	1650	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.510	83	1103	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.334	156	1413	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.927	119	1192	N.D.	
85) 1,3,5-Trimethylbenzene	14.663	105	1076	N.D.	
86) p-Isopropyltoluene	15.109	119	1132	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.438	146	1081	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	3685	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.876	128	1281	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4041.D
Acq On : 5 Feb 2021 3:23 am
Operator : KKW
Sample : AE00180-22@5X
Misc : 5
ALS Vial : 39 Sample Multiplier: 1

Quant Time: Feb 05 07:54:25 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4042.D
Acq On : 5 Feb 2021 3:53 am
Operator : KKW
Sample : AE00180-23
Misc :
ALS Vial : 40 Sample Multiplier: 1

Quant Time: Feb 05 07:54:29 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1165698	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2408044	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1365623	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1340939	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	655232	54.50	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.00%			
52) D8-Toluene	11.790	98	2790716	46.92	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.84%			
73) Bromofluorobenzene	14.340	95	1325681	54.36	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.72%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.846	85	1001	N.D.		
3) Chloromethane	4.416	50	2099	N.D.		
4) Vinyl Chloride	4.604	62	6267	0.45	ug/L #	1
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.249	59	1205	N.D.		
9) 1,1-Dichloroethene	6.554	96	2163	0.21	ug/L #	65
10) Trichlorotrifluoroethane	6.566	151	7682	1.14	ug/L #	66
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	6.625	76	3796	N.D.		
14) 3-chloropropene	7.265	41	1282	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	7.565	96	12675	1.09	ug/L	83
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	8.229	45	1292	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.358	63	1384	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.476	43	1123	N.D.		
26) c-1,2-Dichloroethene	8.963	96	153271	12.43	ug/L	84
27) 2,2-Dichloropropane	9.181	77	1354	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.310	56	1096	N.D.		
30) Chloroform	9.240	83	1977	N.D.		
32) Dibromofluoromethane	9.439	113	655489	54.52	ug/L #	91
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.574	75	1267	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D. d		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.369	117	2568	N.D.		
41) Benzene	9.880	78	1514	N.D.		
42) 1,2-Dichloroethane	9.968	62	1010	N.D.		
43) Trichloroethene	10.462	130	367336	33.04	ug/L #	87
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	11.055	83	1022	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4042.D
Acq On : 5 Feb 2021 3:53 am
Operator : KKW
Sample : AE00180-23
Misc :
ALS Vial : 40 Sample Multiplier: 1

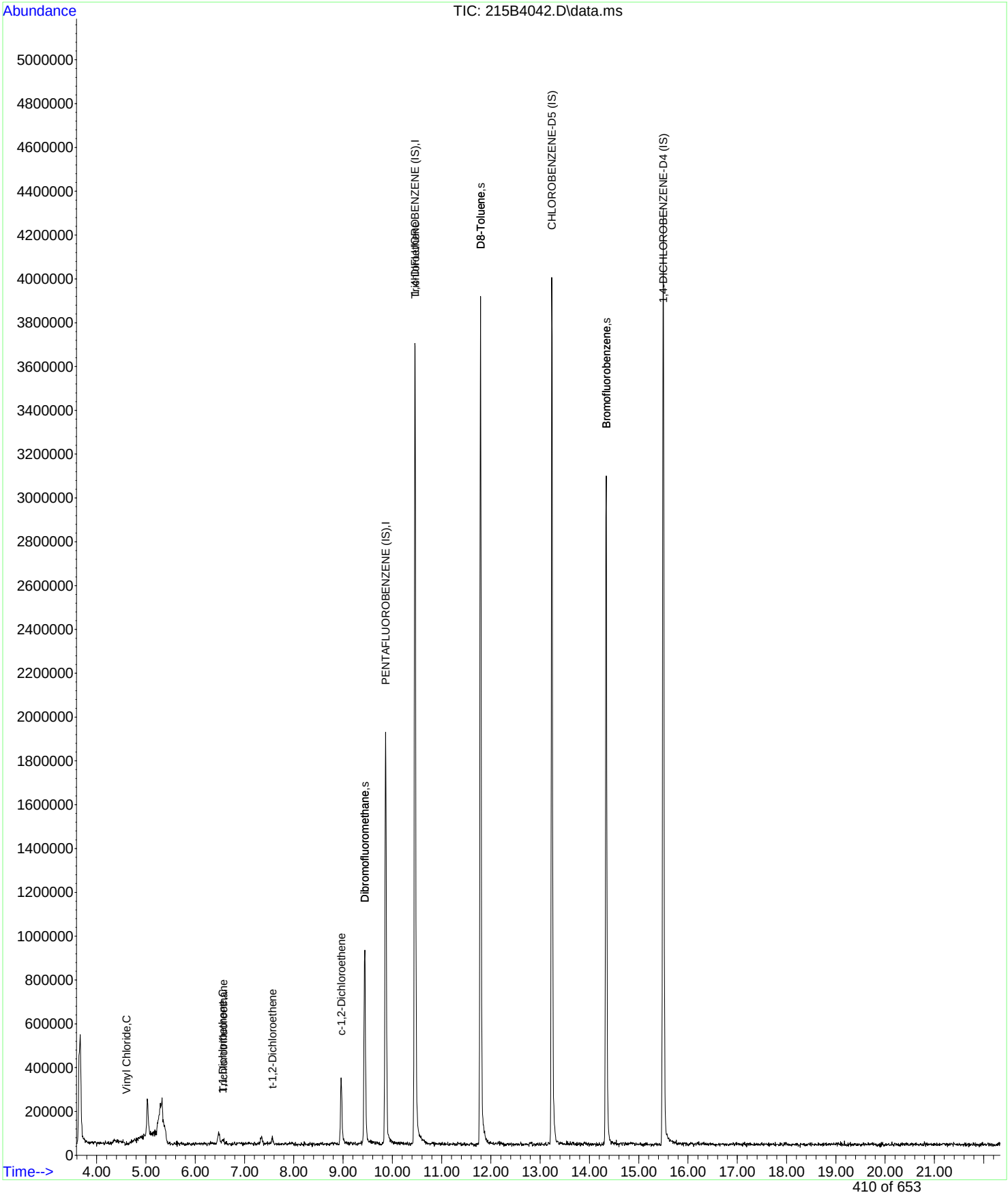
Quant Time: Feb 05 07:54:29 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2787286	46.86 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.842	92	3535	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.877	43	1032	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.258	112	1436	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.840	104	1023	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1325681	54.36 ug/L	87
75) n-Propylbenzene	14.404	91	1000	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.328	83	1105	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.845	105	1316	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.945	119	1316	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.203	119	1304	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	3823	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	3823	N.D.	
90) n-Butylbenzene	15.538	91	1016	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4042.D
Acq On : 5 Feb 2021 3:53 am
Operator : KKW
Sample : AE00180-23
Misc :
ALS Vial : 40 Sample Multiplier: 1

Quant Time: Feb 05 07:54:29 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4043.D
Acq On : 5 Feb 2021 4:23 am
Operator : KKW
Sample : AE00180-24@500X
Misc : 500
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Feb 05 07:54:33 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	1227487	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2389558	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1365719	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1344390	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	625212	49.38	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 98.76%				
52) D8-Toluene	11.790	98	2789600	47.26	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.52%				
73) Bromofluorobenzene	14.340	95	1345305	55.16	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.32%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	4.404	50	1113	N.D.			
4) Vinyl Chloride	4.592	62	2380	N.D.			
5) Bromomethane	0.000		0	N.D.	d		
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.	d		
10) Trichlorotrifluoroethane	6.572	151	302423	42.61	ug/L		89
11) Acrolein	0.000		0	N.D.	d		
12) Iodomethane	6.789	142	1371	N.D.			
13) Carbon Disulfide	6.619	76	3122	N.D.			
14) 3-chloropropene	7.160	41	1110	N.D.			
15) Acetone	0.000		0	N.D.	d		
16) Methylene Chloride	7.365	84	1765	N.D.			
17) Methyl Acetate	7.442	43	1404	N.D.			
18) t-1,2-Dichloroethene	7.553	96	1031	N.D.			
19) Methyl tert-butyl ether	7.741	73	1210	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	8.358	63	1732	N.D.			
24) Acrylonitrile	0.000		0	N.D.	d		
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.963	96	52608	4.05	ug/L		86
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.439	113	625212	49.38	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.	d		
37) Methacrylonitrile	9.909	41	1124	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.	d		
40) Carbon Tetrachloride	9.381	117	1108	N.D.			
41) Benzene	9.915	78	5966	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.462	130	1454484	131.83	ug/L	#	77
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	10.908	63	1540	N.D.			
47) Bromodichloromethane	10.902	83	1194	N.D.			
48) Methyl Methacrylate	11.249	69	1115	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.	d		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	11.772	75	1034	N.D.			

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4043.D
Acq On : 5 Feb 2021 4:23 am
Operator : KKW
Sample : AE00180-24@500X
Misc : 500
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Feb 05 07:54:33 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

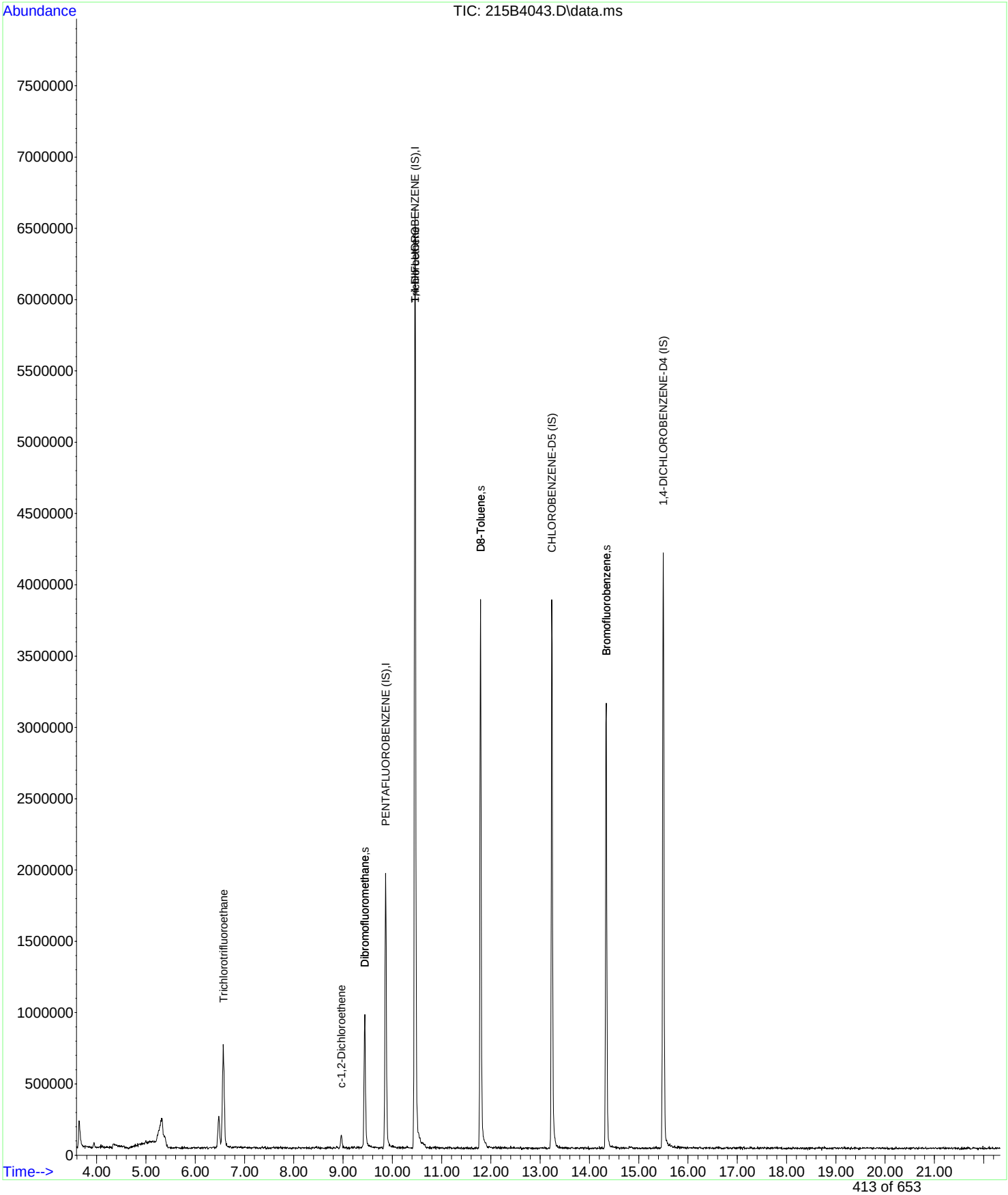
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2789600	47.26 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.801	92	1233	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.095	69	1054	N.D.	
60) 1,1,2-Trichloroethane	12.336	97	1675	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.229	112	1006	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.975	105	1175	N.D.	
74) Bromofluorobenzene	14.340	95	1345305	55.16 ug/L	86
75) n-Propylbenzene	14.404	91	1118	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.357	83	1024	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.810	91	1584	N.D.	
84) tert-Butylbenzene	14.780	119	1435	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.438	146	1344	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	1267	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4043.D
Acq On : 5 Feb 2021 4:23 am
Operator : KKW
Sample : AE00180-24@500X
Misc : 500
ALS Vial : 41 Sample Multiplier: 1

Quant Time: Feb 05 07:54:33 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4044.D
Acq On : 5 Feb 2021 4:52 am
Operator : KKW
Sample : AE00180-25@1000X
Misc : 1000
ALS Vial : 42 Sample Multiplier: 1

Quant Time: Feb 05 07:54:37 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.863	168	1208423	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2150543	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1360253	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1338057	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.440	113	628842	50.45	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.90%			
52) D8-Toluene	11.790	98	2787318	52.47	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.94%			
73) Bromofluorobenzene	14.340	95	1298140	53.44	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.88%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d	
3) Chloromethane	4.398	50	1920	N.D.		
4) Vinyl Chloride	4.592	62	5105	0.35	ug/L #	1
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.237	59	1577	N.D.		
9) 1,1-Dichloroethene	6.578	96	4256	0.41	ug/L #	26
10) Trichlorotrifluoroethane	6.566	151	760414	108.83	ug/L	92
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	6.784	142	2816	0.25	ug/L #	65
13) Carbon Disulfide	6.631	76	4502	N.D.		
14) 3-chloropropene	7.260	41	1204	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	7.518	43	1402	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	7.918	45	2195	N.D.		
22) Chloroprene	8.311	88	1442	N.D.		
23) 1,1-Dichloroethane	8.311	63	2257	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.546	43	1035	N.D.		
26) c-1,2-Dichloroethene	8.952	96	136626	10.68	ug/L	85
27) 2,2-Dichloropropane	9.111	77	1185	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.252	83	1199	N.D.		
32) Dibromofluoromethane	9.440	113	629646	50.52	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	9.892	78	4956	N.D.		
42) 1,2-Dichloroethane	10.127	62	1151	N.D.		
43) Trichloroethene	10.462	130	4857902	489.22	ug/L #	79
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	11.026	83	1182	N.D.		
48) Methyl Methacrylate	11.079	69	1049	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.602	75	1084	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4044.D
Acq On : 5 Feb 2021 4:52 am
Operator : KKW
Sample : AE00180-25@1000X
Misc : 1000
ALS Vial : 42 Sample Multiplier: 1

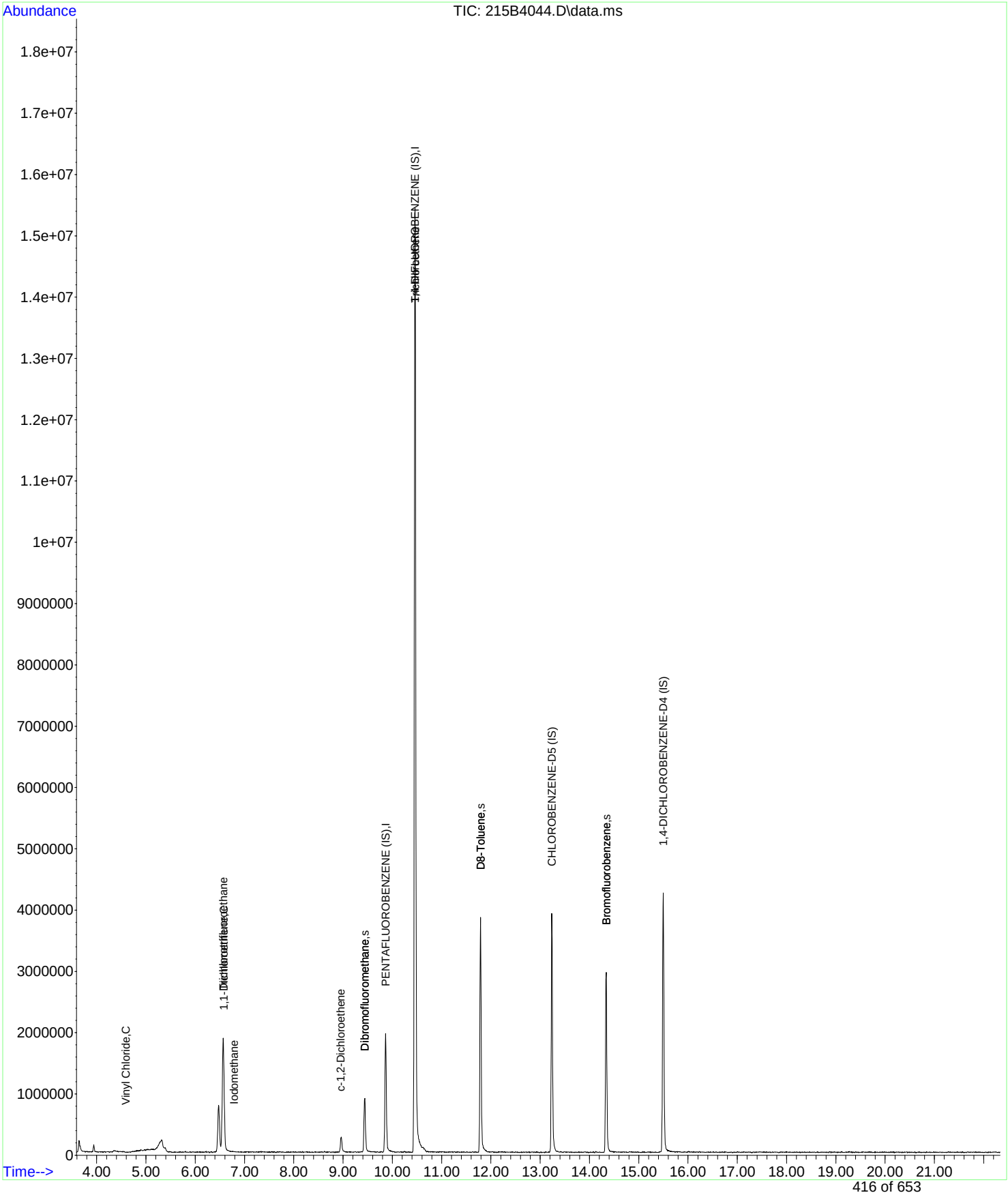
Quant Time: Feb 05 07:54:37 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2787318	52.47 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	1084	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.595	76	1374	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	13.035	43	1172	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1298140	53.44 ug/L	88
75) n-Propylbenzene	14.346	91	5551	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.340	156	1012	N.D.	
81) 1,2,4-Trimethylbenzene	15.045	105	1461	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.045	105	1461	N.D.	
88) 1,3-Dichlorobenzene	15.439	146	1306	N.D.	
89) 1,4-Dichlorobenzene	15.439	146	1306	N.D.	
90) n-Butylbenzene	15.732	91	1339	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4044.D
Acq On : 5 Feb 2021 4:52 am
Operator : KKW
Sample : AE00180-25@1000X
Misc : 1000
ALS Vial : 42 Sample Multiplier: 1

Quant Time: Feb 05 07:54:37 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4045.D
Acq On : 5 Feb 2021 5:22 am
Operator : KKW
Sample : AE00180-26@10X
Misc : 10
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Feb 05 07:54:40 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1194785	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2387021	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1377111	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1337956	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	634020	51.45	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.90%			
52) D8-Toluene	11.790	98	2729326	46.29	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.58%			
73) Bromofluorobenzene	14.340	95	1349969	54.89	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.840	85	1034	N.D.		
3) Chloromethane	4.422	50	1752	N.D.		
4) Vinyl Chloride	4.598	62	10916	0.76	ug/L #	86
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	5.350	64	1095	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.566	151	1223	N.D.		
11) Acrolein	0.000		0	N.D. d		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	6.631	76	2853	N.D.		
14) 3-chloropropene	7.224	41	1714	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.395	84	1844	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	7.547	96	5981	0.50	ug/L #	75
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.558	43	1800	N.D.		
26) c-1,2-Dichloroethene	8.963	96	73008	5.77	ug/L #	76
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.269	56	1070	N.D.		
30) Chloroform	9.216	83	1033	N.D.		
32) Dibromofluoromethane	9.439	113	634020	51.45	ug/L #	91
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.569	75	1110	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D. d		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.404	117	1203	N.D.		
41) Benzene	9.892	78	1932	N.D.		
42) 1,2-Dichloroethane	10.156	62	1833	N.D.		
43) Trichloroethene	10.456	130	55798	5.06	ug/L #	44
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	10.961	93	1381	N.D.		
46) 1,2-Dichloropropane	10.902	63	1140	N.D.		
47) Bromodichloromethane	10.885	83	1033	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	11.431	63	1203	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4045.D
Acq On : 5 Feb 2021 5:22 am
Operator : KKW
Sample : AE00180-26@10X
Misc : 10
ALS Vial : 43 Sample Multiplier: 1

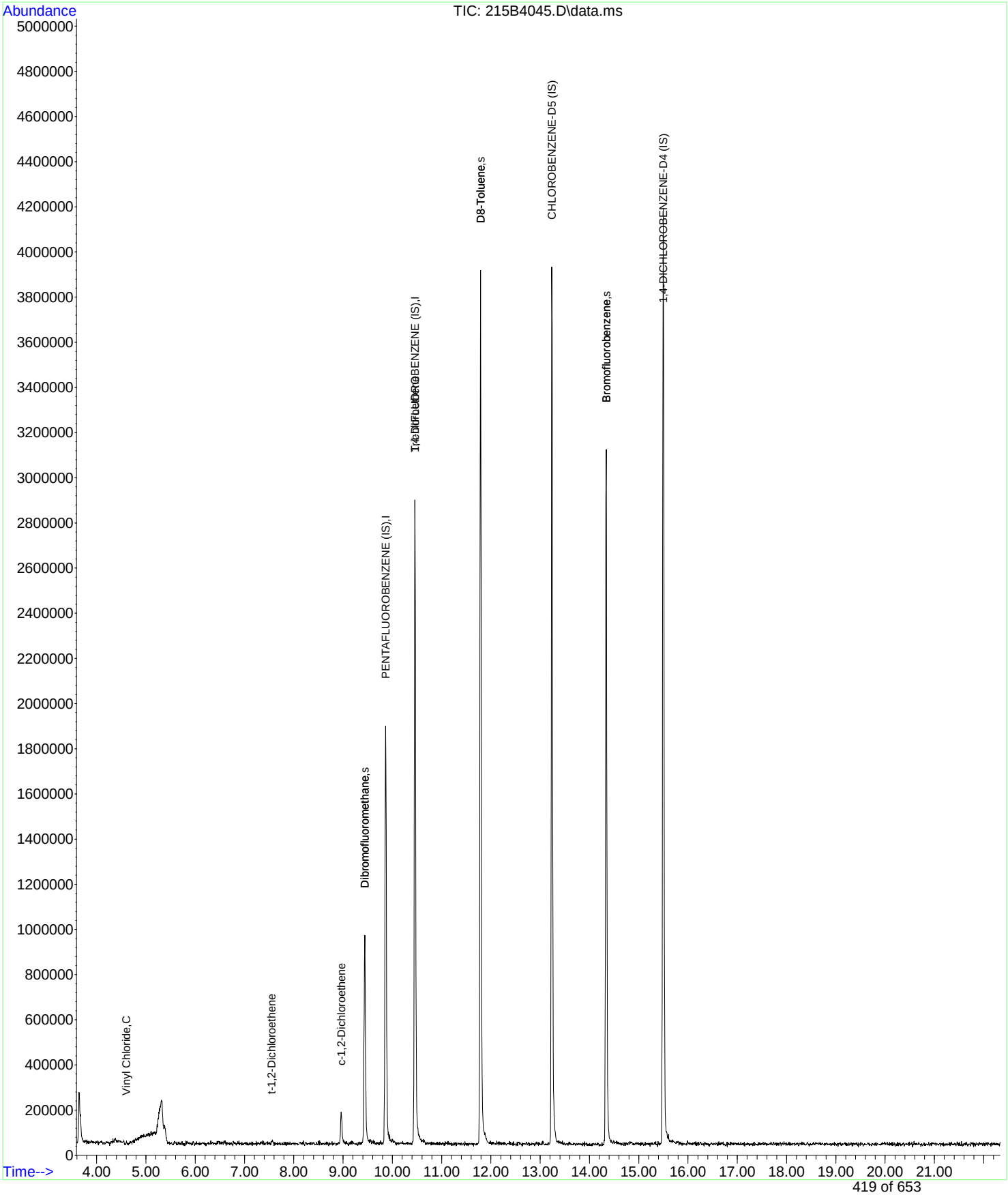
Quant Time: Feb 05 07:54:40 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2729326	46.29 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.842	92	1742	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.242	69	1117	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.935	43	1021	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.235	112	1111	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1349969	54.89 ug/L	84
75) n-Propylbenzene	14.416	91	1030	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.334	83	1981	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	14.369	156	1172	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.509	146	3679	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	3679	N.D.	
90) n-Butylbenzene	15.826	91	1405	N.D.	
91) 1,2-Dichlorobenzene	16.049	146	1356	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4045.D
Acq On : 5 Feb 2021 5:22 am
Operator : KKW
Sample : AE00180-26@10X
Misc : 10
ALS Vial : 43 Sample Multiplier: 1

Quant Time: Feb 05 07:54:40 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4046.D
Acq On : 5 Feb 2021 5:51 am
Operator : KKW
Sample : AE00180-27@5X
Misc : 5
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Feb 05 07:54:43 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.863	168	1251370	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2457069	50.00	ug/L	# 0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1394961	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1361706	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.440	113	646235	50.07	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.14%			
52) D8-Toluene	11.790	98	2790258	45.98	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 91.96%			
73) Bromofluorobenzene	14.340	95	1334131	53.55	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	4.422	50	2108	N.D.		
4) Vinyl Chloride	4.598	62	9997	0.66	ug/L #	31
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	5.479	64	1019	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	6.784	142	3739	0.32	ug/L #	67
13) Carbon Disulfide	6.637	76	1777	N.D.		
14) 3-chloropropene	7.095	41	1461	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.371	84	3500	0.27	ug/L #	46
17) Methyl Acetate	7.418	43	1703	N.D.		
18) t-1,2-Dichloroethene	7.559	96	1723	N.D.		
19) Methyl tert-butyl ether	7.565	73	1191	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.065	45	1026	N.D.		
22) Chloroprene	8.300	88	1142	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.382	43	1260	N.D.		
26) c-1,2-Dichloroethene	8.964	96	12787	0.97	ug/L #	75
27) 2,2-Dichloropropane	9.016	77	1476	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.116	56	1438	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.440	113	646235	50.07	ug/L #	89
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.598	75	1006	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	9.898	78	2717	N.D.		
42) 1,2-Dichloroethane	10.039	62	1462	N.D.		
43) Trichloroethene	10.468	130	13591	1.20	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	10.756	93	1217	N.D.		
46) 1,2-Dichloropropane	11.049	63	1184	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	11.190	69	1363	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4046.D
Acq On : 5 Feb 2021 5:51 am
Operator : KKW
Sample : AE00180-27@5X
Misc : 5
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Feb 05 07:54:43 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

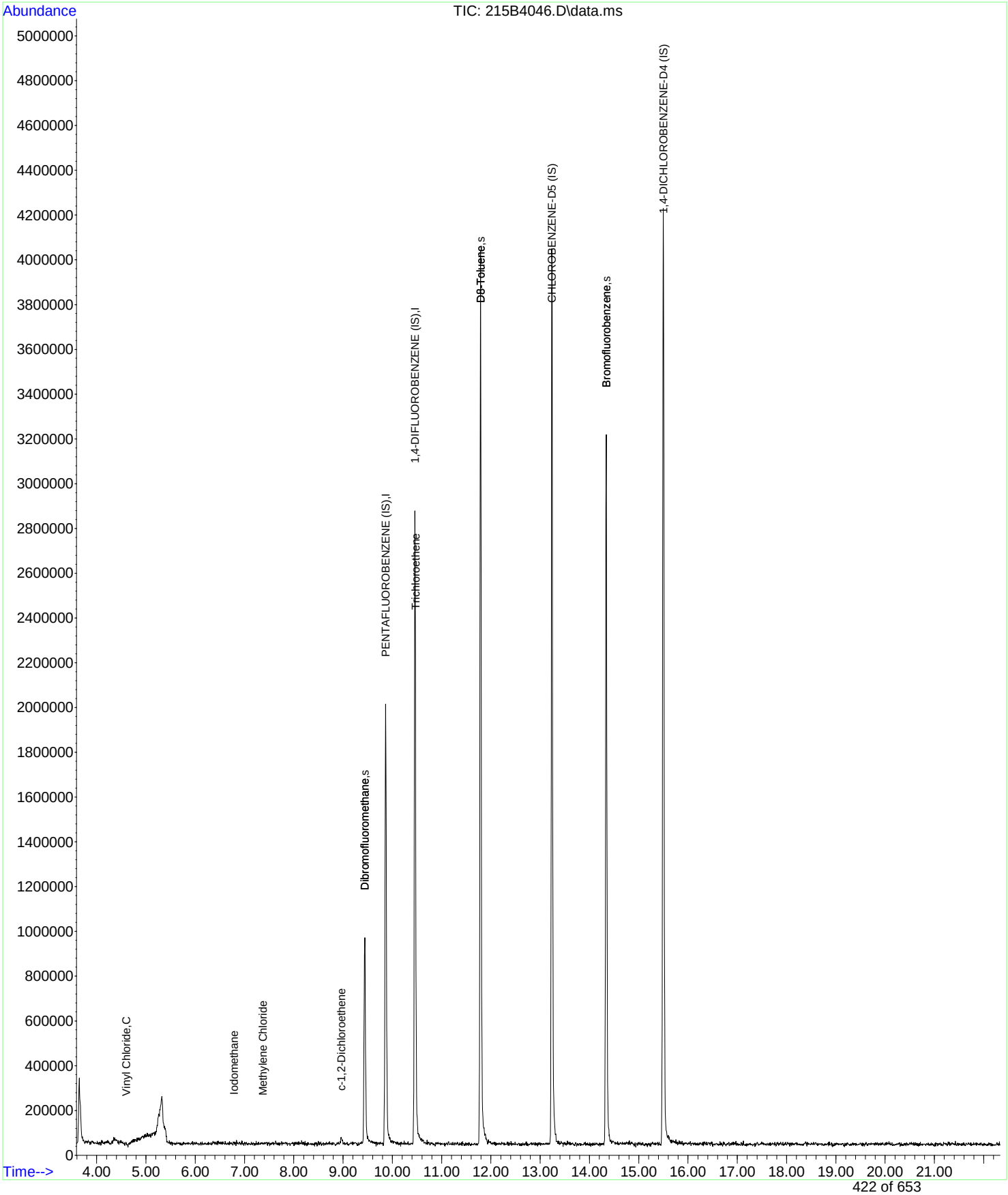
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2786809	45.92 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.825	92	1078	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.248	69	1106	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.871	43	1190	N.D.	
65) Ethylbenzene	13.335	106	1083	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	1083	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1334131	53.55 ug/L	87
75) n-Propylbenzene	14.352	91	5983	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.328	83	1721	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.404	156	1249	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.545	105	1302	N.D.	
86) p-Isopropyltoluene	15.339	119	1519	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.462	146	1021	N.D.	
89) 1,4-Dichlorobenzene	15.527	146	1025	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4046.D
Acq On : 5 Feb 2021 5:51 am
Operator : KKW
Sample : AE00180-27@5X
Misc : 5
ALS Vial : 44 Sample Multiplier: 1

Quant Time: Feb 05 07:54:43 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4047.D
Acq On : 5 Feb 2021 6:21 am
Operator : KKW
Sample : AE00180-28@50X
Misc : 50
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Feb 05 07:54:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	1196717	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2475605	50.00 ug/L	# 0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1386352	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1358758	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.439	113	644132	52.19 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.38%		
52) D8-Toluene	11.790	98	2838958	46.43 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.86%		
73) Bromofluorobenzene	14.340	95	1344485	54.30 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.028	85	1108	N.D.	
3) Chloromethane	4.386	50	1120	N.D.	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.473	64	1055	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.184	59	1234	N.D.	
9) 1,1-Dichloroethene	6.690	96	1295	N.D.	
10) Trichlorotrifluoroethane	6.572	151	149088	21.55 ug/L	96
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	6.790	142	1253	N.D.	
13) Carbon Disulfide	6.584	76	1158	N.D.	
14) 3-chloropropene	7.154	41	1463	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.348	84	1199	N.D.	
17) Methyl Acetate	7.489	43	1661	N.D.	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	7.718	73	1469	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.100	45	1068	N.D.	
22) Chloroprene	8.223	88	1168	N.D.	
23) 1,1-Dichloroethane	8.376	63	1510	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	0.000		0	N.D.	
26) c-1,2-Dichloroethene	8.964	96	24322	1.92 ug/L #	86
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.334	56	1348	N.D.	
30) Chloroform	9.216	83	1427	N.D.	
32) Dibromofluoromethane	9.439	113	644132	52.19 ug/L #	91
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.504	75	1155	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.363	117	1570	N.D.	
41) Benzene	9.886	78	2265	N.D.	
42) 1,2-Dichloroethane	10.209	62	1488	N.D.	
43) Trichloroethene	10.462	130	149287	13.06 ug/L	84
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.761	93	1103	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	10.891	83	1177	N.D.	
48) Methyl Methacrylate	11.214	69	1437	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.784	75	1563	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4047.D
Acq On : 5 Feb 2021 6:21 am
Operator : KKW
Sample : AE00180-28@50X
Misc : 50
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Feb 05 07:54:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

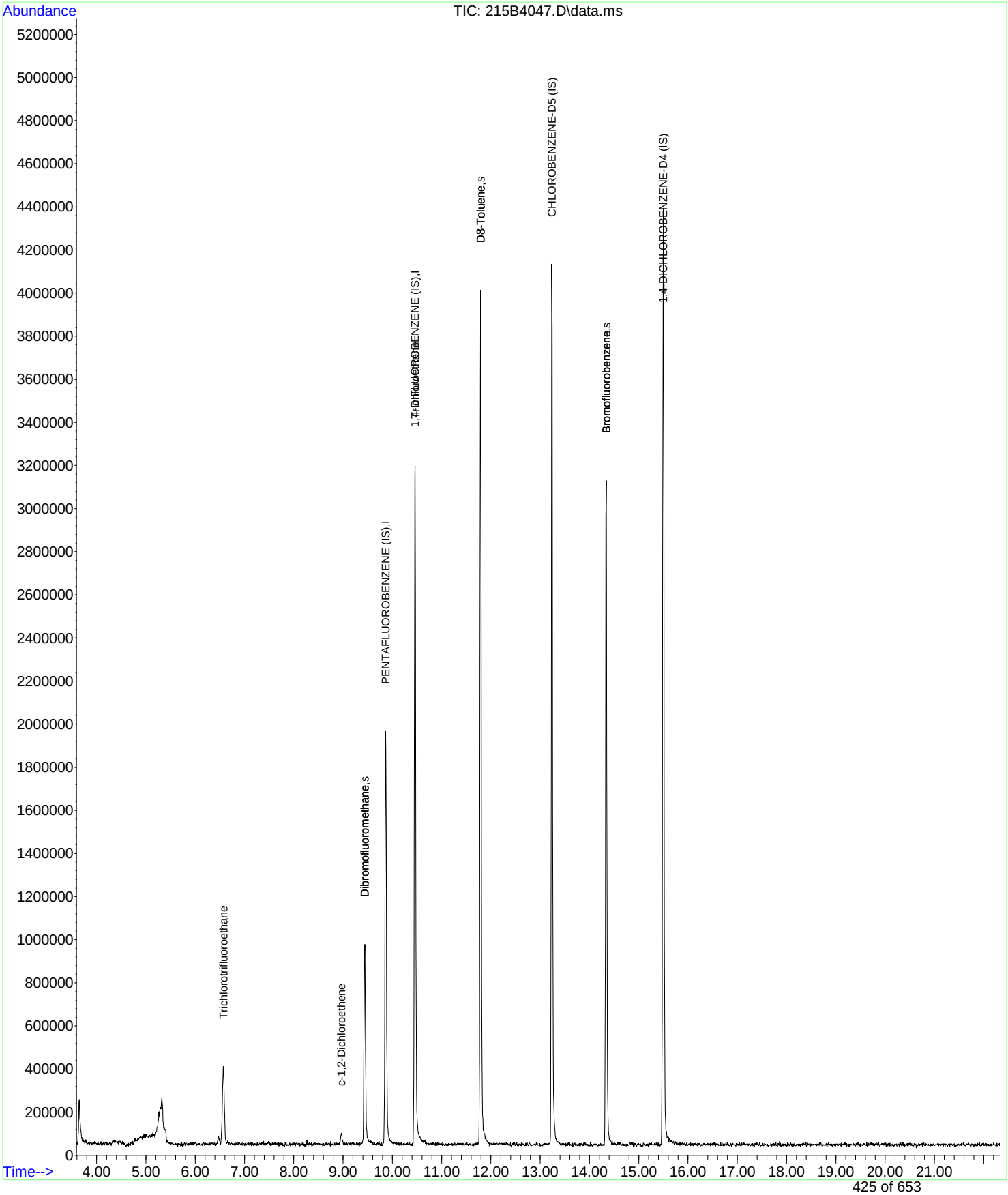
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2836801	46.39 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	1342	N.D.	
57) T-1,3-Dichloropropene	12.266	75	1202	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.242	69	1012	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.877	43	1335	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.846	106	1136	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1344485	54.30 ug/L	86
75) n-Propylbenzene	14.340	91	5251	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.451	83	1069	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	14.304	53	1003	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	1001	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.821	91	1018	N.D.	
84) tert-Butylbenzene	14.915	119	1028	N.D.	
85) 1,3,5-Trimethylbenzene	14.393	105	1012	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.980	105	1001	N.D.	
88) 1,3-Dichlorobenzene	15.485	146	1679	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	1679	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.699	128	1034	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4047.D
Acq On : 5 Feb 2021 6:21 am
Operator : KKW
Sample : AE00180-28@50X
Misc : 50
ALS Vial : 45 Sample Multiplier: 1

Quant Time: Feb 05 07:54:46 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4048.D
Acq On : 5 Feb 2021 6:51 am
Operator : KKW
Sample : AE00180-29@50
Misc : 50
ALS Vial : 46 Sample Multiplier: 1

Quant Time: Feb 05 08:42:41 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	1189515	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2390582	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1377443	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1377681	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.440	113	642978	52.41 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.82%		
52) D8-Toluene	11.790	98	2813787	47.65 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.30%		
73) Bromofluorobenzene	14.340	95	1296135	52.69 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.38%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d	
3) Chloromethane	4.422	50	1678	N.D.	
4) Vinyl Chloride	4.592	62	9655	0.67 ug/L #	15
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.555	96	1627	N.D.	
10) Trichlorotrifluoroethane	6.566	151	132946	19.33 ug/L	97
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D.	
13) Carbon Disulfide	6.631	76	1837	N.D.	
14) 3-chloropropene	7.101	41	1136	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	7.571	43	1123	N.D.	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.088	45	1035	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.370	63	2097	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.605	43	1450	N.D.	
26) c-1,2-Dichloroethene	8.964	96	217187	17.26 ug/L #	79
27) 2,2-Dichloropropane	9.252	77	1467	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.111	56	1159	N.D.	
30) Chloroform	9.228	83	1019	N.D.	
32) Dibromofluoromethane	9.440	113	642978	52.41 ug/L #	91
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.639	75	1038	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.880	41	1160	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.346	117	1330	N.D.	
41) Benzene	9.892	78	2514	N.D.	
42) 1,2-Dichloroethane	10.051	62	1045	N.D.	
43) Trichloroethene	10.462	130	1072016	97.12 ug/L #	79
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	10.926	63	1008	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.743	75	1084	N.D.	

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4048.D
Acq On : 5 Feb 2021 6:51 am
Operator : KKW
Sample : AE00180-29@50
Misc : 50
ALS Vial : 46 Sample Multiplier: 1

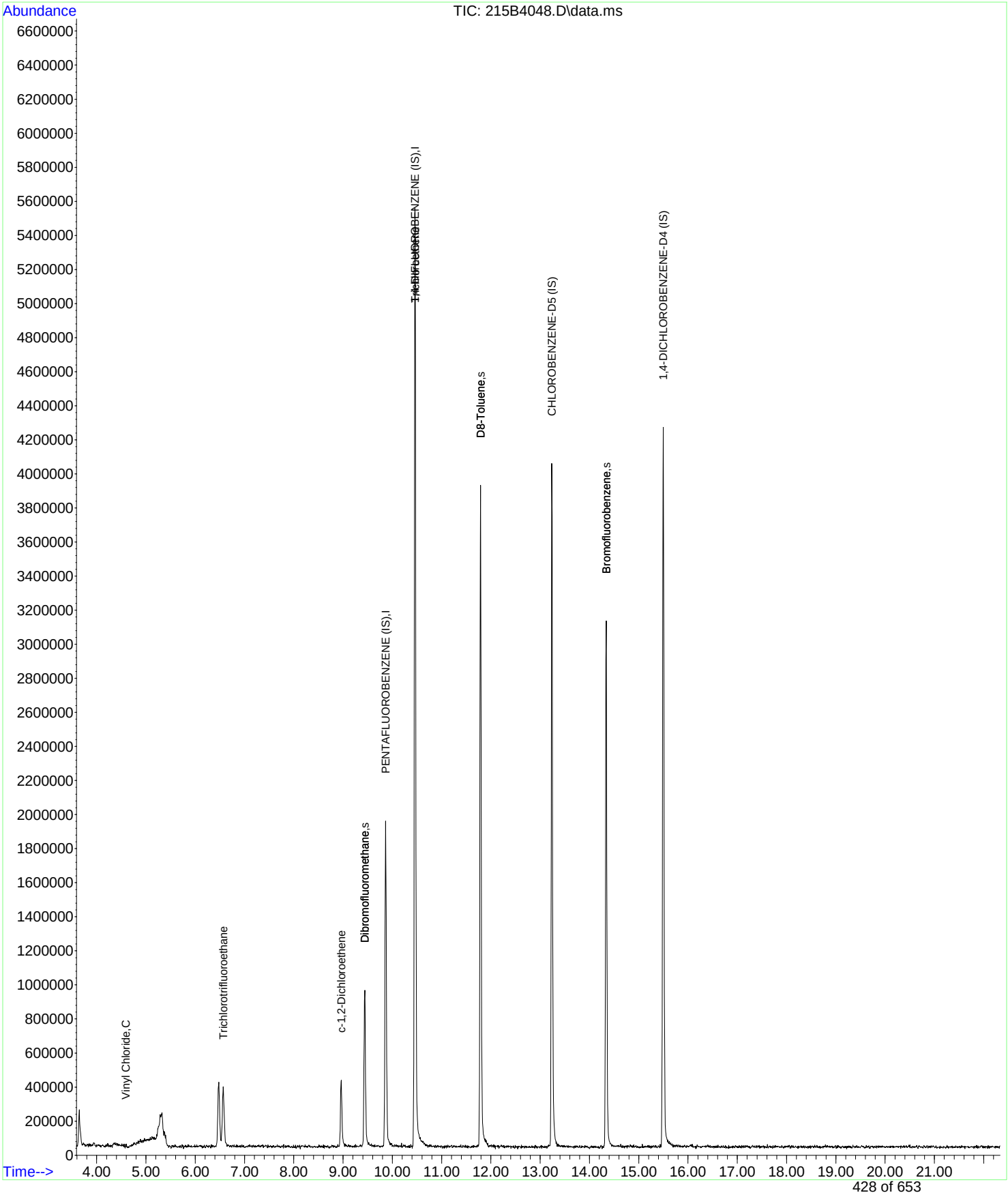
Quant Time: Feb 05 08:42:41 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2811146	47.61 ug/L #	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.778	92	1516	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.207	69	1242	N.D.	
60) 1,1,2-Trichloroethane	12.348	97	1096	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.829	104	1204	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1296135	52.69 ug/L	90
75) n-Propylbenzene	14.346	91	4071	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.481	83	1220	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	14.410	156	1009	N.D.	
81) 1,2,4-Trimethylbenzene	15.121	105	1254	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.121	105	1254	N.D.	
88) 1,3-Dichlorobenzene	15.509	146	2500	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	2500	N.D.	
90) n-Butylbenzene	15.574	91	1154	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020421\
Data File : 215B4048.D
Acq On : 5 Feb 2021 6:51 am
Operator : KKW
Sample : AE00180-29@50
Misc : 50
ALS Vial : 46 Sample Multiplier: 1

Quant Time: Feb 05 08:42:41 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	1433703	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2851329	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1754524	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1532689	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	738306	49.93	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.86%				
52) D8-Toluene	11.790	98	3391722	48.16	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.32%				
73) Bromofluorobenzene	14.340	95	1673473	53.41	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	334457	18.07	ug/L		97
3) Chloromethane	4.410	50	255534	11.99	ug/L		99
4) Vinyl Chloride	4.592	62	283896	16.41	ug/L		94
5) Bromomethane	5.232	94	86776	18.73	ug/L		97
6) Chloroethane	5.444	64	143372	18.84	ug/L		94
7) Trichlorofluoromethane	5.703	101	407834	18.95	ug/L		96
8) Diethyl ether	6.190	59	397942	33.25	ug/L		90
9) 1,1-Dichloroethene	6.537	96	562714	45.46	ug/L	#	72
10) Trichlorotrifluoroethane	6.566	151	363303	43.83	ug/L		96
11) Acrolein	7.030	56	856269	343.96	ug/L		97
12) Iodomethane	6.790	142	3665455	276.11	ug/L	#	86
13) Carbon Disulfide	6.631	76	9172567	226.23	ug/L		96
14) 3-chloropropene	7.207	41	809643	33.10	ug/L	#	83
15) Acetone	7.412	43	541521	160.77	ug/L		98
16) Methylene Chloride	7.348	84	609906	40.64	ug/L	#	67
17) Methyl Acetate	7.530	43	259545	24.66	ug/L	#	87
18) t-1,2-Dichloroethene	7.559	96	603481	42.14	ug/L		82
19) Methyl tert-butyl ether	7.647	73	1440934	39.75	ug/L	#	91
20) Acetonitrile	8.029	41	774007	283.45	ug/L		98
21) Isopropyl ether	8.065	45	1530682	31.81	ug/L	#	86
22) Chloroprene	8.282	88	657491	47.93	ug/L		85
23) 1,1-Dichloroethane	8.323	63	1082919	36.76	ug/L		98
24) Acrylonitrile	8.394	53	1527390	343.33	ug/L		96
25) Vinyl Acetate	8.552	43	5333082	176.69	ug/L	#	91
26) c-1,2-Dichloroethene	8.958	96	697225	45.96	ug/L	#	82
27) 2,2-Dichloropropane	9.087	77	931594	37.17	ug/L		96
28) Bromochloromethane	9.193	128	273966	51.13	ug/L		90
29) Cyclohexane	9.204	56	963836	30.08	ug/L	#	83
30) Chloroform	9.234	83	1150441	40.89	ug/L		95
32) Dibromofluoromethane	9.434	113	738306	49.93	ug/L	#	91
33) 2-Butanone	9.557	72	323883	198.30	ug/L	#	57
34) 1,1,1-Trichloroethane	9.498	97	956455	41.18	ug/L		97
35) 1,1-Dichloropropene	9.616	75	875534	37.05	ug/L		90
36) Propionitrile	9.904	54	683755	339.05	ug/L		95
37) Methacrylonitrile	9.921	41	3227492	324.14	ug/L	#	82
38) Isobutyl Alcohol	9.915	43	760895	631.85	ug/L	#	52
40) Carbon Tetrachloride	9.422	117	764374	35.78	ug/L		91
41) Benzene	9.886	78	2582660	39.62	ug/L		94
42) 1,2-Dichloroethane	10.097	62	812969	34.19	ug/L	#	94
43) Trichloroethene	10.462	130	647520	49.18	ug/L	#	84
44) Methyl cyclohexane	10.462	83	1217454	37.22	ug/L		89
45) Dibromomethane	10.908	93	372606	40.24	ug/L		92
46) 1,2-Dichloropropane	10.996	63	653217	34.50	ug/L		92
47) Bromodichloromethane	11.026	83	891935	42.37	ug/L	#	93
48) Methyl Methacrylate	11.085	69	420391	34.73	ug/L	#	83
49) 1,4-Dioxane	11.208	88	131568	795.96	ug/L		83
50) 2-Chloroethyl vinyl ether	11.496	63	1829991	199.21	ug/L	#	88
51) C-1,3-Dichloropropene	11.619	75	1159418	40.78	ug/L		90

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

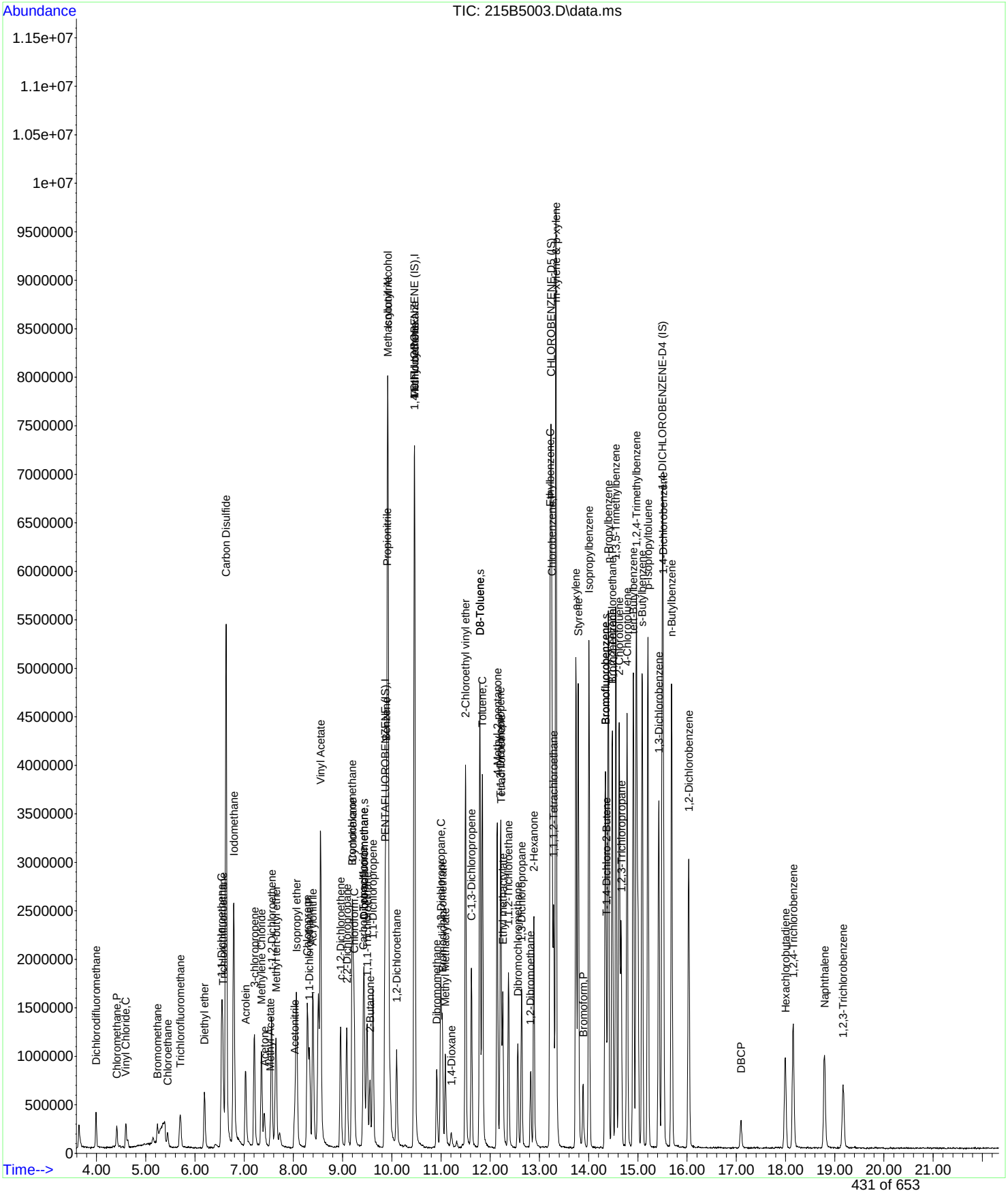
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.790	98	3391722	48.16	ug/L	#	96
54) 4-Methyl-2-pentanone	12.142	100	417218	215.67	ug/L	#	74
56) Toluene	11.837	92	1847159	49.34	ug/L		95
57) T-1,3-Dichloropropene	12.207	75	988578	44.37	ug/L		91
58) Tetrachloroethene	12.219	164	472711	45.90	ug/L		97
59) Ethyl methacrylate	12.254	69	827588	41.53	ug/L		93
60) 1,1,2-Trichloroethane	12.371	97	618265	48.88	ug/L		93
61) Dibromochloromethane	12.559	129	601804	51.65	ug/L	#	98
62) 1,3-Dichloropropane	12.636	76	1072885	45.81	ug/L	#	85
63) 1,2-Dibromoethane	12.818	107	605986	51.47	ug/L		95
64) 2-Hexanone	12.883	43	1458383	169.15	ug/L	#	91
65) Ethylbenzene	13.217	106	1205160	52.97	ug/L	#	86
66) Chlorobenzene	13.253	112	2092217	55.47	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.288	131	655409	58.07	ug/L		96
68) m-xylene & p-xylene	13.335	106	2947159	111.60	ug/L		87
69) o-xylene	13.740	106	1513087	55.87	ug/L		91
70) Styrene	13.787	104	2634865	59.58	ug/L	#	84
71) Bromoform	13.887	173	301466	45.36	ug/L		97
72) Isopropylbenzene	14.005	105	3921706	55.01	ug/L		95
74) Bromofluorobenzene	14.340	95	1673473	53.41	ug/L	#	81
75) n-Propylbenzene	14.398	91	4976619	52.23	ug/L		94
76) 1,1,2,2-Tetrachloroethane	14.481	83	874116	49.45	ug/L		98
77) 1,2,3-Trichloropropane	14.663	61	259161m	40.10	ug/L		
78) T-1,4-Dichloro-2-Butene	14.357	53	252094	36.13	ug/L		98
80) Bromobenzene	14.481	156	816046	52.87	ug/L		84
81) 1,2,4-Trimethylbenzene	14.968	105	3695572	51.50	ug/L		94
82) 2-Chlorotoluene	14.622	91	3052576	50.61	ug/L		93
83) 4-Chlorotoluene	14.780	91	3230275	51.29	ug/L		94
84) tert-Butylbenzene	14.904	119	2920576	53.58	ug/L		89
85) 1,3,5-Trimethylbenzene	14.551	105	3576527	51.45	ug/L		95
86) p-Isopropyltoluene	15.203	119	3714868	54.86	ug/L		93
87) s-Butylbenzene	15.086	105	4285469	52.54	ug/L		97
88) 1,3-Dichlorobenzene	15.427	146	1721324	55.68	ug/L		94
89) 1,4-Dichlorobenzene	15.515	146	1718458	51.85	ug/L		91
90) n-Butylbenzene	15.685	91	3430258	48.72	ug/L		94
91) 1,2-Dichlorobenzene	16.032	146	1525449	52.27	ug/L		94
92) DBCP	17.095	157	101748	42.72	ug/L		94
93) Hexachlorobutadiene	18.000	225	207903	30.46	ug/L		88
94) 1,2,4-Trichlorobenzene	18.153	180	548735	37.46	ug/L		95
95) Naphthalene	18.793	128	1355795	43.70	ug/L	#	91
96) 1,2,3-Trichlorobenzene	19.169	180	308391	35.82	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5004.D
Acq On : 5 Feb 2021 9:25 am
Operator : KKW
Sample : 1B04041-MSD1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 10:16:57 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	1389215	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2814121	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1673313	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1519337	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	751628	52.46	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.92%				
52) D8-Toluene	11.790	98	3368386	48.46	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.92%				
73) Bromofluorobenzene	14.334	95	1596490	53.42	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.84%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	319724	17.83	ug/L		98
3) Chloromethane	4.410	50	253784	12.29	ug/L		98
4) Vinyl Chloride	4.598	62	334371	19.95	ug/L		98
5) Bromomethane	5.238	94	43340	10.03	ug/L	#	84
6) Chloroethane	5.456	64	168321	22.82	ug/L		96
7) Trichlorofluoromethane	5.703	101	453833	21.76	ug/L		95
8) Diethyl ether	6.190	59	201308	17.36	ug/L		92
9) 1,1-Dichloroethene	6.543	96	257641	21.48	ug/L	#	75
10) Trichlorotrifluoroethane	6.572	151	168171	20.94	ug/L		98
11) Acrolein	6.931	56	13341	5.53	ug/L		98
12) Iodomethane	6.784	142	361772	28.12	ug/L	#	86
13) Carbon Disulfide	6.631	76	765845	19.49	ug/L		96
14) 3-chloropropene	7.201	41	341231	14.40	ug/L	#	89
15) Acetone	7.406	43	228868	70.12	ug/L		100
16) Methylene Chloride	7.354	84	291342	20.03	ug/L	#	71
17) Methyl Acetate	7.530	43	121234	11.89	ug/L	#	88
18) t-1,2-Dichloroethene	7.553	96	287477	20.71	ug/L		84
19) Methyl tert-butyl ether	7.641	73	2300253	65.49	ug/L		95
20) Acetonitrile	8.059	41	252780	95.54	ug/L	#	86
21) Isopropyl ether	8.059	45	712336	15.28	ug/L	#	88
22) Chloroprene	8.282	88	263351	19.81	ug/L		89
23) 1,1-Dichloroethane	8.323	63	504540	17.67	ug/L		97
24) Acrylonitrile	8.411	53	111910	25.96	ug/L	#	75
25) Vinyl Acetate	8.558	43	365424	12.49	ug/L	#	92
26) c-1,2-Dichloroethene	8.958	96	301137	20.49	ug/L		85
27) 2,2-Dichloropropane	9.081	77	431563	17.90	ug/L		97
28) Bromochloromethane	9.193	128	127043	24.47	ug/L		96
29) Cyclohexane	9.198	56	817462	26.32	ug/L		94
30) Chloroform	9.234	83	533191	19.56	ug/L		94
32) Dibromofluoromethane	9.439	113	751628	52.46	ug/L	#	89
33) 2-Butanone	9.551	72	135337	86.69	ug/L		79
34) 1,1,1-Trichloroethane	9.492	97	460507	20.46	ug/L		96
35) 1,1-Dichloropropene	9.616	75	429566	18.76	ug/L	#	81
36) Propionitrile	9.909	54	34755	17.79	ug/L	#	1
37) Methacrylonitrile	9.921	41	207005	21.46	ug/L		88
38) Isobutyl Alcohol	9.915	43	228559	195.87	ug/L	#	1
40) Carbon Tetrachloride	9.422	117	400636	19.00	ug/L	#	78
41) Benzene	9.886	78	4090263	63.58	ug/L		93
42) 1,2-Dichloroethane	10.097	62	362610	15.45	ug/L	#	92
43) Trichloroethene	10.462	130	282174	21.72	ug/L	#	94
44) Methyl cyclohexane	10.462	83	734466	22.75	ug/L		93
45) Dibromomethane	10.908	93	159403	17.44	ug/L		96
46) 1,2-Dichloropropane	10.996	63	270939	15.03	ug/L		92
47) Bromodichloromethane	11.020	83	345934	17.58	ug/L		94
48) Methyl Methacrylate	11.085	69	164139	13.74	ug/L		85
49) 1,4-Dioxane	11.220	88	55422	339.73	ug/L	#	81
50) 2-Chloroethyl vinyl ether	11.502	63	1921	0.21	ug/L	#	23
51) C-1,3-Dichloropropene	11.619	75	423827	15.96	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5004.D
Acq On : 5 Feb 2021 9:25 am
Operator : KKW
Sample : 1B04041-MSD1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 10:16:57 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

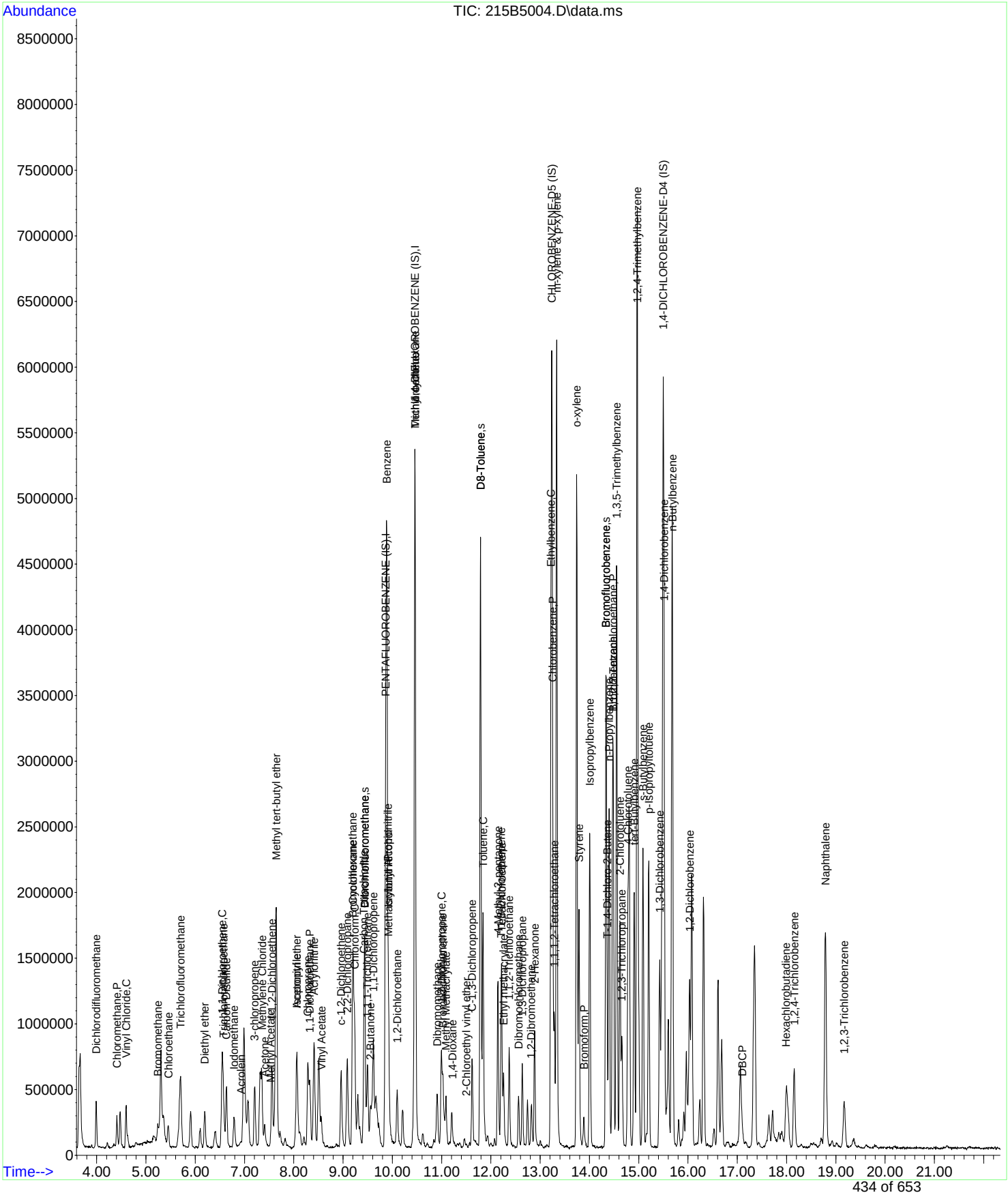
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.790	98	3364605	48.41	ug/L		97
54) 4-Methyl-2-pentanone	12.142	100	163829	85.81	ug/L	#	71
56) Toluene	11.842	92	835929	23.41	ug/L		93
57) T-1,3-Dichloropropene	12.207	75	387408	18.23	ug/L		91
58) Tetrachloroethene	12.219	164	208331	21.21	ug/L		96
59) Ethyl methacrylate	12.254	69	333569	17.55	ug/L		98
60) 1,1,2-Trichloroethane	12.371	97	253104	20.98	ug/L		93
61) Dibromochloromethane	12.559	129	231409	22.49	ug/L	#	90
62) 1,3-Dichloropropane	12.636	76	415548	18.60	ug/L	#	82
63) 1,2-Dibromoethane	12.818	107	233685	20.81	ug/L		94
64) 2-Hexanone	12.888	43	555788	67.59	ug/L	#	95
65) Ethylbenzene	13.217	106	677911	31.24	ug/L	#	89
66) Chlorobenzene	13.253	112	843173	23.44	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.288	131	245578	22.82	ug/L		94
68) m-xylene & p-xylene	13.335	106	1827512	72.56	ug/L		89
69) o-xylene	13.740	106	1548962	59.97	ug/L		90
70) Styrene	13.787	104	981774	23.28	ug/L	#	85
71) Bromoform	13.887	173	110556	19.27	ug/L		94
72) Isopropylbenzene	14.005	105	1811521	26.65	ug/L		96
74) Bromofluorobenzene	14.334	95	1596490	53.42	ug/L	#	82
75) n-Propylbenzene	14.398	91	2315658	25.48	ug/L		96
76) 1,1,2,2-Tetrachloroethane	14.481	83	323334	19.18	ug/L		96
77) 1,2,3-Trichloropropane	14.651	61	99010m	16.06	ug/L		
78) T-1,4-Dichloro-2-Butene	14.357	53	84953	12.77	ug/L	#	66
80) Bromobenzene	14.481	156	313939	20.52	ug/L		81
81) 1,2,4-Trimethylbenzene	14.968	105	4741803	66.66	ug/L		95
82) 2-Chlorotoluene	14.622	91	1165857	19.50	ug/L		92
83) 4-Chlorotoluene	14.780	91	1450300	23.23	ug/L		98
84) tert-Butylbenzene	14.910	119	1176024	21.76	ug/L		89
85) 1,3,5-Trimethylbenzene	14.551	105	2829270	41.06	ug/L		95
86) p-Isopropyltoluene	15.203	119	1565169	23.32	ug/L		94
87) s-Butylbenzene	15.086	105	1859162	23.00	ug/L		98
88) 1,3-Dichlorobenzene	15.427	146	700671	22.86	ug/L		93
89) 1,4-Dichlorobenzene	15.515	146	698407	21.26	ug/L		95
90) n-Butylbenzene	15.685	91	1772948	25.40	ug/L	#	96
91) 1,2-Dichlorobenzene	16.032	146	633191	21.89	ug/L		95
92) DBCP	17.101	157	47438	20.76	ug/L		86
93) Hexachlorobutadiene	17.988	225	89934	13.78	ug/L	#	89
94) 1,2,4-Trichlorobenzene	18.159	180	245246	17.15	ug/L	#	88
95) Naphthalene	18.787	128	2262473	71.66	ug/L	#	92
96) 1,2,3-Trichlorobenzene	19.169	180	163097	19.69	ug/L		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5004.D
Acq On : 5 Feb 2021 9:25 am
Operator : KKW
Sample : 1B04041-MSD1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Feb 05 10:16:57 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA64833

Instrument: OVGCMS2

Calibration ID: 2102033

Printed: 2/8/2021 8:52:10AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA64833-TUN1	QC		1		A0I0903			
AA64833-CCV1	QC		2		A1B0569	A0K0862		
1B05008-BS1	QC		3			A0K0862		
1B05008-MS1	QC		4			A0K0862		
1B05008-MSD1	QC		5			A0K0862		
1B05008-BLK1	QC		6			A0K0862		
AE00865-01	624.1 TTO	C	7			A0K0862		BatchQC
AE00865-01	8260D	C	8			A0K0862		Full List VOCs
AE00865-01	60D TCL SOM01.2 CLP-LIK	C	9			A0K0862		BatchQC
AE00180-15RE1	60D TCL SOM01.2 CLP-LIK	C	10			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@250x overdilute Re-extract added 1
AE00180-28RE1	60D TCL SOM01.2 CLP-LIK	C	11			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@10x overdilute Re-extract added 2/
AE00180-03RE1	60D TCL SOM01.2 CLP-LIK	C	12			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@1x overdilute Re-extract added 2/5
AE00180-05RE1	60D TCL SOM01.2 CLP-LIK	C	13			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@1x xylenes high in CCV Re-extrac
AE00180-06RE1	60D TCL SOM01.2 CLP-LIK	C	14			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@1x xylenes high in CCV Re-extrac
AE00180-26RE1	60D TCL SOM01.2 CLP-LIK	C	15			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@1x overdilute Re-extract added 2/5
AE00180-27RE1	60D TCL SOM01.2 CLP-LIK	C	16			A0K0862	Tetra Tech NUS, Inc. (TE015)	rr@1x overdilute Re-extract added 2/5
AE00782-04RE1	8260D	C	17			A0K0862		RR@1X OVERDILUTED Re-extract a
AE00819-02	624.1 TTO	D	18			A0K0862		screen on 2/4/21 kg Custom list - lowe

Samples Loaded By Date

Data Processed By Date

Sequence Name: C:\HPCHEM\1\SEQUENCE\212B5.S
Comment:
Operator: KG
Data Path: C:\HPchem\1\DATA\020521\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212B5001	8260S	TUNE 1
2	Sample	2	212B5002	8260S	CCV1
3	Sample	3	212B5003	8260S	BS1
4	Sample	4	212B5004	8260S	1B05008-MS1
5	Sample	4	212B5005	8260S	1B05008-MSD1
6	Sample	5	212B5006	8260S	RINSE
7	Sample	6	212B5007	8260S	RINSE
8	Sample	7	212B5008	8260S	RINSE
9	Sample	8	212B5009	8260S	1B05008-BLK1
10	Sample	9	212B5010	8260S	AE00865-01
11	Sample	10	212B5011	8260S	AE00180-15RE1@250X
12	Sample	11	212B5012	8260S	AE00180-28RE1@10X Report Freon from original > KH 2/8/21
13	Sample	12	212B5013	8260S	AE00180-03RE1 Report C1,2DCE from original
14	Sample	13	212B5014	8260S	AE00180-05RE1
15	Sample	14	212B5015	8260S	AE00180-06RE1
16	Sample	15	212B5016	8260S	AE00180-26RE1
17	Sample	16	212B5017	8260S	AE00180-27RE1
18	Sample	17	212B5018	8260S	AE00782-04RE1
19	Sample	18	212B5019	8260S	AE00819-02@20X

PREPARATION BENCH SHEET

Printed: 2/5/2021 10:19:26AM

Analysis
624.1 TTO [EPA 624.1]
8260D [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

1B05008
ENCO Orlando

Surrogate Solution
__ A0I0902 8260 surr working

Prepared using: EPA 5030B_MS

Spiking Solution
A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1B05008-BLK1		Blank		QC			5	5			1	
1B05008-BS1		LCS		QC			5	5	A1A1251 A1A0898	2 2	1	
1B05008-MS1		Matrix Spike [AE00865-01] B		QC	<2	N	5	5	A1A1251 A1A0898	2 2	1	
1B05008-MSD1		Matrix Spike Dup [AE00865-01] B		QC	<2	N	5	5	A1A1251 A1A0898	2 2	1	
AE00180-03RE1	C	HMPN-MW0041-035.0-20210129 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@1x overdilute Re-extract added 2/5/2021 by KKW
AE00180-05RE1	C	HMPN-MW0037-010.0-20210129 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@1x xylenes high in CCV Re-extract added 2/5/2021 by KKW
AE00180-06RE1	C	HMPN-MW0038-020.0-20210129 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@1x xylenes high in CCV Re-extract added 2/5/2021 by KKW
AE00180-15RE1	C	HMPN-MW0033-047.5-20210129 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@250x overdilute Re-extract added 2/5/2021 by KKW
AE00180-26RE1	C	HMPN-MW0016-010.0-20210201 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@1x overdilute Re-extract added 2/5/2021 by KKW
AE00180-27RE1	C	HMPN-MW0045-030.0-20210201 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@1x overdilute Re-extract added 2/5/2021 by KKW
AE00180-28RE1	C	HMPN-MW0002-035.0-20210201 C[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	rr@10x overdilute Re-extract added 2/5/2021 by KKW
AE00782-04RE1		MW-11AR C[MS37	10-Feb-21	8260D	<2	N	5	5			1	RR@1X OVERDILUTED Re-extract added 2/5/2021 by KG
AE00819-02		BE00370-02 (Waste Water (Grab) C[MS37	09-Feb-21	624.1 TTO	<2	N	5	5			1	screen on 2/4/21 kg Custom list - lowest possible dilution, JAJ 12/3/20.
AE00865-01		MW-35 C[MS37		8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	Added for BatchQC in: 1B05008
AE00865-01		MW-35 C[MS37		624.1 TTO	<2	N	5	5			1	Added for BatchQC in: 1B05008
AE00865-01		MW-35 C[MS37	11-Feb-21	8260D	<2	N	5	5			1	Full List VOCs

PREPARATION BENCH SHEET

Printed: 2/5/2021 10:19:26AM

1B05008

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution	
___ A0I0902	8260 surr working

Spiking Solution	
A1A0898	8260 2nd source Mega Mix
A1A1251	8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 2

Start Date 2/5/21

StopDate

Instrument ID OV GCMS2

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A0B1371	Residual Chlorine Strips (Potassium Iodide S	102916
A0L0697	P&T Anti-Foam working solution	N/A

Samples Prepared By — Date 2/5/21

Samples Prepared By — Date 2/5/21

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5001.D Vial: 1
Acq On : 5 Feb 2021 7:51 am Operator: KG
Sample : TUNE 1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 8:08 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 13:38:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	250425	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.03	114	457308	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	226544	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	122994	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	135794	52.50	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.00%			
54) D8-Toluene	13.25	98	393797	48.79	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.58%			
75) Bromofluorobenzene	15.75	95	159113	48.57	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 97.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	2118	0.41	ug/kg#	70
3) Chloromethane	6.40	50	5274	1.05	ug/kg	83
4) Vinyl Chloride	6.59	62	3258	0.71	ug/kg#	1
5) Bromomethane	7.26	96	2091	1.28	ug/kg#	76
6) Chloroethane	7.47	64	1661	0.74	ug/kg#	45
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	9.27	43	9753	17.63	ug/kg	98
11) 1,1-Dichloroethene	8.53	96	1415	0.53	ug/kg	87
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	8.64	76	68229	6.79	ug/kg	99
16) Methylene Chloride	9.23	84	783	0.26	ug/kg#	56
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	10.11	53	2280	1.70	ug/kg#	52
19) T-1,2-Dichloroethene	9.46	96	1115	0.38	ug/kg	85
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	1264	0.39	ug/kg	95
22) 1,1-Dichloroethane	10.14	63	1112	0.19	ug/kg#	55
23) Vinyl Acetate	10.33	43	1019	0.14	ug/kg#	78
24) Chloroprene	10.13	88	694	0.26	ug/kg#	43
25) 2-Butanone	11.17	72	1151	5.92	ug/kg#	1
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	11.48	67	1101	1.22	ug/kg	70
29) Chloroform	10.93	83	1036	0.19	ug/kg#	1
31) Dibromofluoromethane	11.09	113	135794	52.50	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	11.31	75	2532	0.60	ug/kg	88
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	10.98	56	1143	0.24	ug/kg#	21
39) Methyl Cyclohexane	12.09	55	710	0.19	ug/kg#	70
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	11.55	78	5002	0.45	ug/kg#	64
43) Isobutyl Alcohol	11.47	43	779	3.84	ug/kg#	1
44) Trichloroethene	12.06	130	1006	0.33	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	14.26	43	781	0.53	ug/kg#	1

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020521\212B5001.D Vial: 1
Acq On : 5 Feb 2021 7:51 am Operator: KG
Sample : TUNE 1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 8:08 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 13:38:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

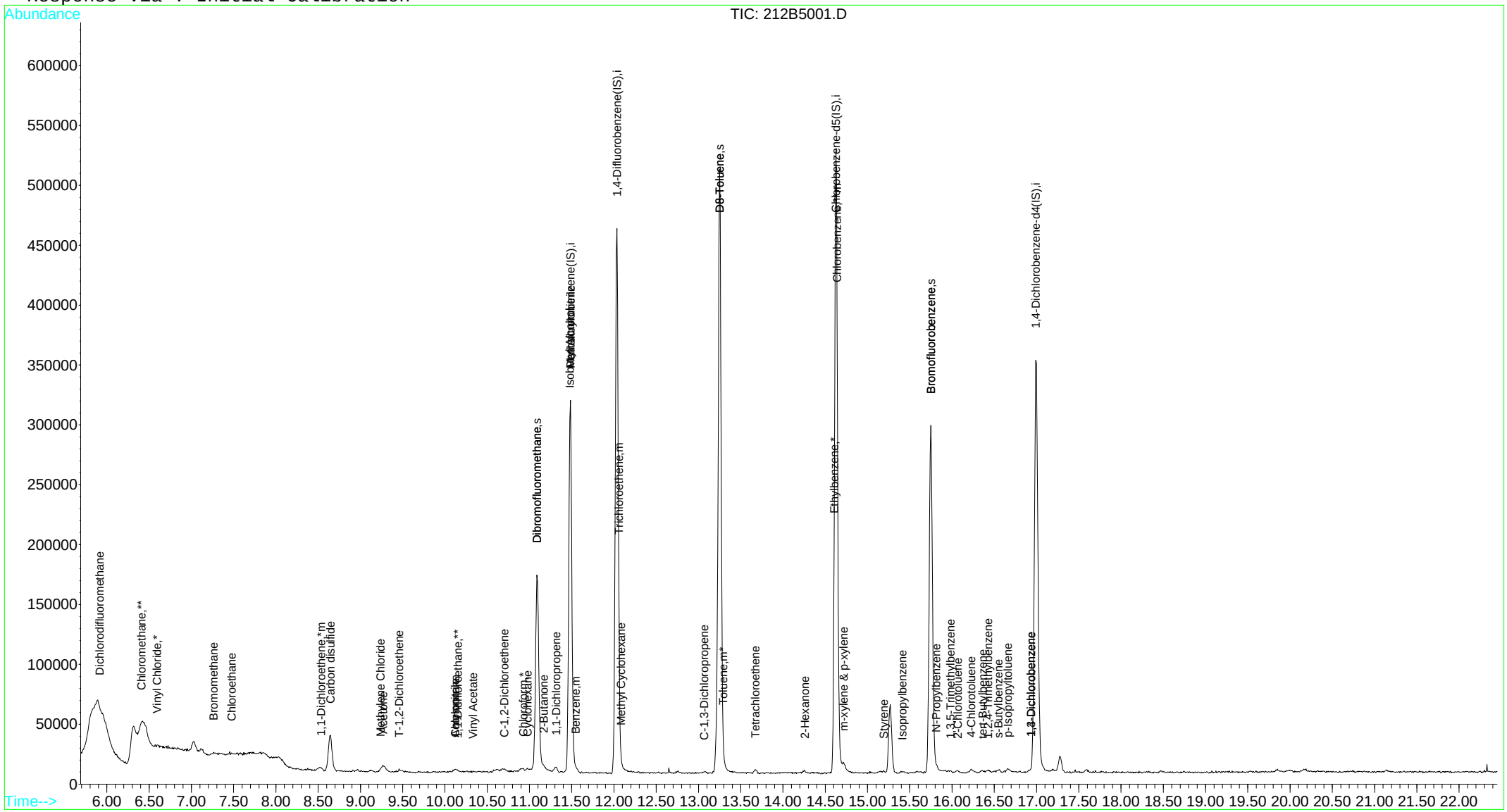
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	697	0.13 ug/kg#	27
55) D8-Toluene	13.25	98	393797	48.79 ug/kg	92
57) Toluene	13.30	92	1638	0.25 ug/kg#	85
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	13.67	164	774	0.40 ug/kg	85
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	14.65	112	1572	0.22 ug/kg#	1
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	14.60	106	817	0.22 ug/kg#	48
68) m-xylene & p-xylene	14.72	106	1889	0.43 ug/kg	88
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	15.18	104	1225	0.16 ug/kg#	50
72) Isopropylbenzene	15.41	105	1429	0.13 ug/kg#	49
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	159113	48.57 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	15.82	91	3115	0.25 ug/kg#	54
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	15.97	105	1184	0.18 ug/kg#	26
82) 2-Chlorotoluene	16.07	91	1550	0.27 ug/kg#	40
83) 4-Chlorotoluene	16.23	91	2214	0.36 ug/kg	93
84) 1,2,4-Trimethylbenzene	16.43	105	1408	0.22 ug/kg#	29
85) s-Butylbenzene	16.55	105	1756	0.22 ug/kg	63
86) tert-Butylbenzene	16.36	119	888	0.16 ug/kg#	64
87) p-Isopropyltoluene	16.67	119	2373	0.35 ug/kg#	75
88) 1,3-Dichlorobenzene	16.93	146	1334	0.36 ug/kg	87
89) 1,4-Dichlorobenzene	16.93	146	1334	0.36 ug/kg	87
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5001.D Vial: 1
Acq On : 5 Feb 2021 7:51 am Operator: KG
Sample : TUNE 1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 8:08 2021 Quant Results File: 020421.RES

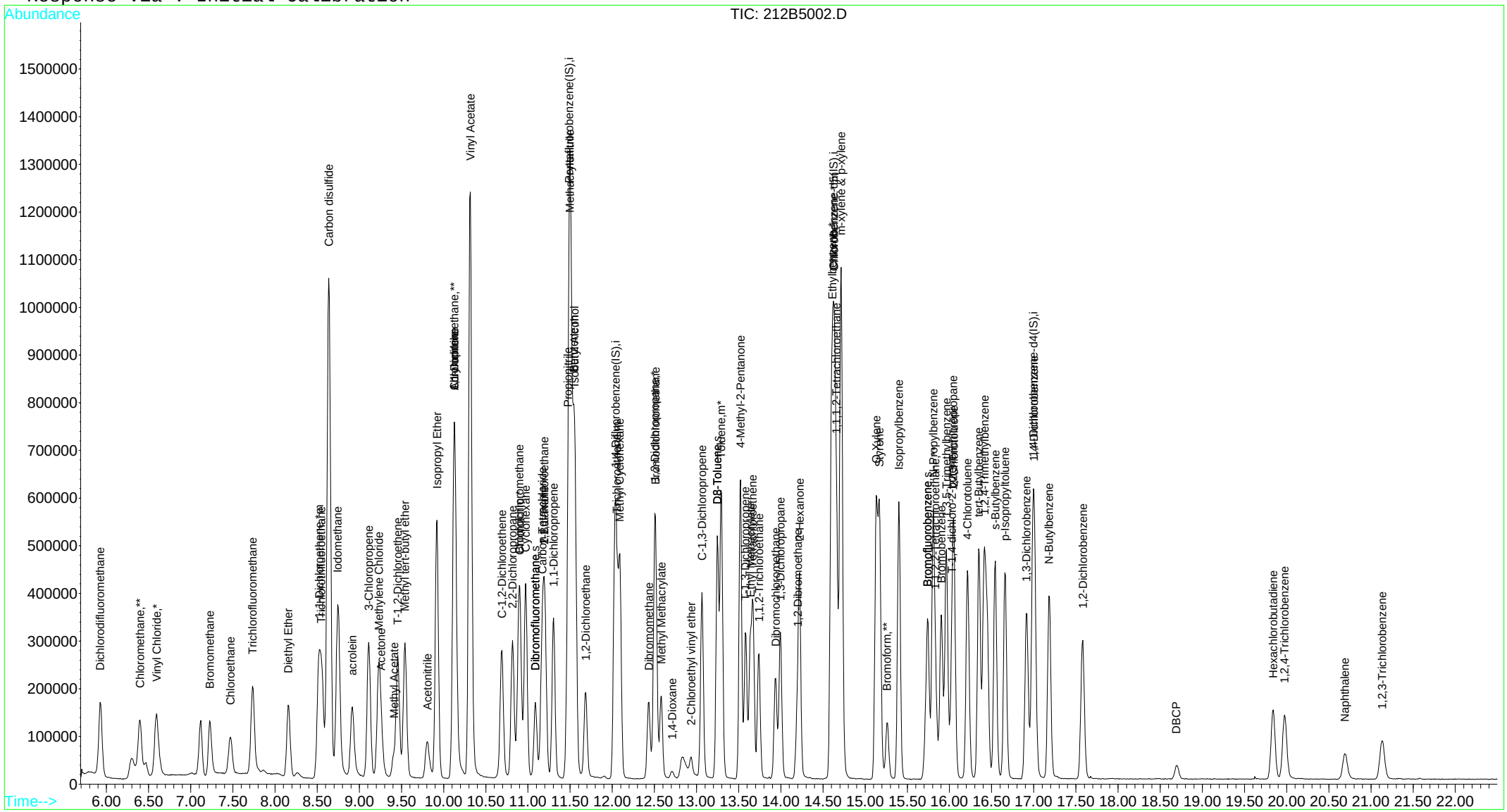
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5002.D Vial: 2
Acq On : 5 Feb 2021 8:20 am Operator: KG
Sample : CCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 8:43 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5002.D Vial: 2
Acq On : 5 Feb 2021 8:20 am Operator: KG
Sample : CCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 8:43 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 13:38:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	244296	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.03	114	457783	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.62	82	236601	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	162124	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	129261	51.22	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.44%			
54) D8-Toluene	13.25	98	397427	49.18	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 98.36%			
75) Bromofluorobenzene	15.75	95	164133	47.97	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 95.94%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	241117	47.74	ug/kg	99
3) Chloromethane	6.40	50	225068	45.91	ug/kg	100
4) Vinyl Chloride	6.60	62	224378	50.31	ug/kg	96
5) Bromomethane	7.22	96	107384	67.37	ug/kg	94
6) Chloroethane	7.47	64	122657	56.33	ug/kg	99
7) Trichlorofluoromethane	7.73	101	234920	52.53	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	135048	52.62	ug/kg	99
9) acrolein	8.92	56	222138	547.16	ug/kg	99
10) Acetone	9.26	43	150808	279.47	ug/kg	99
11) 1,1-Dichloroethene	8.52	96	125817	48.70	ug/kg	98
12) 3-Chloropropene	9.11	76	89988	44.61	ug/kg	99
13) Acetonitrile	9.81	41	145771	605.62	ug/kg	99
14) Iodomethane	8.74	142	701709	220.70	ug/kg	99
15) Carbon disulfide	8.64	76	2357547	240.62	ug/kg	100
16) Methylene Chloride	9.23	84	145838	49.90	ug/kg	98
17) Methyl tert-butyl ether	9.54	73	337884	52.67	ug/kg	99
18) Acrylonitrile	10.13	53	676209	517.13	ug/kg	99
19) T-1,2-Dichloroethene	9.46	96	141559	48.82	ug/kg	98
20) Isopropyl Ether	9.92	45	696851	53.43	ug/kg	99
21) C-1,2-Dichloroethene	10.69	96	159576	51.01	ug/kg	100
22) 1,1-Dichloroethane	10.13	63	292110	52.10	ug/kg	100
23) Vinyl Acetate	10.32	43	1918326	272.37	ug/kg	100
24) Chloroprene	10.12	88	135537	51.26	ug/kg	94
25) 2-Butanone	11.19	72	52132	274.91	ug/kg	96
26) Propionitrile	11.47	54	141401	535.43	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	223032	49.43	ug/kg	100
28) Methacrylonitrile	11.50	67	452009	515.30	ug/kg	97
29) Chloroform	10.91	83	271439	51.23	ug/kg	96
31) Dibromofluoromethane	11.09	113	129261	51.22	ug/kg	100
32) Bromochloromethane	10.89	128	79050	53.04	ug/kg	99
33) 1,1,1-Trichloroethane	11.20	97	202935	51.06	ug/kg	100
34) 1,1-Dichloropropene	11.31	75	208534	50.53	ug/kg	99
35) Diethyl Ether	8.16	59	123532	51.09	ug/kg	99
36) Methyl Acetate	9.41	74	17432	51.02	ug/kg	97
37) Cyclohexane	10.97	56	248222	52.98	ug/kg	98
39) Methyl Cyclohexane	12.09	55	183725	49.41	ug/kg	97
40) Carbon Tetrachloride	11.16	117	208858	50.48	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	191100	49.27	ug/kg	99
42) Benzene	11.55	78	546317	49.09	ug/kg	99
43) Isobutyl Alcohol	11.56	43	207049	1019.73	ug/kg	100
44) Trichloroethene	12.06	130	148704	49.17	ug/kg	99
45) 1,2-Dichloropropane	12.51	63	173611	50.33	ug/kg	100
46) Methyl Methacrylate	12.58	100	31683	53.12	ug/kg	98
47) 1,4-Dioxane	12.70	88	13970	1343.03	ug/kg	98
48) Bromodichloromethane	12.52	83	210325	50.64	ug/kg	99
49) Dibromomethane	12.43	93	89083	51.03	ug/kg	98
50) 4-Methyl-2-Pentanone	13.52	100	70621	268.22	ug/kg	98
51) 2-Chloroethyl vinyl ether	12.94	63	17919	170.92	ug/kg#	100
52) 2-Hexanone	14.22	43	398531	272.48	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5002.D Vial: 2
Acq On : 5 Feb 2021 8:20 am Operator: KG
Sample : CCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 8:43 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 13:38:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	279183	50.39 ug/kg	99
55) D8-Toluene	13.25	98	397427	49.18 ug/kg	92
57) Toluene	13.30	92	331863	48.47 ug/kg	99
58) Ethyl Methacrylate	13.64	69	164811	49.56 ug/kg	98
59) T-1,3-Dichloropropene	13.58	75	217631	49.18 ug/kg	98
60) 1,1,2-Trichloroethane	13.74	97	107354	48.41 ug/kg	99
61) 1,3-Dichloropropane	14.00	76	224770	49.35 ug/kg	98
62) Tetrachloroethene	13.67	164	101058	49.41 ug/kg	99
63) Dibromochloromethane	13.94	129	153146	49.96 ug/kg	100
64) 1,2-Dibromoethane	14.19	107	118943	51.41 ug/kg	99
65) Chlorobenzene	14.64	112	357108	48.12 ug/kg	100
66) 1,1,1,2-Tetrachloroethane	14.67	131	144277	49.93 ug/kg#	72
67) Ethylbenzene	14.60	106	186411	48.57 ug/kg	97
68) m-xylene & p-xylene	14.72	106	428377	93.62 ug/kg	100
69) O-Xylene	15.13	106	222957	47.71 ug/kg	100
70) Bromoform	15.27	173	74873	51.32 ug/kg	99
71) Styrene	15.17	104	390299	50.13 ug/kg	99
72) Isopropylbenzene	15.40	105	554106	47.96 ug/kg	100
73) 1,2,3-Trichloropropane	16.04	75	129614	47.67 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	114653	50.43 ug/kg	100
76) Bromofluorobenzene	15.75	95	164133	47.97 ug/kg#	72
77) T-1,4-dichloro-2-butene	16.02	53	26703	43.55 ug/kg#	81
78) N-Propylbenzene	15.81	91	630781	48.01 ug/kg	100
80) Bromobenzene	15.90	156	136846	49.93 ug/kg	98
81) 1,3,5-Trimethylbenzene	15.96	105	400817	47.33 ug/kg	99
82) 2-Chlorotoluene	16.05	91	374551	48.60 ug/kg	100
83) 4-Chlorotoluene	16.21	91	392339	48.64 ug/kg	99
84) 1,2,4-Trimethylbenzene	16.41	105	407211	47.46 ug/kg	98
85) s-Butylbenzene	16.54	105	498523	48.02 ug/kg	100
86) tert-Butylbenzene	16.35	119	364823	49.11 ug/kg	100
87) p-Isopropyltoluene	16.66	119	420725	46.69 ug/kg	99
88) 1,3-Dichlorobenzene	16.92	146	232195	48.13 ug/kg	99
89) 1,4-Dichlorobenzene	17.01	146	230824	47.68 ug/kg	99
90) 1,2-Dichlorobenzene	17.58	146	204217	49.41 ug/kg	99
91) N-Butylbenzene	17.18	91	363049	47.18 ug/kg	100
92) DBCP	18.69	75	13483	48.26 ug/kg	99
93) Naphthalene	20.70	128	102529	47.40 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	87873	49.37 ug/kg	99
95) Hexachlorobutadiene	19.84	225	52232	49.14 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.13	180	58147	50.35 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5003.D Vial: 3
Acq On : 5 Feb 2021 8:55 am Operator: KG
Sample : BS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:18 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 13:38:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	244069	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.03	114	453646	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.62	82	228231	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	154910	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	133480	52.95	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.90%			
54) D8-Toluene	13.25	98	400236	49.98	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 99.96%			
75) Bromofluorobenzene	15.75	95	163157	49.44	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 98.88%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	88057	17.45	ug/kg	99
3) Chloromethane	6.40	50	94849	19.37	ug/kg	99
4) Vinyl Chloride	6.59	62	95744	21.49	ug/kg	88
5) Bromomethane	7.24	96	30754	19.31	ug/kg	97
6) Chloroethane	7.47	64	54280	24.95	ug/kg	99
7) Trichlorofluoromethane	7.74	101	102162	22.86	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	63414	24.73	ug/kg	100
9) acrolein	8.93	56	34095	84.06	ug/kg	98
10) Acetone	9.27	43	68367	126.81	ug/kg	96
11) 1,1-Dichloroethene	8.52	96	57168	22.15	ug/kg	99
12) 3-Chloropropene	9.12	76	40233	19.96	ug/kg	100
13) Acetonitrile	9.82	41	25696	106.86	ug/kg	93
14) Iodomethane	8.75	142	40104	13.96	ug/kg	99
15) Carbon disulfide	8.64	76	246192	25.15	ug/kg	100
16) Methylene Chloride	9.23	84	67088	22.98	ug/kg	98
17) Methyl tert-butyl ether	9.55	73	145464	22.70	ug/kg	98
18) Acrylonitrile	10.12	53	140459	107.52	ug/kg#	76
19) T-1,2-Dichloroethene	9.46	96	66334	22.90	ug/kg	99
20) Isopropyl Ether	9.92	45	305615	23.45	ug/kg	99
21) C-1,2-Dichloroethene	10.69	96	70083	22.42	ug/kg	99
22) 1,1-Dichloroethane	10.13	63	134246	23.97	ug/kg	100
23) Vinyl Acetate	10.32	43	164314	23.35	ug/kg	97
24) Chloroprene	10.12	88	58965	22.32	ug/kg	15
25) 2-Butanone	11.19	72	30361	160.25	ug/kg	55
26) Propionitrile	11.47	54	5810	22.02	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	100420	22.28	ug/kg	99
28) Methacrylonitrile	11.51	67	20246	23.10	ug/kg	80
29) Chloroform	10.91	83	120988	22.85	ug/kg	99
31) Dibromofluoromethane	11.09	113	133480	52.95	ug/kg	100
32) Bromochloromethane	10.89	128	34603	23.24	ug/kg	97
33) 1,1,1-Trichloroethane	11.21	97	92435	23.28	ug/kg	98
34) 1,1-Dichloropropene	11.31	75	93919	22.78	ug/kg	99
35) Diethyl Ether	8.16	59	56725	23.48	ug/kg	100
36) Methyl Acetate	9.41	74	7714	22.60	ug/kg	98
37) Cyclohexane	10.97	56	121853	26.03	ug/kg	97
39) Methyl Cyclohexane	12.09	55	85423	23.18	ug/kg	98
40) Carbon Tetrachloride	11.17	117	93043	22.69	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	81132	21.11	ug/kg	98
42) Benzene	11.55	78	250495	22.71	ug/kg#	65
43) Isobutyl Alcohol	11.57	43	58270	289.60	ug/kg#	1
44) Trichloroethene	12.05	130	66587	22.22	ug/kg	95
45) 1,2-Dichloropropane	12.51	63	74035	21.66	ug/kg	100
46) Methyl Methacrylate	12.58	100	12850	21.74	ug/kg	99
47) 1,4-Dioxane	12.72	88	5637	546.86	ug/kg	97
48) Bromodichloromethane	12.52	83	86028	20.90	ug/kg	100
49) Dibromomethane	12.44	93	36186	20.92	ug/kg	98
50) 4-Methyl-2-Pentanone	13.52	100	28175	107.99	ug/kg	95
51) 2-Chloroethyl vinyl ether	12.94	63	4808	46.28	ug/kg	100
52) 2-Hexanone	14.22	43	152887	105.48	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5003.D Vial: 3
Acq On : 5 Feb 2021 8:55 am Operator: KG
Sample : BS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:18 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 13:38:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

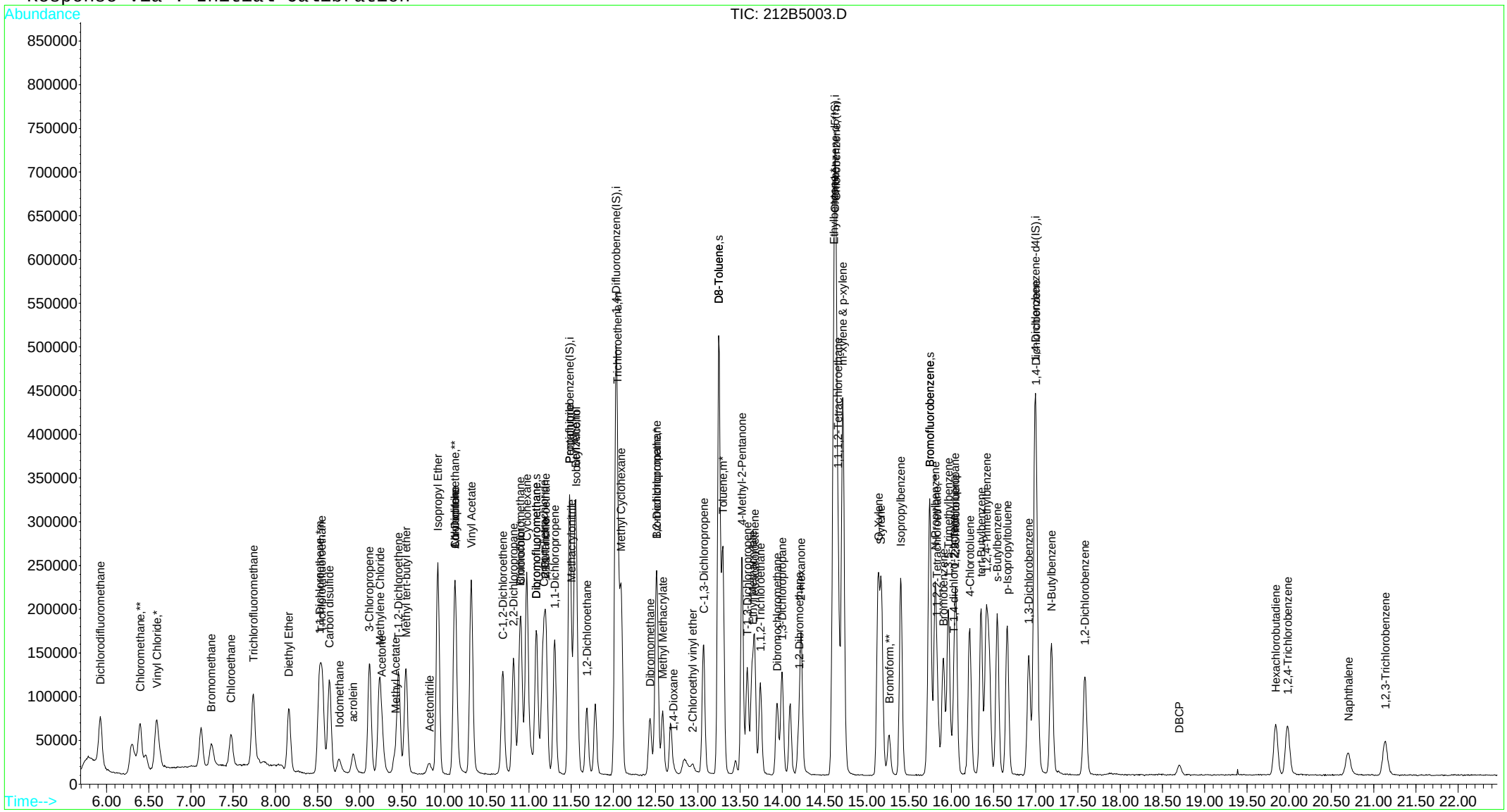
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	109114	19.88	ug/kg	99
55) D8-Toluene	13.25	98	400236	49.98	ug/kg	93
57) Toluene	13.30	92	137259	20.78	ug/kg	99
58) Ethyl Methacrylate	13.64	69	66303	20.67	ug/kg	99
59) T-1,3-Dichloropropene	13.59	75	87931	20.60	ug/kg	99
60) 1,1,2-Trichloroethane	13.74	97	43055	20.13	ug/kg	99
61) 1,3-Dichloropropane	14.00	76	87939	20.02	ug/kg	99
62) Tetrachloroethene	13.67	164	42342	21.46	ug/kg	98
63) Dibromochloromethane	13.94	129	59492	20.12	ug/kg	100
64) 1,2-Dibromoethane	14.19	107	46735	20.94	ug/kg	99
65) Chlorobenzene	14.64	112	144046	20.12	ug/kg	98
66) 1,1,1,2-Tetrachloroethane	14.67	131	56074	20.12	ug/kg#	2
67) Ethylbenzene	14.60	106	72626	19.62	ug/kg	99
68) m-xylene & p-xylene	14.72	106	171703	38.90	ug/kg	99
69) O-Xylene	15.13	106	86769	19.25	ug/kg	100
70) Bromoform	15.27	173	28280	20.09	ug/kg	99
71) Styrene	15.17	104	152725	20.33	ug/kg	99
72) Isopropylbenzene	15.40	105	216035	19.39	ug/kg	100
73) 1,2,3-Trichloropropane	16.04	75	47907	18.27	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	44029	20.08	ug/kg	100
76) Bromofluorobenzene	15.75	95	163157	49.44	ug/kg#	78
77) T-1,4-dichloro-2-butene	16.02	53	7018	11.87	ug/kg#	5
78) N-Propylbenzene	15.81	91	244215	19.27	ug/kg	100
80) Bromobenzene	15.91	156	53183	20.31	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.97	105	158327	19.56	ug/kg	100
82) 2-Chlorotoluene	16.06	91	147283	20.00	ug/kg	100
83) 4-Chlorotoluene	16.22	91	151845	19.70	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.42	105	158316	19.31	ug/kg	99
85) s-Butylbenzene	16.54	105	197914	19.95	ug/kg	100
86) tert-Butylbenzene	16.35	119	141807	19.98	ug/kg	99
87) p-Isopropyltoluene	16.66	119	164938	19.16	ug/kg	99
88) 1,3-Dichlorobenzene	16.92	146	90192	19.57	ug/kg	98
89) 1,4-Dichlorobenzene	17.01	146	89259	19.30	ug/kg	99
90) 1,2-Dichlorobenzene	17.58	146	78745	19.94	ug/kg	99
91) N-Butylbenzene	17.19	91	140768	19.15	ug/kg	99
92) DBCP	18.69	75	5455	20.43	ug/kg	98
93) Naphthalene	20.70	128	49982	26.13	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	37196	21.87	ug/kg	99
95) Hexachlorobutadiene	19.84	225	20281	19.97	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.14	180	27562	24.98	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5003.D Vial: 3
Acq On : 5 Feb 2021 8:55 am Operator: KG
Sample : BS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:18 2021 Quant Results File: 020421.RES

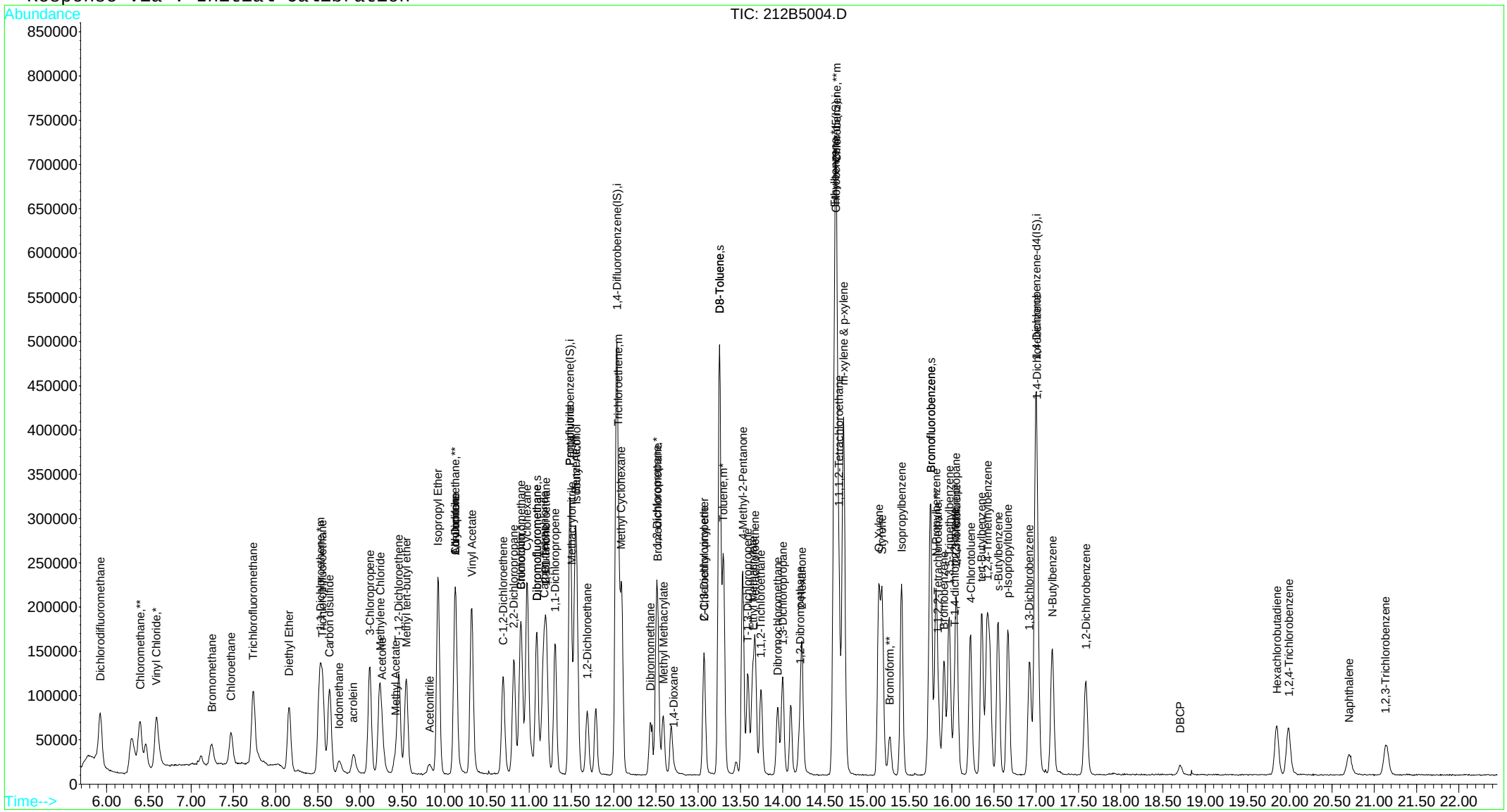
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5004.D Vial: 4
Acq On : 5 Feb 2021 9:35 am Operator: KG
Sample : 1B05008-MS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 10:07 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5004.D Vial: 4
Acq On : 5 Feb 2021 9:35 am Operator: KG
Sample : 1B05008-MS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 10:07 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	243922	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.03	114	453297	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.63	82	230097	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	156245	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	131772	52.30	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.60%			
54) D8-Toluene	13.25	98	383517	47.93	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 95.86%			
75) Bromofluorobenzene	15.75	95	159518	47.94	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 95.88%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	89080	17.67	ug/kg	99
3) Chloromethane	6.40	50	97642	19.95	ug/kg	98
4) Vinyl Chloride	6.59	62	97004	21.78	ug/kg	96
5) Bromomethane	7.24	96	26504	16.65	ug/kg	95
6) Chloroethane	7.47	64	52396	24.10	ug/kg	99
7) Trichlorofluoromethane	7.74	101	103556	23.19	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	62003	24.20	ug/kg	99
9) acrolein	8.93	56	36898	91.03	ug/kg	95
10) Acetone	9.26	43	60277	111.87	ug/kg	97
11) 1,1-Dichloroethene	8.52	96	54761	21.23	ug/kg	98
12) 3-Chloropropene	9.12	76	38075	21.25	ug/kg	99
13) Acetonitrile	9.82	41	23602	98.21	ug/kg	91
14) Iodomethane	8.76	142	34010	11.86	ug/kg	99
15) Carbon disulfide	8.64	76	219877	22.48	ug/kg	99
16) Methylene Chloride	9.24	84	62255	21.33	ug/kg	96
17) Methyl tert-butyl ether	9.55	73	129311	20.19	ug/kg	99
18) Acrylonitrile	10.12	53	133906	102.56	ug/kg#	75
19) T-1,2-Dichloroethene	9.45	96	63342	21.88	ug/kg	98
20) Isopropyl Ether	9.92	45	284310	21.83	ug/kg	98
21) C-1,2-Dichloroethene	10.69	96	65948	21.11	ug/kg	99
22) 1,1-Dichloroethane	10.13	63	127075	22.70	ug/kg	99
23) Vinyl Acetate	10.32	43	148569	21.13	ug/kg	98
24) Chloroprene	10.13	88	57209	21.67	ug/kg	13
25) 2-Butanone	11.19	72	27562	145.56	ug/kg	55
26) Propionitrile	11.49	54	5116	19.40	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	100943	22.41	ug/kg	98
28) Methacrylonitrile	11.51	67	18598	21.23	ug/kg	78
29) Chloroform	10.91	83	113693	21.49	ug/kg	99
31) Dibromofluoromethane	11.09	113	131772	52.30	ug/kg	100
32) Bromochloromethane	10.89	128	31669	21.28	ug/kg	98
33) 1,1,1-Trichloroethane	11.21	97	88864	22.39	ug/kg	99
34) 1,1-Dichloropropene	11.30	75	91002	22.09	ug/kg	99
35) Diethyl Ether	8.16	59	53096	21.99	ug/kg	100
36) Methyl Acetate	9.41	74	7324	21.47	ug/kg#	92
37) Cyclohexane	10.97	56	119405	25.52	ug/kg	96
39) Methyl Cyclohexane	12.09	55	84118	22.84	ug/kg	98
40) Carbon Tetrachloride	11.17	117	90383	22.06	ug/kg	98
41) 1,2-Dichloroethane	11.69	62	77494	20.18	ug/kg	99
42) Benzene	11.54	78	234573	21.29	ug/kg#	65
43) Isobutyl Alcohol	11.57	43	46503	231.30	ug/kg#	1
44) Trichloroethene	12.06	130	62719	20.94	ug/kg	94
45) 1,2-Dichloropropane	12.50	63	67943	19.89	ug/kg	100
46) Methyl Methacrylate	12.59	100	11706	19.82	ug/kg	93
47) 1,4-Dioxane	12.72	88	5291	513.69	ug/kg	95
48) Bromodichloromethane	12.53	83	79741	19.39	ug/kg	99
49) Dibromomethane	12.43	93	32720	18.93	ug/kg	99
50) 4-Methyl-2-Pentanone	13.53	100	26307	100.90	ug/kg	97
51) 2-Chloroethyl vinyl ether	13.06	63	1049	10.11	ug/kg#	100
52) 2-Hexanone	14.23	43	139372	96.23	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5004.D Vial: 4
Acq On : 5 Feb 2021 9:35 am Operator: KG
Sample : 1B05008-MS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 10:07 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	102158	18.62	ug/kg	98
55) D8-Toluene	13.25	98	383517	47.93	ug/kg	92
57) Toluene	13.30	92	130843	19.65	ug/kg	99
58) Ethyl Methacrylate	13.64	69	62256	19.25	ug/kg	100
59) T-1,3-Dichloropropene	13.58	75	83277	19.35	ug/kg	98
60) 1,1,2-Trichloroethane	13.74	97	39900	18.50	ug/kg	98
61) 1,3-Dichloropropane	14.00	76	80758	18.23	ug/kg	98
62) Tetrachloroethene	13.68	164	41168	20.70	ug/kg	99
63) Dibromochloromethane	13.94	129	55026	18.46	ug/kg	100
64) 1,2-Dibromoethane	14.20	107	42877	19.06	ug/kg	100
65) Chlorobenzene	14.64	112	136542	18.92	ug/kg	97
66) 1,1,1,2-Tetrachloroethane	14.67	131	52559	18.71	ug/kg#	1
67) Ethylbenzene	14.61	106	69770	18.69	ug/kg	99
68) m-xylene & p-xylene	14.72	106	164228	36.91	ug/kg	98
69) O-Xylene	15.14	106	81443	17.92	ug/kg	99
70) Bromoform	15.26	173	26652	18.78	ug/kg	99
71) Styrene	15.18	104	143622	18.97	ug/kg	98
72) Isopropylbenzene	15.41	105	205939	18.33	ug/kg	100
73) 1,2,3-Trichloropropane	16.04	75	45275	17.12	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	41034	18.56	ug/kg	100
76) Bromofluorobenzene	15.75	95	159518	47.94	ug/kg#	78
77) T-1,4-dichloro-2-butene	16.03	53	9980	16.74	ug/kg	90
78) N-Propylbenzene	15.82	91	234868	18.38	ug/kg	100
80) Bromobenzene	15.91	156	49669	18.80	ug/kg	97
81) 1,3,5-Trimethylbenzene	15.97	105	150222	18.40	ug/kg	99
82) 2-Chlorotoluene	16.06	91	139289	18.75	ug/kg	100
83) 4-Chlorotoluene	16.23	91	143752	18.49	ug/kg	100
84) 1,2,4-Trimethylbenzene	16.42	105	150910	18.25	ug/kg	98
85) s-Butylbenzene	16.55	105	191599	19.15	ug/kg	100
86) tert-Butylbenzene	16.36	119	137249	19.17	ug/kg	99
87) p-Isopropyltoluene	16.66	119	157246	18.11	ug/kg	98
88) 1,3-Dichlorobenzene	16.92	146	86164	18.53	ug/kg	99
89) 1,4-Dichlorobenzene	17.02	146	83554	17.91	ug/kg	98
90) 1,2-Dichlorobenzene	17.59	146	74257	18.64	ug/kg	99
91) N-Butylbenzene	17.19	91	136037	18.34	ug/kg	99
92) DBCP	18.70	75	5091	18.91	ug/kg	96
93) Naphthalene	20.70	128	44145	23.14	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	34729	20.25	ug/kg	99
95) Hexachlorobutadiene	19.85	225	19748	19.28	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.14	180	25073	22.53	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5005.D Vial: 4
Acq On : 5 Feb 2021 10:04 am Operator: KG
Sample : 1B05008-MSD1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 10:26 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	237657	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	440198	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	222229	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	147097	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	125233	51.01	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.02%			
54) D8-Toluene	13.25	98	378787	48.75	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.50%			
75) Bromofluorobenzene	15.74	95	151802	47.24	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 94.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	84925	17.29	ug/kg	99
3) Chloromethane	6.39	50	94209	19.76	ug/kg	99
4) Vinyl Chloride	6.59	62	91946	21.19	ug/kg	83
5) Bromomethane	7.24	96	26819	17.30	ug/kg	99
6) Chloroethane	7.47	64	51422	24.27	ug/kg	99
7) Trichlorofluoromethane	7.73	101	98380	22.61	ug/kg	97
8) Trichlorotrifluoroethane	8.55	101	59486	23.83	ug/kg	99
9) acrolein	8.92	56	29988	75.93	ug/kg	99
10) Acetone	9.26	43	49670	94.62	ug/kg	100
11) 1,1-Dichloroethene	8.52	96	52005	20.69	ug/kg	97
12) 3-Chloropropene	9.11	76	34873	19.98	ug/kg	94
13) Acetonitrile	9.82	41	18357	78.40	ug/kg	85
14) Iodomethane	8.74	142	45037	16.09	ug/kg	98
15) Carbon disulfide	8.64	76	200844	21.07	ug/kg	100
16) Methylene Chloride	9.23	84	59184	20.82	ug/kg	97
17) Methyl tert-butyl ether	9.54	73	110918	17.77	ug/kg	99
18) Acrylonitrile	10.11	53	124934	98.21	ug/kg#	74
19) T-1,2-Dichloroethene	9.46	96	60363	21.40	ug/kg	99
20) Isopropyl Ether	9.92	45	265671	20.94	ug/kg	98
21) C-1,2-Dichloroethene	10.69	96	63757	20.95	ug/kg	99
22) 1,1-Dichloroethane	10.13	63	122022	22.37	ug/kg	100
23) Vinyl Acetate	10.32	43	128220	18.71	ug/kg	97
24) Chloroprene	10.11	88	53667	20.86	ug/kg	13
25) 2-Butanone	11.19	72	23029	124.83	ug/kg	58
26) Propionitrile	11.47	54	4671	18.18	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	93069	21.20	ug/kg	97
28) Methacrylonitrile	11.51	67	15793	18.51	ug/kg	79
29) Chloroform	10.90	83	109182	21.18	ug/kg	99
31) Dibromofluoromethane	11.09	113	125233	51.01	ug/kg	100
32) Bromochloromethane	10.89	128	29352	20.25	ug/kg	99
33) 1,1,1-Trichloroethane	11.20	97	85183	22.03	ug/kg	98
34) 1,1-Dichloropropene	11.31	75	86986	21.67	ug/kg	100
35) Diethyl Ether	8.16	59	47697	20.28	ug/kg	99
36) Methyl Acetate	9.42	74	6277	18.88	ug/kg#	92
37) Cyclohexane	10.97	56	113799	24.97	ug/kg	97
39) Methyl Cyclohexane	12.09	55	79153	22.14	ug/kg	99
40) Carbon Tetrachloride	11.17	117	85597	21.51	ug/kg	100
41) 1,2-Dichloroethane	11.68	62	69187	18.55	ug/kg	98
42) Benzene	11.54	78	224616	20.99	ug/kg#	65
43) Isobutyl Alcohol	11.56	43	38831	198.88	ug/kg#	1
44) Trichloroethene	12.06	130	60101	20.67	ug/kg	95
45) 1,2-Dichloropropane	12.50	63	65341	19.70	ug/kg	99
46) Methyl Methacrylate	12.58	100	10210	17.80	ug/kg	97
47) 1,4-Dioxane	12.72	88	4063	406.21	ug/kg	98
48) Bromodichloromethane	12.52	83	76223	19.09	ug/kg	98
49) Dibromomethane	12.43	93	29842	17.78	ug/kg	98
50) 4-Methyl-2-Pentanone	13.52	100	21998	86.89	ug/kg	100
51) 2-Chloroethyl vinyl ether	13.08	63	970	9.62	ug/kg#	100
52) 2-Hexanone	14.22	43	120298	85.53	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5005.D Vial: 4
Acq On : 5 Feb 2021 10:04 am Operator: KG
Sample : 1B05008-MSD1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 10:26 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

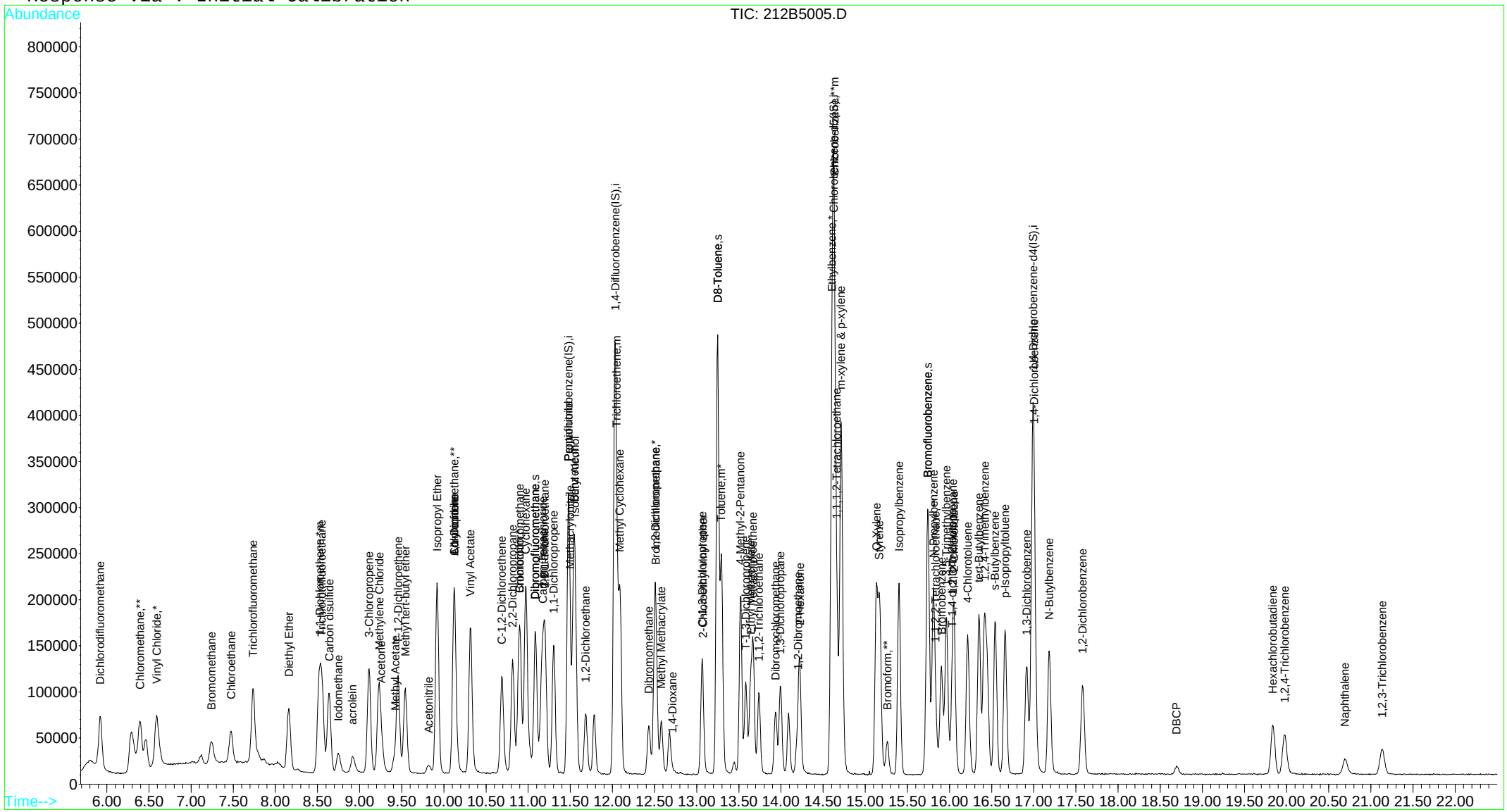
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	92770	17.41 ug/kg	97
55) D8-Toluene	13.25	98	378787	48.75 ug/kg	92
57) Toluene	13.29	92	125299	19.48 ug/kg	99
58) Ethyl Methacrylate	13.64	69	56082	17.95 ug/kg	97
59) T-1,3-Dichloropropene	13.58	75	73047	17.57 ug/kg	98
60) 1,1,2-Trichloroethane	13.74	97	35062	16.83 ug/kg	98
61) 1,3-Dichloropropane	14.00	76	72726	17.00 ug/kg	98
62) Tetrachloroethene	13.67	164	39144	20.38 ug/kg	99
63) Dibromochloromethane	13.93	129	48981	17.01 ug/kg	100
64) 1,2-Dibromoethane	14.19	107	38007	17.49 ug/kg	99
65) Chlorobenzene	14.64	112	128681	18.46 ug/kg	97
66) 1,1,1,2-Tetrachloroethane	14.67	131	49465	18.23 ug/kg#	1
67) Ethylbenzene	14.60	106	66703	18.50 ug/kg	99
68) m-xylene & p-xylene	14.72	106	155469	36.17 ug/kg	100
69) O-Xylene	15.13	106	77917	17.75 ug/kg	100
70) Bromoform	15.26	173	23055	16.82 ug/kg	98
71) Styrene	15.17	104	134379	18.38 ug/kg	99
72) Isopropylbenzene	15.40	105	196691	18.13 ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	38360	15.02 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	34973	16.38 ug/kg	100
76) Bromofluorobenzene	15.74	95	151802	47.24 ug/kg#	78
77) T-1,4-dichloro-2-butene	16.02	53	5897	10.24 ug/kg#	24
78) N-Propylbenzene	15.81	91	225348	18.26 ug/kg	100
80) Bromobenzene	15.90	156	45935	18.47 ug/kg	95
81) 1,3,5-Trimethylbenzene	15.96	105	143106	18.62 ug/kg	99
82) 2-Chlorotoluene	16.05	91	132868	19.00 ug/kg	99
83) 4-Chlorotoluene	16.21	91	136407	18.64 ug/kg	99
84) 1,2,4-Trimethylbenzene	16.41	105	143145	18.39 ug/kg	98
85) s-Butylbenzene	16.54	105	183001	19.43 ug/kg	100
86) tert-Butylbenzene	16.35	119	130464	19.36 ug/kg	99
87) p-Isopropyltoluene	16.66	119	151194	18.49 ug/kg	100
88) 1,3-Dichlorobenzene	16.92	146	78639	17.97 ug/kg	99
89) 1,4-Dichlorobenzene	17.01	146	78821	17.95 ug/kg	99
90) 1,2-Dichlorobenzene	17.58	146	66789	17.81 ug/kg	99
91) N-Butylbenzene	17.18	91	125301	17.95 ug/kg	99
92) DBCP	18.69	75	4230	16.69 ug/kg	91
93) Naphthalene	20.70	128	32297	18.32 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	28726	17.79 ug/kg	99
95) Hexachlorobutadiene	19.84	225	18573	19.26 ug/kg	98
96) 1,2,3-Trichlorobenzene	21.14	180	19826	18.92 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5005.D Vial: 4
Acq On : 5 Feb 2021 10:04 am Operator: KG
Sample : 1B05008-MSD1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 10:26 2021 Quant Results File: 020421.RES

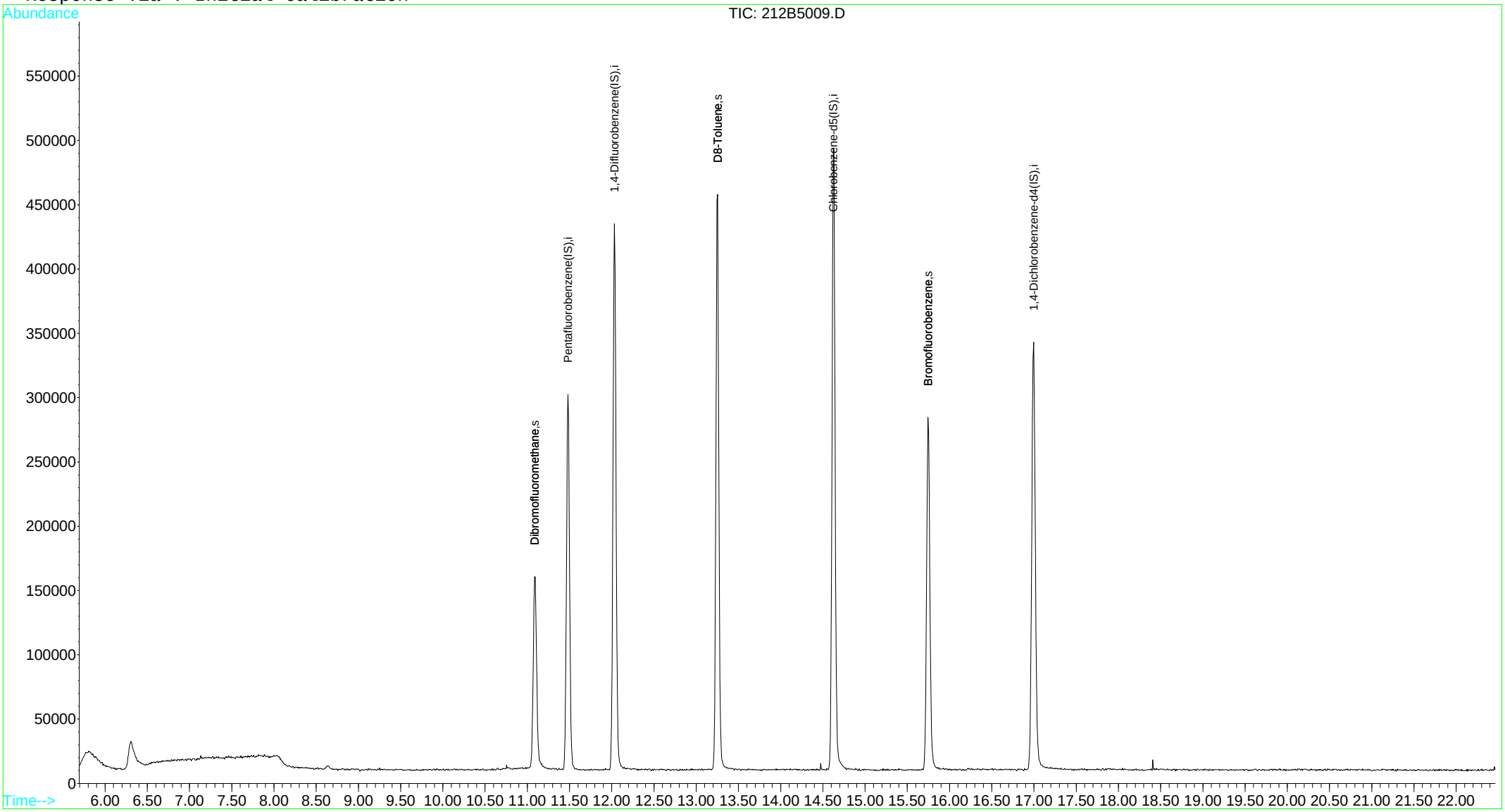
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5009.D Vial: 8
Acq On : 5 Feb 2021 11:59 am Operator: KG
Sample : 1B05008-BLK1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 12:36 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5009.D Vial: 8
Acq On : 5 Feb 2021 11:59 am Operator: KG
Sample : 1B05008-BLK1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 12:36 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	234982	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.03	114	429848	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.62	82	218184	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	144694	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	128014	52.74	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.48%			
54) D8-Toluene	13.25	98	370411	48.82	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.64%			
75) Bromofluorobenzene	15.75	95	149982	47.54	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 95.08%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.	d	
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D.	d	
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.	d	
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D.	d	
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	128014	52.74	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D.	d	
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.	d	
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.	d	
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.	d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5009.D Vial: 8
Acq On : 5 Feb 2021 11:59 am Operator: KG
Sample : 1B05008-BLK1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 12:36 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	370411	48.82 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	149982	47.54 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5010.D Vial: 9
Acq On : 5 Feb 2021 12:27 pm Operator: KG
Sample : AE00865-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 12:54 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	233479	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.03	114	430841	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	213290	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	141244	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	127077	52.69	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.38%			
54) D8-Toluene	13.26	98	365652	48.08	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 96.16%			
75) Bromofluorobenzene	15.76	95	147654	47.87	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 95.74%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.	d	
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.	d	
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.	d	
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D.	d	
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D.	d	
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	127077	52.69	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D.	d	
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.	d	
43) Isobutyl Alcohol	0.00	43	0	N.D.	d	
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5010.D Vial: 9
Acq On : 5 Feb 2021 12:27 pm Operator: KG
Sample : AE00865-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 12:54 2021 Quant Results File: 020421.RES

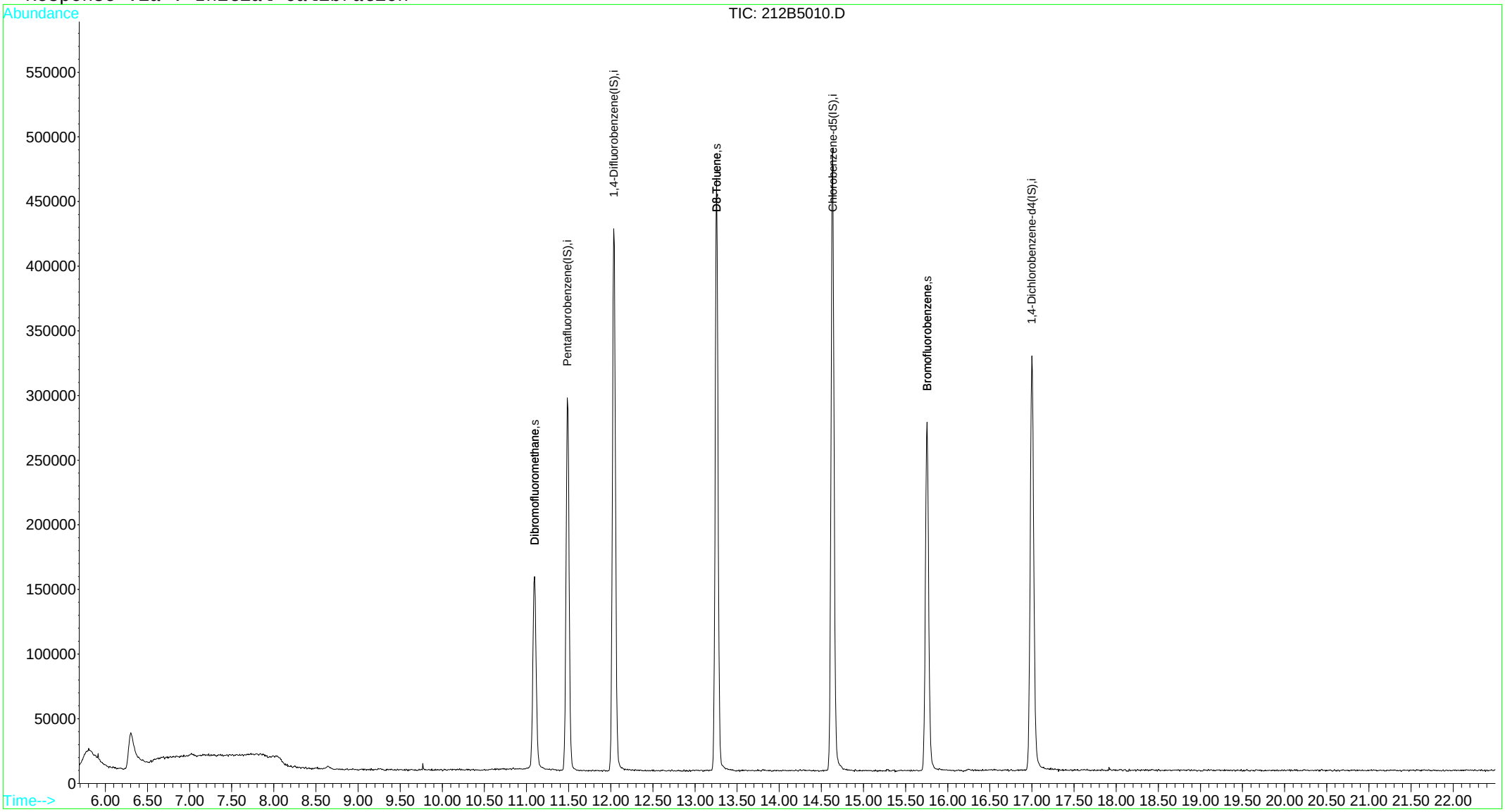
Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.26	98	365652	48.08 ug/kg	91
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.76	95	147654	47.87 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5010.D Vial: 9
Acq On : 5 Feb 2021 12:27 pm Operator: KG
Sample : AE00865-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 12:54 2021 Quant Results File: 020421.RES

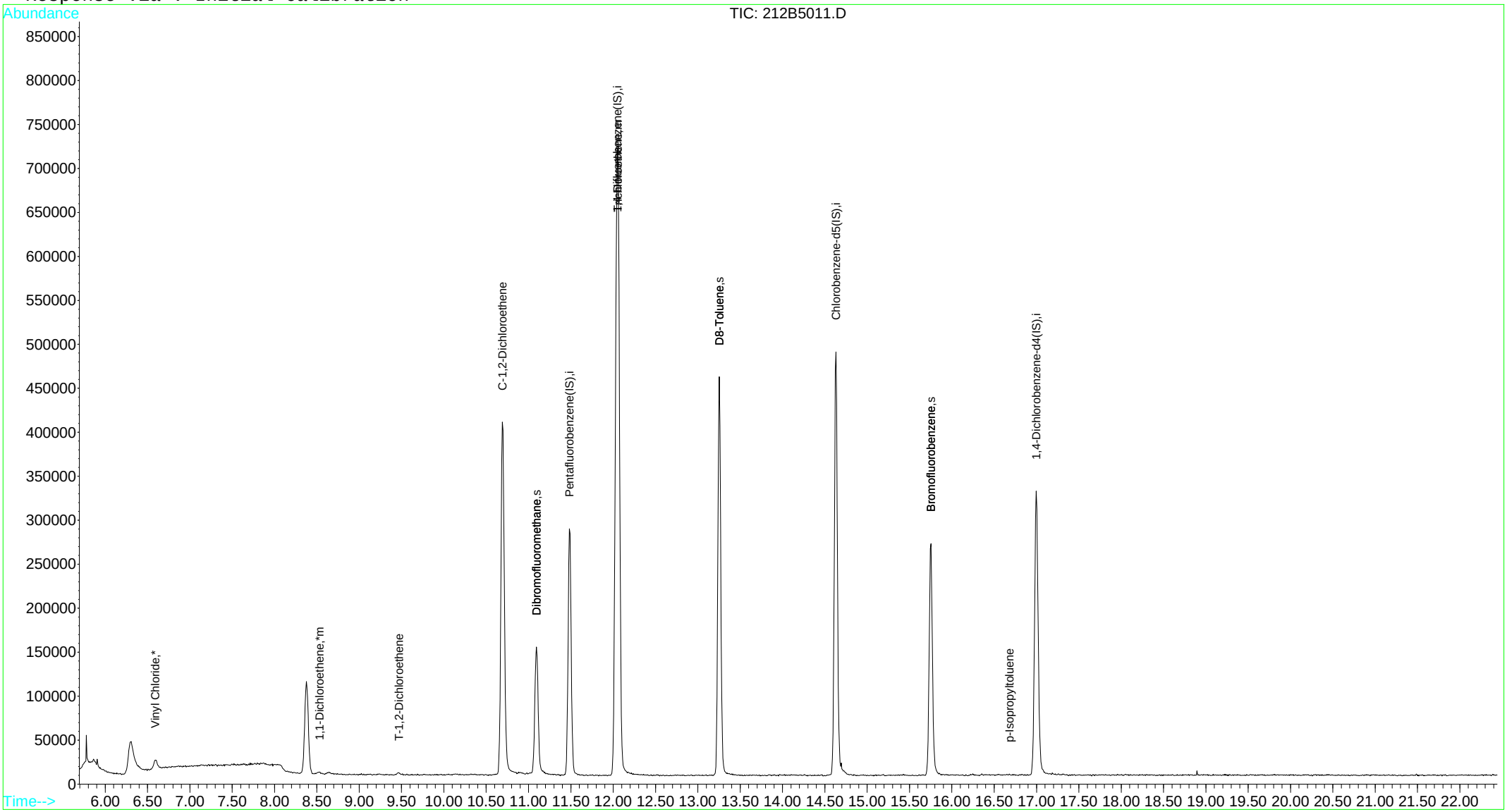
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5011.D Vial: 10
Acq On : 5 Feb 2021 12:56 pm Operator: KG
Sample : AE00180-15RE1@250X Inst : OVGCMS2
Misc : 250 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 14:48 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5011.D Vial: 10
Acq On : 5 Feb 2021 12:56 pm Operator: KG
Sample : AE00180-15RE1@250X Inst : OVGCMS2
Misc : 250 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 14:48 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	228769	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.04	114	424534	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	213521	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	140182	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	123709	52.35	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.70%			
54) D8-Toluene	13.25	98	364998	48.71	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.42%			
75) Bromofluorobenzene	15.75	95	145333	47.07	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 94.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.59	62	16591	3.97	ug/kg	69
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	8.53	96	1308	0.54	ug/kg	82
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	1403	0.52	ug/kg	89
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	242122	82.65	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D. d		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	123709	52.35	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	242277	86.39	ug/kg	98
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5011.D Vial: 10
Acq On : 5 Feb 2021 12:56 pm Operator: KG
Sample : AE00180-15RE1@250X Inst : OVGCMS2
Misc : 250 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 14:48 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	364998	48.71 ug/kg	92
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D. d	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	145333	47.07 ug/kg#	81
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D. d	
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.67	119	612	0.08 ug/kg#	51
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5012.D Vial: 11
Acq On : 5 Feb 2021 1:25 pm Operator: KG
Sample : AE00180-28RE1@10X Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 14:52 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	227959	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.04	114	417811	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	211871	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	139704	50.00	ug/kg	0.03
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	123823	52.59	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.18%			
54) D8-Toluene	13.25	98	366300	49.67	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 99.34%			
75) Bromofluorobenzene	15.75	95	147101	48.01	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 96.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.56	101	302381	126.27	ug/kg	99
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D. d		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D. d		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	40845	13.99	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	123823	52.59	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	189535	68.67	ug/kg	99
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5012.D Vial: 11
Acq On : 5 Feb 2021 1:25 pm Operator: KG
Sample : AE00180-28RE1@10X Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 14:52 2021 Quant Results File: 020421.RES

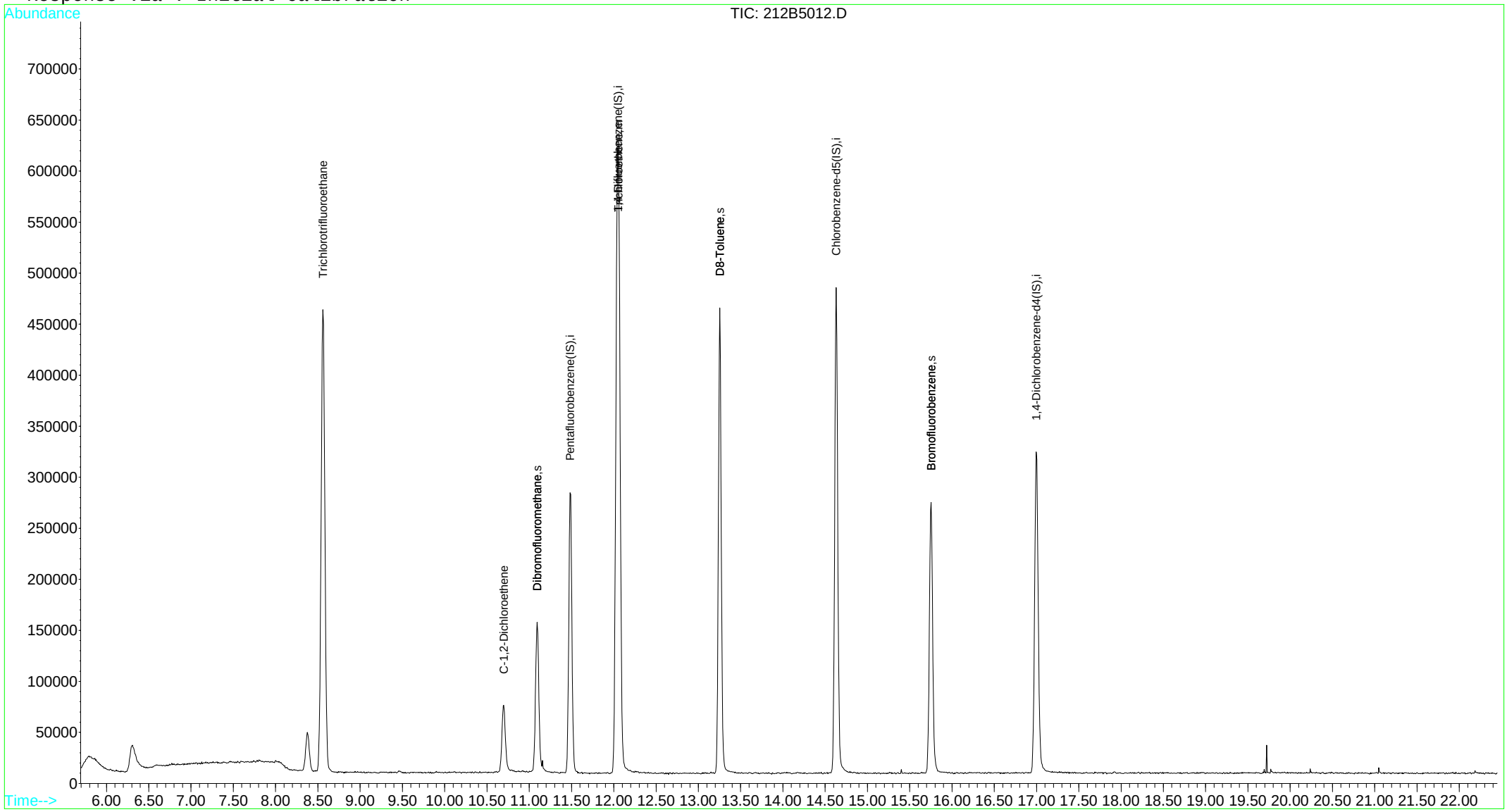
Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	366300	49.67 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	147101	48.01 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5012.D Vial: 11
Acq On : 5 Feb 2021 1:25 pm Operator: KG
Sample : AE00180-28RE1@10X Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 14:52 2021 Quant Results File: 020421.RES

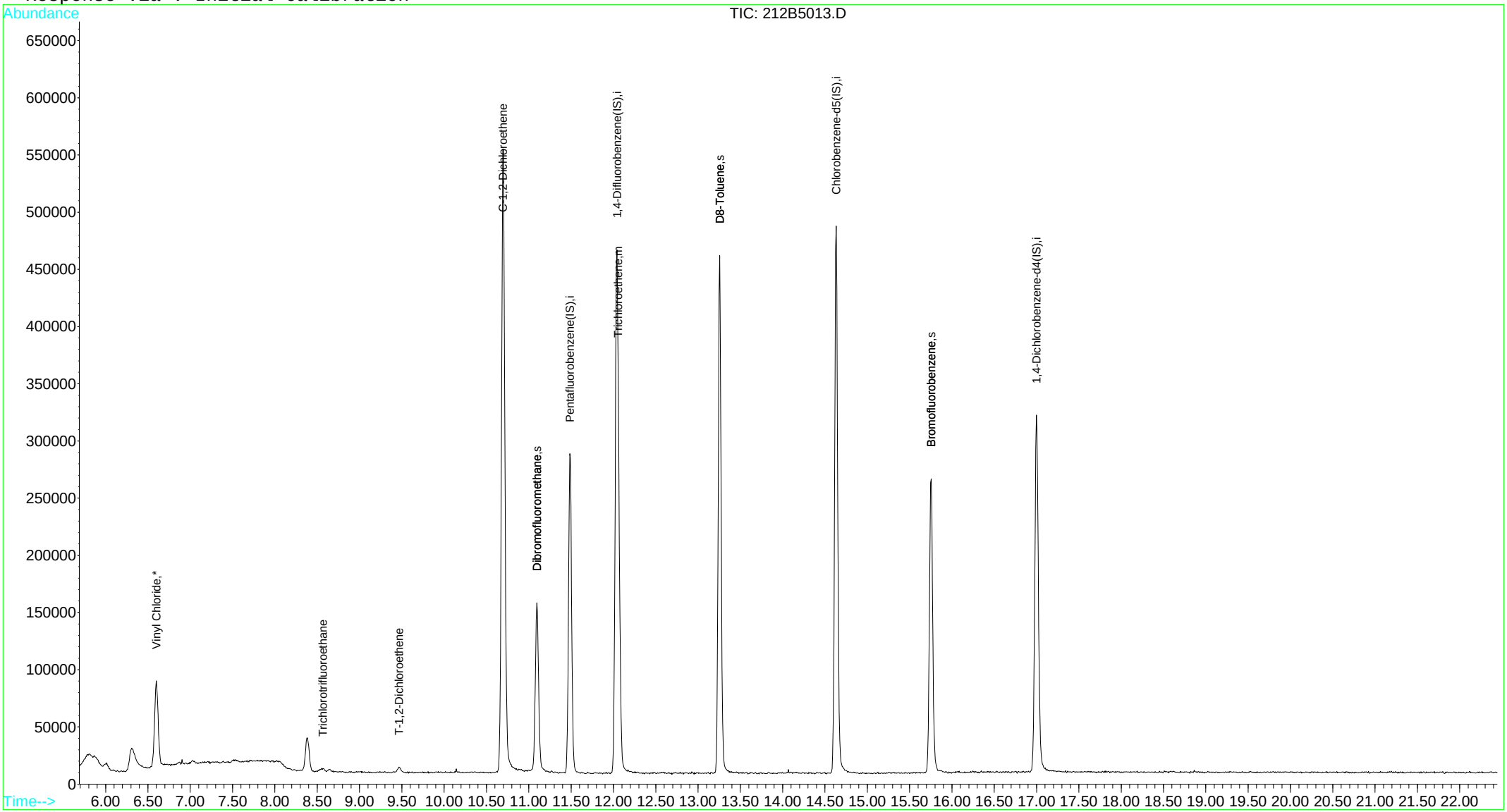
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5013.D Vial: 12
Acq On : 5 Feb 2021 1:54 pm Operator: KG
Sample : AE00180-03RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 7:58 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5013.D Vial: 12
Acq On : 5 Feb 2021 1:54 pm Operator: KG
Sample : AE00180-03RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 7:58 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	228312	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.03	114	422708	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	211162	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	136325	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	121335	51.45	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.90%			
54) D8-Toluene	13.26	98	365390	48.97	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.94%			
75) Bromofluorobenzene	15.76	95	143163	46.89	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 93.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	131617	31.58	ug/kg	96
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.58	101	1663	0.69	ug/kg	97
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	2580	0.95	ug/kg	91
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	328578	112.39	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D. d		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	121335	51.45	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	64419	23.07	ug/kg	94
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5013.D Vial: 12
Acq On : 5 Feb 2021 1:54 pm Operator: KG
Sample : AE00180-03RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 7:58 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.26	98	365390	48.97 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.76	95	143163	46.89 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5014.D Vial: 13
Acq On : 5 Feb 2021 2:23 pm Operator: KG
Sample : AE00180-05RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 15:08 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	223623	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.04	114	414444	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	206398	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	133311	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	119566	51.76	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 103.52%			
54) D8-Toluene	13.26	98	356784	48.77	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.54%			
75) Bromofluorobenzene	15.76	95	138808	46.51	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 93.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	25300	6.20	ug/kg	99
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	1778	0.67	ug/kg	97
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	8656	3.02	ug/kg	95
22) 1,1-Dichloroethane	10.14	63	196347	38.26	ug/kg#	69
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	119566	51.76	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	11.33	75	1993	0.53	ug/kg#	53
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D. d		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D. d		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5014.D Vial: 13
Acq On : 5 Feb 2021 2:23 pm Operator: KG
Sample : AE00180-05RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 15:08 2021 Quant Results File: 020421.RES

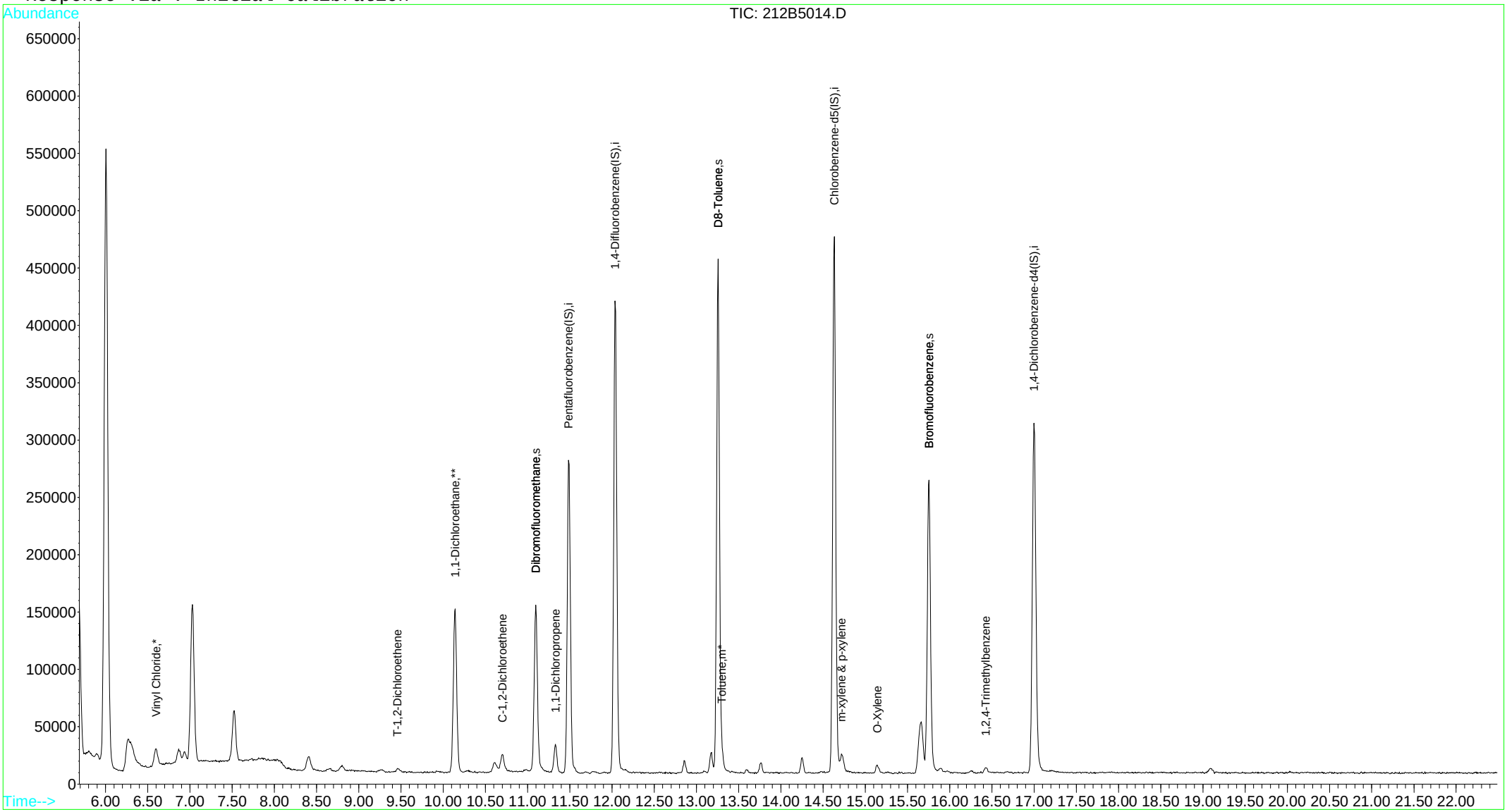
Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D. d	
55) D8-Toluene	13.26	98	356784	48.77 ug/kg	92
57) Toluene	13.31	92	6159	1.03 ug/kg	97
58) Ethyl Methacrylate	0.00	69	0	N.D. d	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D. d	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D. d	
68) m-xylene & p-xylene	14.72	106	5040	1.26 ug/kg	93
69) O-Xylene	15.15	106	2796	0.69 ug/kg	94
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D. d	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.76	95	138808	46.51 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D. d	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	16.43	105	4180	0.59 ug/kg	94
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5014.D Vial: 13
Acq On : 5 Feb 2021 2:23 pm Operator: KG
Sample : AE00180-05RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 15:08 2021 Quant Results File: 020421.RES

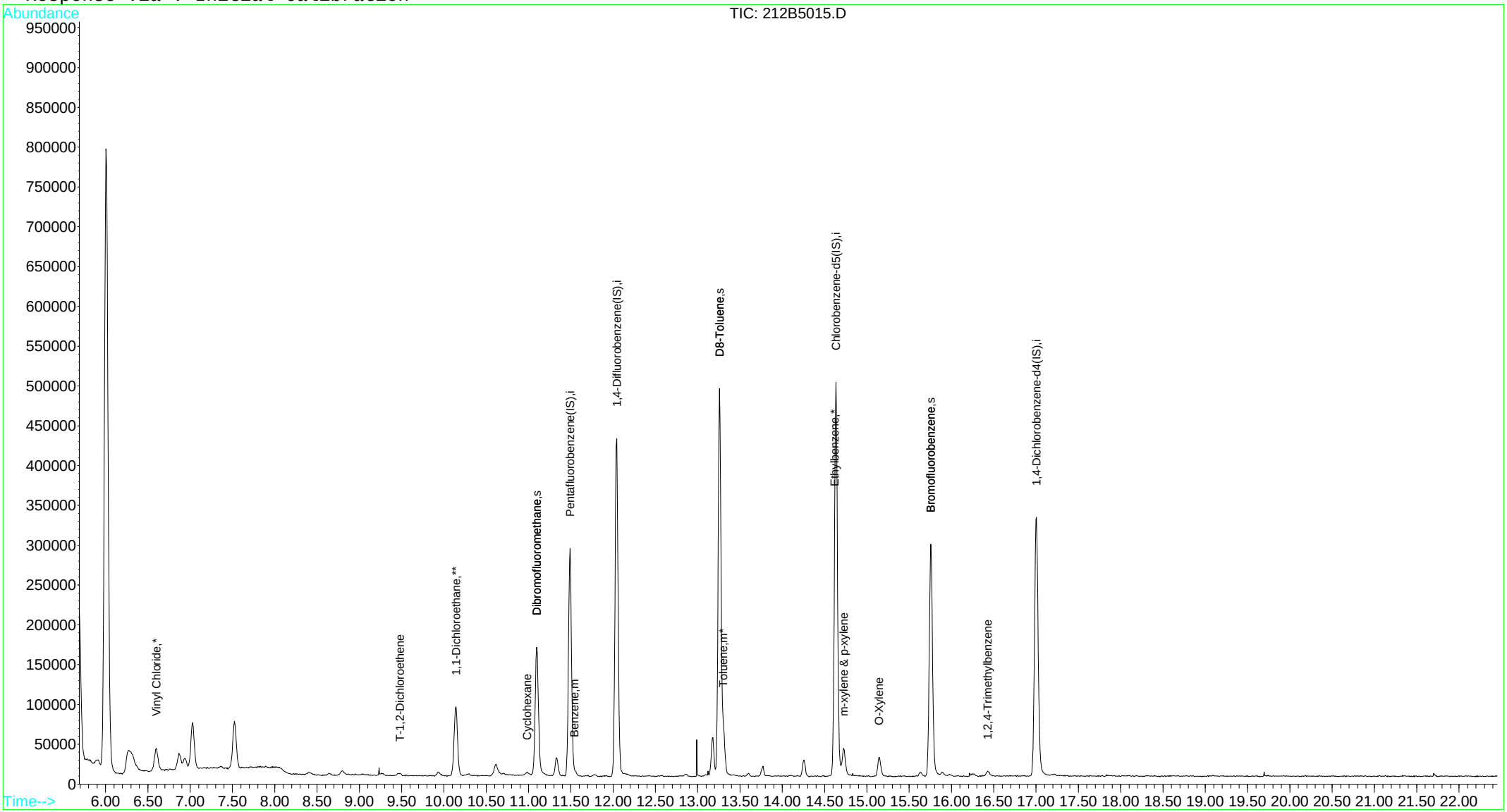
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5015.D Vial: 14
Acq On : 5 Feb 2021 2:51 pm Operator: KG
Sample : AE00180-06RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:08 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5015.D Vial: 14
Acq On : 5 Feb 2021 2:51 pm Operator: KG
Sample : AE00180-06RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:08 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	233178	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.04	114	430268	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	216243	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.01	152	143648	50.00	ug/kg	0.03
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	135077	56.08	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 112.16%			
54) D8-Toluene	13.26	98	388397	51.14	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 102.28%			
75) Bromofluorobenzene	15.76	95	157749	50.45	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 100.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	48916	11.49	ug/kg	80
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D. d		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	1715	0.62	ug/kg	98
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	0.00	96	0	N.D. d		
22) 1,1-Dichloroethane	10.14	63	121766	22.76	ug/kg	98
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	135077	56.08	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D. d		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	10.98	56	2799	0.63	ug/kg#	83
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	11.55	78	5479	0.52	ug/kg#	61
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5015.D Vial: 14
Acq On : 5 Feb 2021 2:51 pm Operator: KG
Sample : AE00180-06RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:08 2021 Quant Results File: 020421.RES

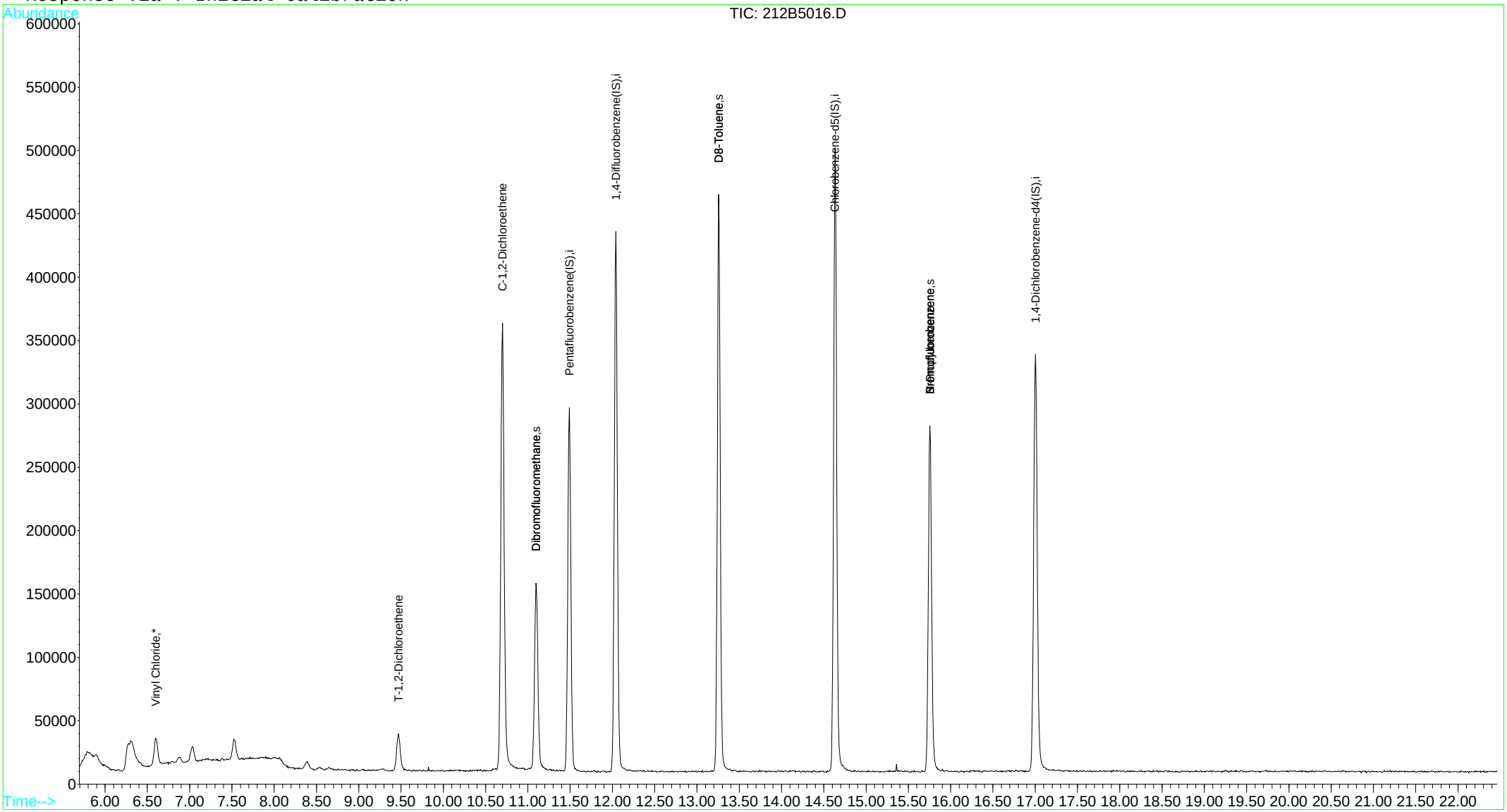
Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.26	98	388397	51.14 ug/kg	93
57) Toluene	13.31	92	28314	4.52 ug/kg	98
58) Ethyl Methacrylate	0.00	69	0	N.D. d	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D. d	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	14.61	106	2875	0.82 ug/kg	81
68) m-xylene & p-xylene	14.72	106	12716	3.04 ug/kg	99
69) O-Xylene	15.15	106	9018	2.11 ug/kg	95
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D. d	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.76	95	157749	50.45 ug/kg#	81
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D. d	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	16.43	105	5190	0.68 ug/kg	93
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D. d	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5016.D Vial: 15
Acq On : 5 Feb 2021 3:20 pm Operator: KG
Sample : AE00180-26RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:09 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5016.D Vial: 15
Acq On : 5 Feb 2021 3:20 pm Operator: KG
Sample : AE00180-26RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:09 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	231489	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.04	114	430295	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.63	82	218296	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	145622	50.00	ug/kg	0.03
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	124773	52.18	ug/kg	0.03
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.36%			
54) D8-Toluene	13.26	98	369544	48.66	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.32%			
75) Bromofluorobenzene	15.75	95	149050	47.22	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 94.44%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	36699	8.68	ug/kg	96
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D. d		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	16562	6.03	ug/kg	97
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	210113	70.88	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	124773	52.18	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D. d		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020521\212B5016.D Vial: 15
Acq On : 5 Feb 2021 3:20 pm Operator: KG
Sample : AE00180-26RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:09 2021 Quant Results File: 020421.RES

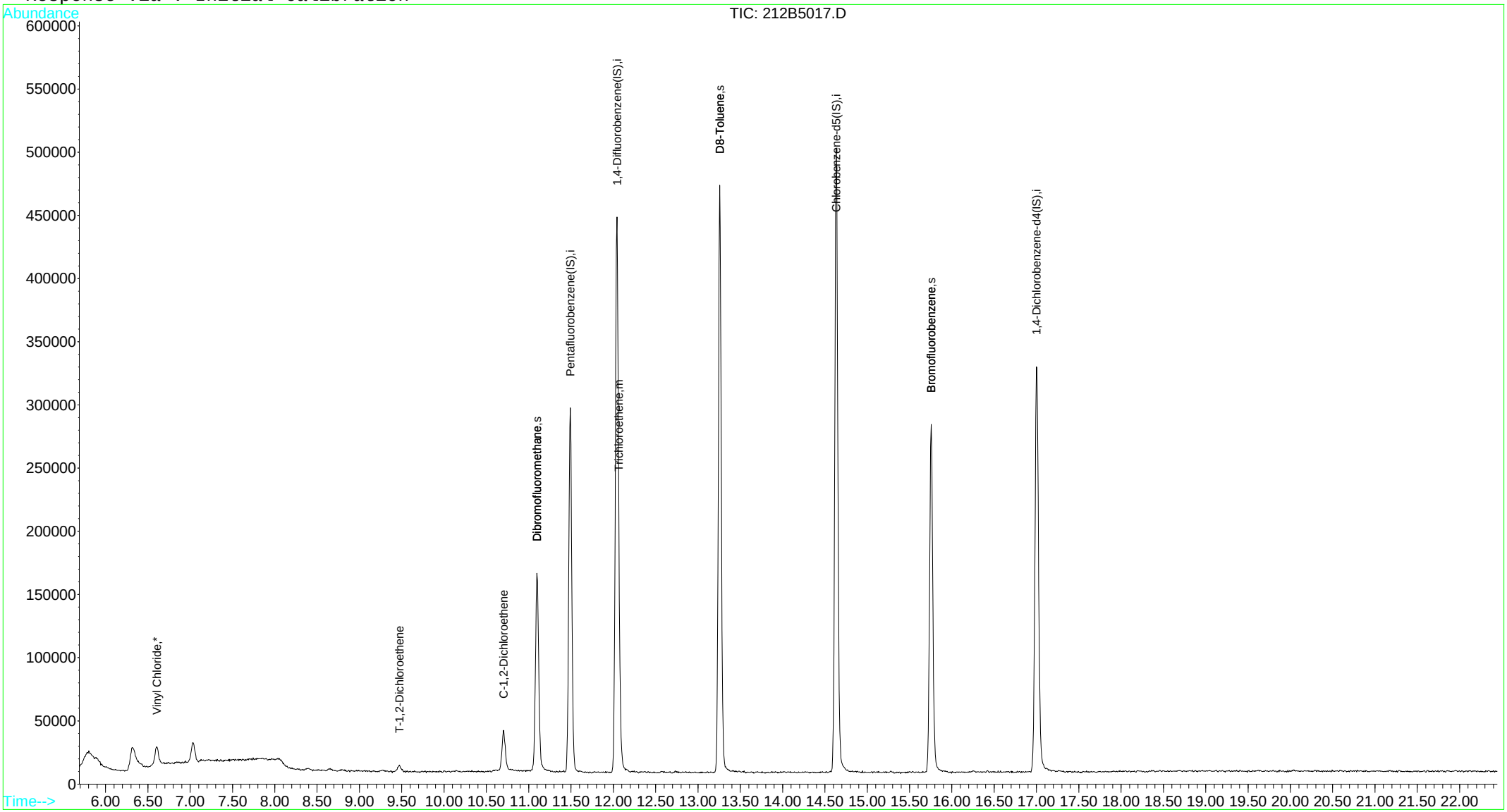
Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.26	98	369544	48.66 ug/kg	92
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	149050	47.22 ug/kg#	81
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	15.76	91	634	0.05 ug/kg#	54
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5017.D Vial: 16
Acq On : 5 Feb 2021 3:49 pm Operator: KG
Sample : AE00180-27RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:10 2021 Quant Results File: 020421.RES

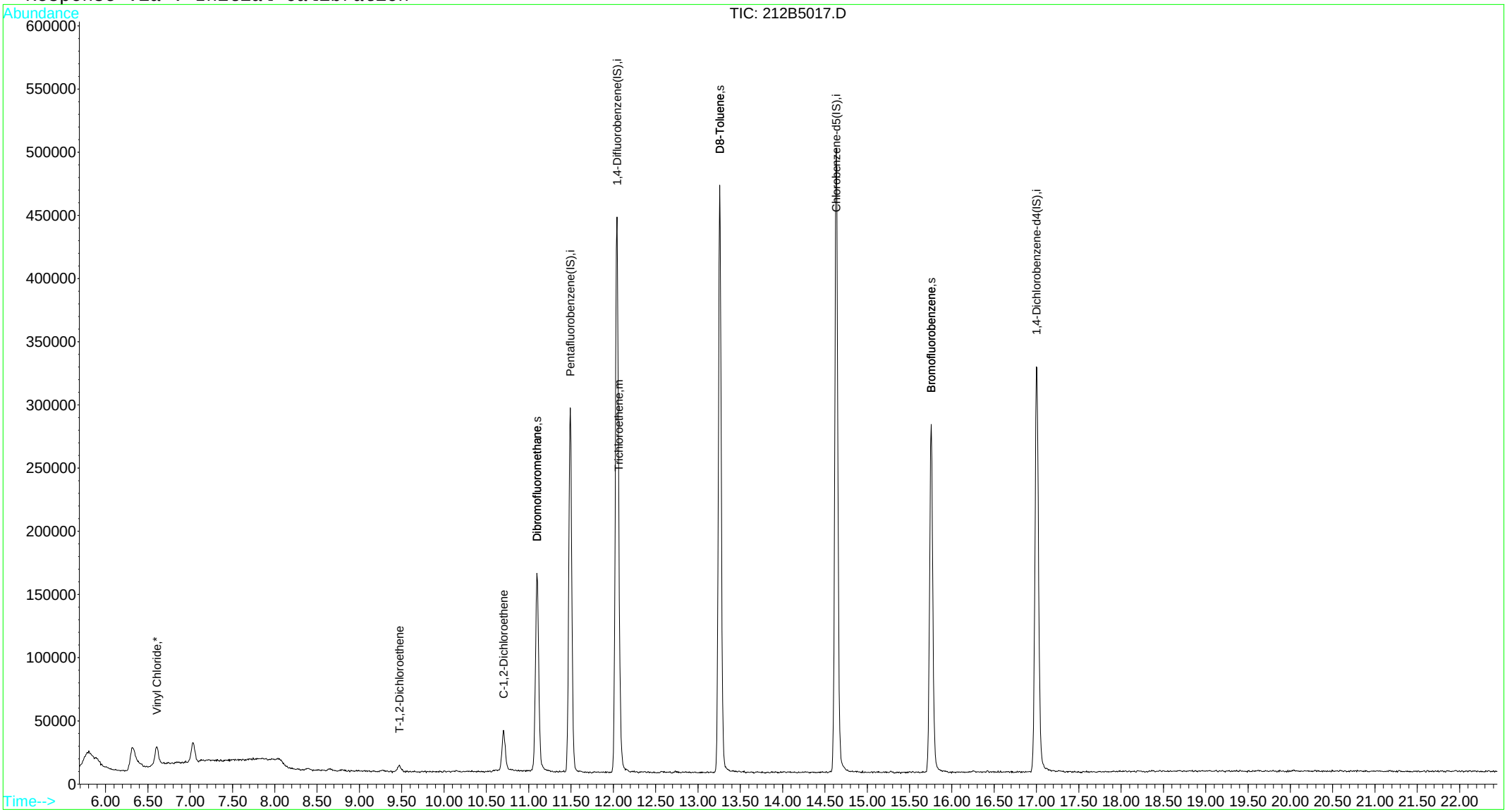
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020521\212B5017.D Vial: 16
Acq On : 5 Feb 2021 3:49 pm Operator: KG
Sample : AE00180-27RE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 8 8:10 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA64837

Instrument: OVGCMS5

Calibration ID: 2011113

Printed: 2/5/2021 11:44:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA64837-CCV1	QC		1	2	A1A1253	A0H0536		
1B05029-BS1	QC		2	4		A0H0536		
1B05029-BSD1	QC		3	5		A0H0536		
1B05029-BLK1	QC		4	7		A0H0536		
AA64837-CRL1	QC		5	8	A1A1254	A0H0536		
AE00180-18RE1	60D TCL SOM01.2 CLP-LIK	C	6	9		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@1x VC low in CCV Re-extract ad
AE00180-19RE1	60D TCL SOM01.2 CLP-LIK	C	7	10		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@1x VC low in CCV Re-extract add
AE00180-18RE2	60D TCL SOM01.2 CLP-LIK	C	8	11		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@5x cis12dce Re-extract added 2/5/
AE00180-20RE1	60D TCL SOM01.2 CLP-LIK	C	9	12		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@25x VC low in CCV Re-extract ad
AE00180-21RE1	60D TCL SOM01.2 CLP-LIK	C	10	13		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@1x VC low in CCV Re-extract add
AE00180-22RE1	60D TCL SOM01.2 CLP-LIK	C	11	14		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@5x VC low in CCV Re-extract add
AE00180-24RE1	60D TCL SOM01.2 CLP-LIK	C	12	15		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@2000x TCE Re-extract added 2/5/2
AE00180-25RE1	60D TCL SOM01.2 CLP-LIK	C	13	16		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@10000x freon & TCE Re-extract a
AE00180-29RE1	60D TCL SOM01.2 CLP-LIK	C	14	17		A0H0536	Tetra Tech NUS, Inc. (TE015)	rr@50x VC low in CCV Re-extract ad
AE00322-01	8260D Extended	A	15	18		A0H0536	ENCO Orlando - QA	
AE00322-02	8260D Extended	A	16	19		A0H0536	ENCO Orlando - QA	
AE00749-01	260D DOD Extended QSM 5.	B	17	20		A0H0536	ENCO Orlando - QA	Bottle cleanliness
AE00750-01	260D DOD Extended QSM 5.	A	18	21		A0H0536	ENCO Orlando - QA	bottle cleanliness

02/05/21

Samples Loaded By Date

2/4/21

Data Processed By Date

Sequence Name: C:\msdchem\1\sequence\215B5.s
Comment:
Operator: KKW
Data Path: C:\msdchem\1\DATA\020521\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample Name/Misc Info	
1) Sample	1	215B5001 8260S	rinse
2) Sample	2	215B5002 8260S	CCV1 - possible purge error; reprep + rerun
3) Sample	2	215B5003 8260S	CCV1
4) Sample	3	215B5004 8260S	1B04041-MSD1
5) Sample	4	215B5005 8260S	BS1
6) Sample	5	215B5006 8260S	BSD1
7) Sample	6	215B5007 8260S	RINSE
8) Sample	7	215B5008 8260S	BLK1
9) Sample	8	215B5009 8260S	CRL1
10) Sample	9	215B5010 8260S	AE00180-18RE1
11) Sample	10	215B5011 8260S	AE00180-19RE1
12) Sample	11	215B5012 8260S	AE00180-18RE2@5X
13) Sample	12	215B5013 8260S	AE00180-20RE1@25X
14) Sample	13	215B5014 8260S	AE00180-21RE1
15) Sample	14	215B5015 8260S	AE00180-22RE1@5X
16) Sample	15	215B5016 8260S	AE00180-24RE1@2000X
17) Sample	16	215B5017 8260S	AE00180-25RE1@10000X
18) Sample	17	215B5018 8260S	AE00180-29RE1@50X
19) Sample	18	215B5019 8260S	AE00322-01
20) Sample	19	215B5020 8260S	AE00322-02
21) Sample	20	215B5021 8260S	AE00749-01
22) Sample	21	215B5022 8260S	AE00750-01

PREPARATION BENCH SHEET

Printed: 2/5/2021 11:44:03AM

1B05029

ENCO Orlando

Analysis
8260D DOD Extended QSM 5.0 [EPA 8260D]
8260D Extended [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
___ A0F0992 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution
A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1B05029-BLK1		Blank		QC			5	5			5	
1B05029-BS1		LCS		QC	NC 2/8/21		5	5	A1A1251 A1A0898	2 2	5	
1B05029-BSD1		LCS Dup		QC			5	5	A1A1251 A1A0898	2 2	5	
AE00180-18RE1	C	HMPN-MW0035-035.0-20210129[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@1x VC low in CCV Re-extract added 2/5/2021 by KKW
AE00180-18RE2	C	HMPN-MW0035-035.0-20210129[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@5x cis12dce Re-extract added 2/5/2021 by KKW
AE00180-19RE1	C	HMPN-MW0034-015.0-20210129[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@1x VC low in CCV Re-extract added 2/5/2021 by KKW
AE00180-20RE1	C	HMPN-MW0039-035.0-20210130[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@25x VC low in CCV Re-extract added 2/5/2021 by KKW
AE00180-21RE1	C	HMPN-MW0040-042.5-20210130[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@1x VC low in CCV Re-extract added 2/5/2021 by KKW
AE00180-22RE1	C	HMPN-MW0009-010.0-20210130[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@5x VC low in CCV Re-extract added 2/5/2021 by KKW
AE00180-24RE1	C	HMPN-MW0027-042.5-20210201[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@2000x TCE Re-extract added 2/5/2021 by KKW
AE00180-25RE1	C	HMPN-MW0028-047.5-20210201[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@10000x freon & TCE Re-extract added 2/5/2021 by KKW
AE00180-29RE1	C	HMPN-DRUM222803-20210202[MS44	08-Feb-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr@50x VC low in CCV Re-extract added 2/5/2021 by KKW
AE00322-01		VOA STORAGE BLANK A[MS]	05-Feb-21	8260D Extended			5	5			5	
AE00322-02		VOA WALK-IN COOLER BLANK[MS]	05-Feb-21	8260D Extended	NC 2/8/21		5	5			5	
AE00749-01		40ml V Unp (Cole-Parmer Lot# B[MS] 250121000)	15-Feb-21	8260D DOD Extended QSM 5.0			5	5			5	Bottle cleanliness

PREPARATION BENCH SHEET

Printed: 2/5/2021 11:44:03AM

1B05029

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A0F0992 8260 surr working (lower conc.)

Spiking Solution
A1A0898 8260 2nd source Mega Mix
A1A1251 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE00750-01	40mLV+HCl (Cole-Parmer lot #[MS] 250121050)	15-Feb-21	8260D DOD Extended QSM 5.0			5	5			5	bottle cleanliness

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5
EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 02/05/21

StopDate

Instrument ID OVGCMS-5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A0B1371	Residual Chlorine Strips (Potassium Iodide S	102916
A1B0635	P&T Anti-Foam working solution	N/A

02/05/21
Samples Prepared By Date

Samples Prepared By Date

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

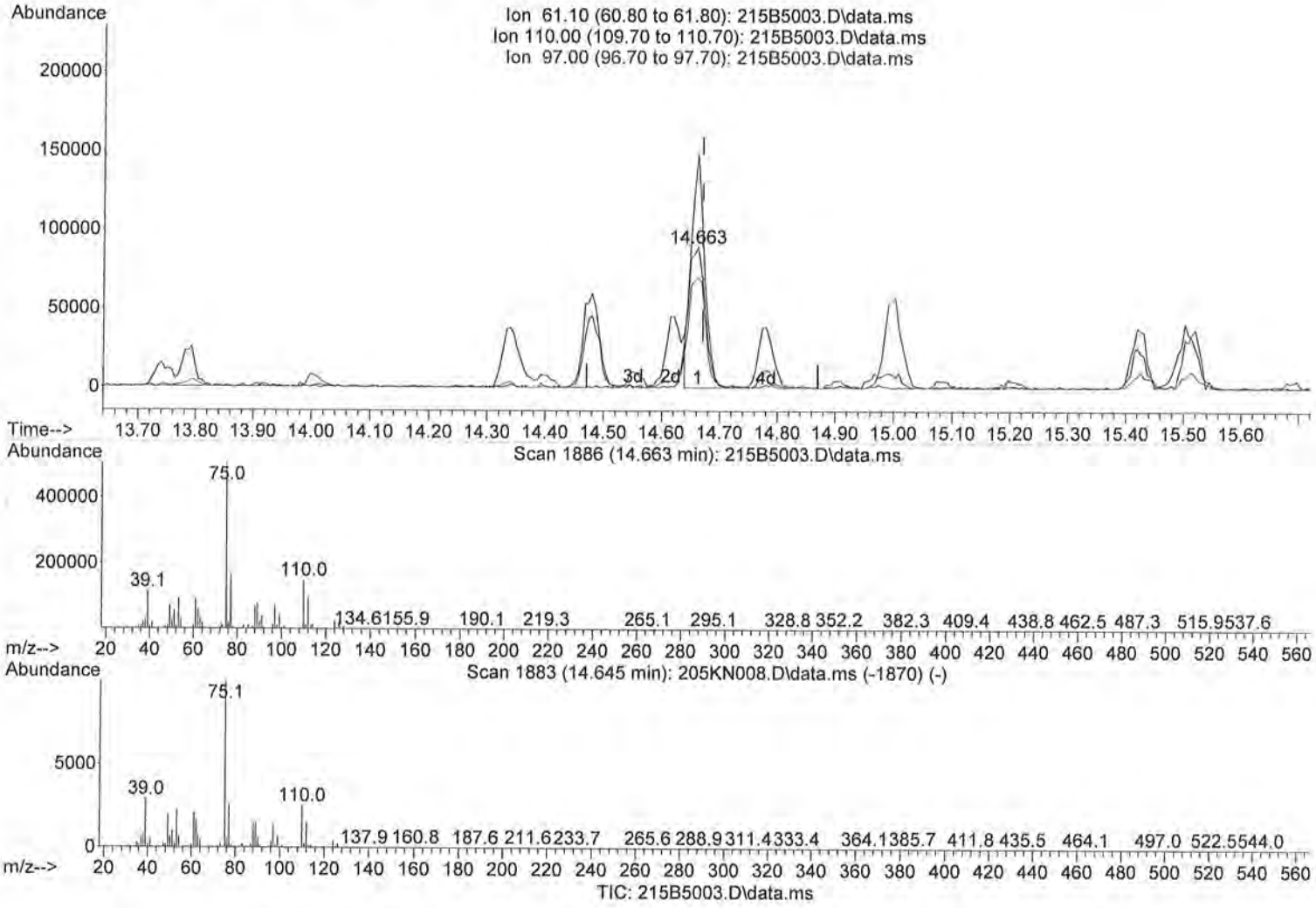
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

Instrument ID:	OVGCMS5
Sequence/Batch ID:	AA64837/1305029
Data File Prefix:	215B5
Date and Time Range of MIs:	2/5/21 10:16~13:09
Reviewer Print Name:	Marie Gonzalez
Reviewer Signature:	Marie Gonzalez
Date of Review:	2/8/21

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.663min (-0.008) 26.26 ug/L

response 169744

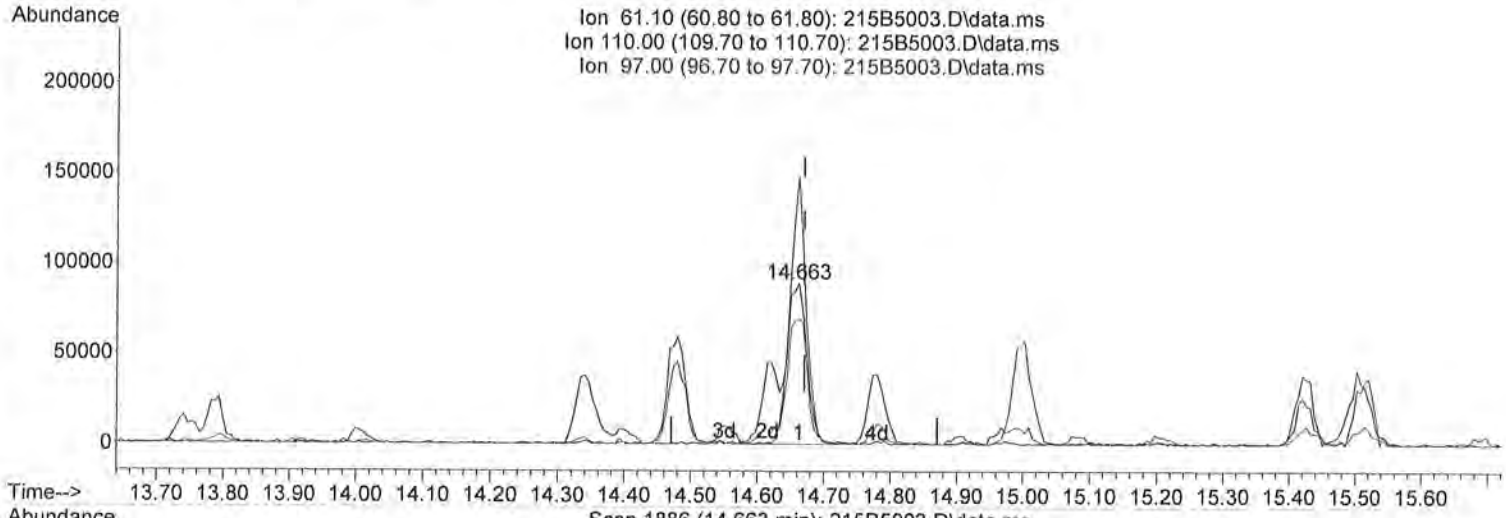
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	149.52#
97.00	49.10	92.78#
0.00	0.00	0.00

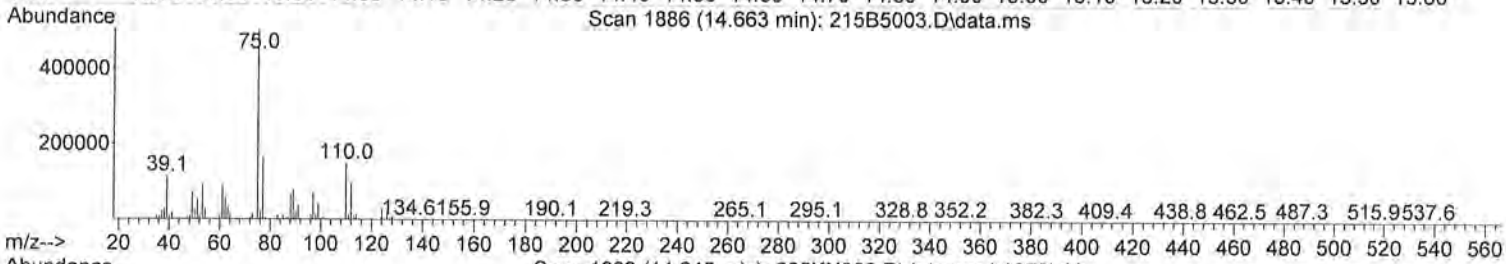
Select One:
[X] Original Integration [ ] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KJ 02/05/21
Review by/Date:

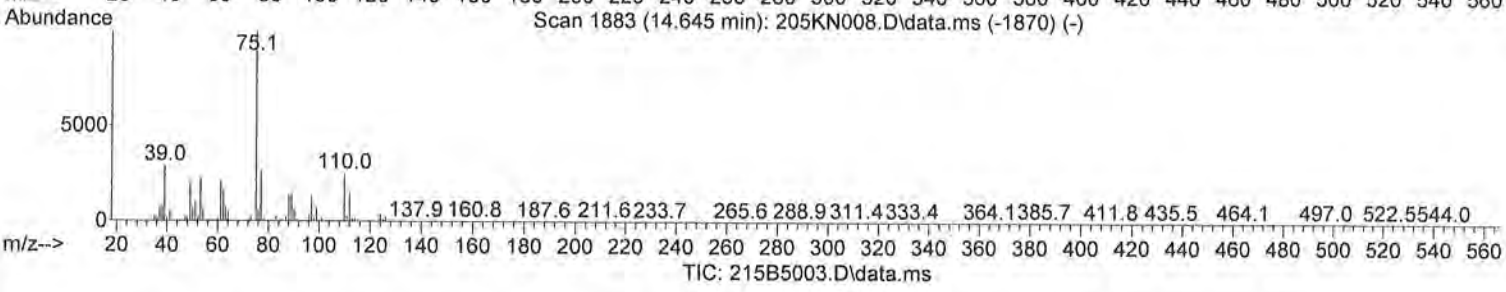
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B5003.D\data.ms

(77) 1,2,3-Trichloropropane

14.663min (-0.008) 40.10 ug/L m

response 259161

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	97.93
97.00	49.10	60.77#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

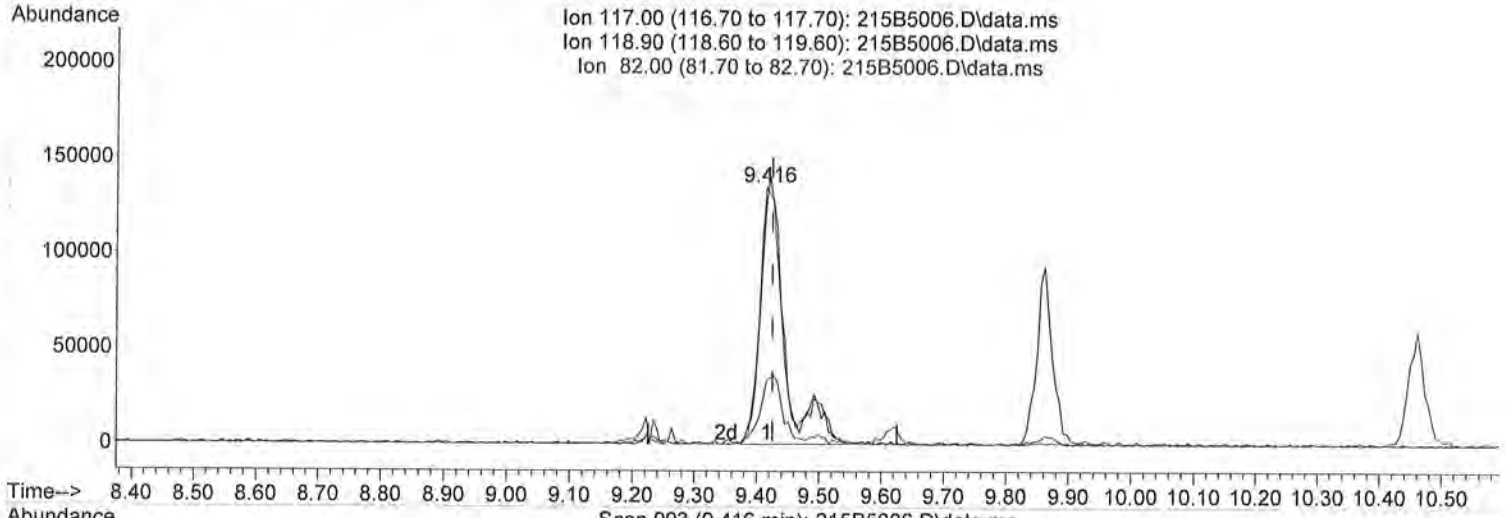
Review by/Date KW 02/05/21

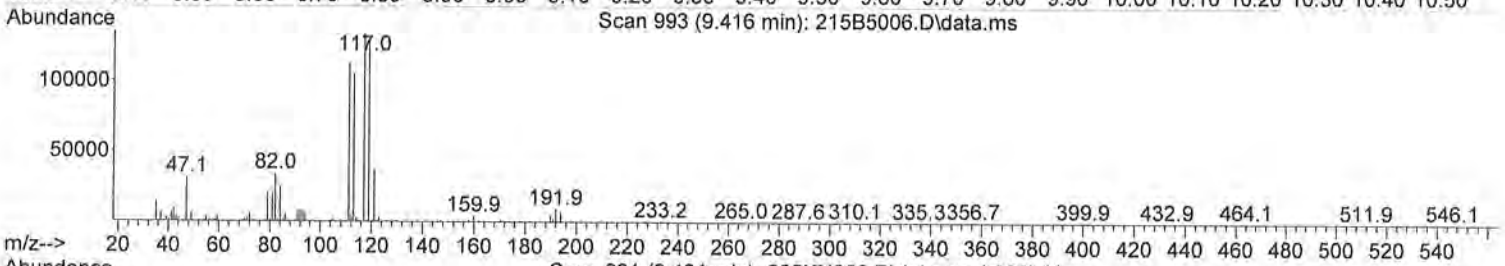
Review by/Date:

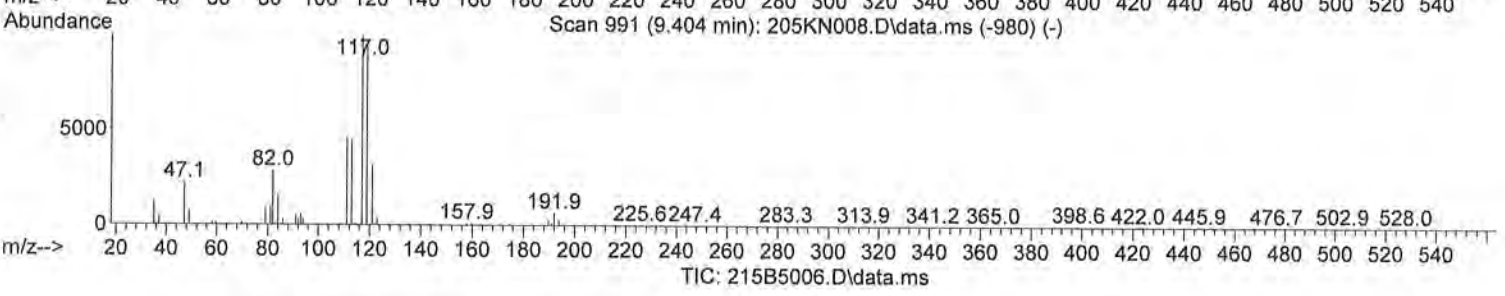
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B5006.D\data.ms

(40) Carbon Tetrachloride

9.416min (-0.009) 17.68 ug/L

response 382483

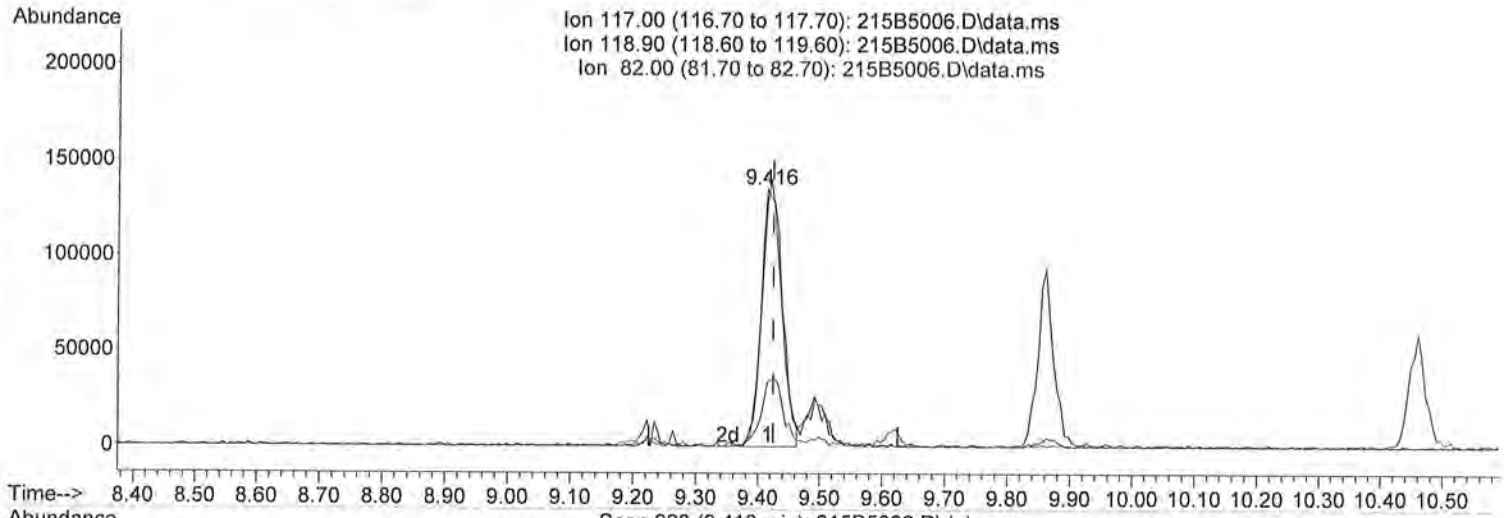
Ion	Exp%	Act%
117.00	100.00	100.00
118.90	108.90	81.10#
82.00	28.80	26.90
0.00	0.00	0.00

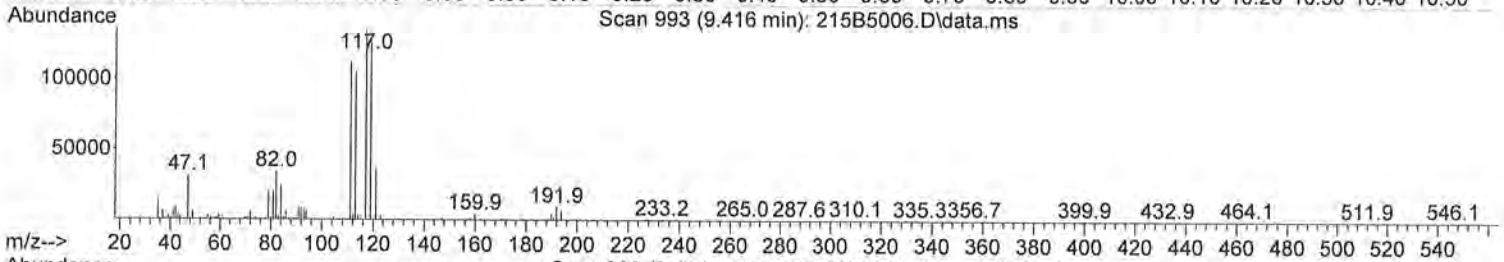
Select One:
[x] Original Integration [ ] Manual Integration
Select reason for manual integration:
[x] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date N 02/05/21
Review by/Date:

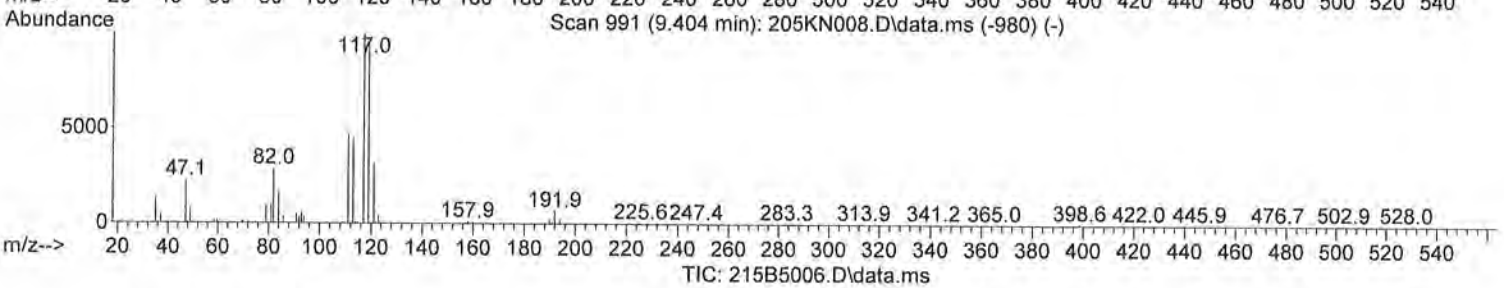
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B5006.D\data.ms

(40) Carbon Tetrachloride

9.416min (-0.009) 15.11 ug/L m

response 326946

Ion	Exp%	Act%
117.00	100.00	100.00
118.90	108.90	94.87
82.00	28.80	31.47
0.00	0.00	0.00

Select one:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

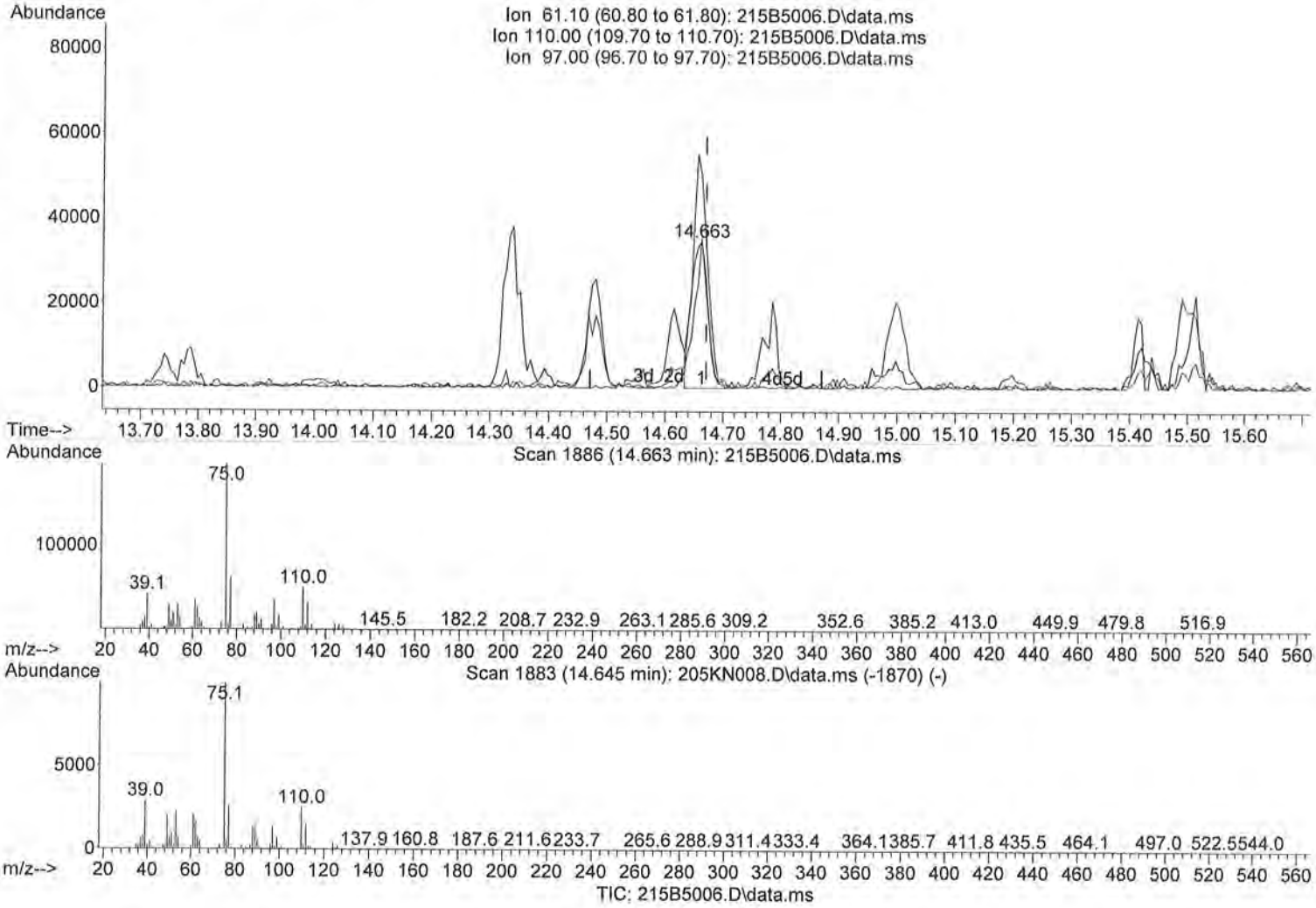
Review by/Date [illegible] 02/05/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.663min (-0.008) 10.99 ug/L

response 69853

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	143.63#
97.00	49.10	91.94#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

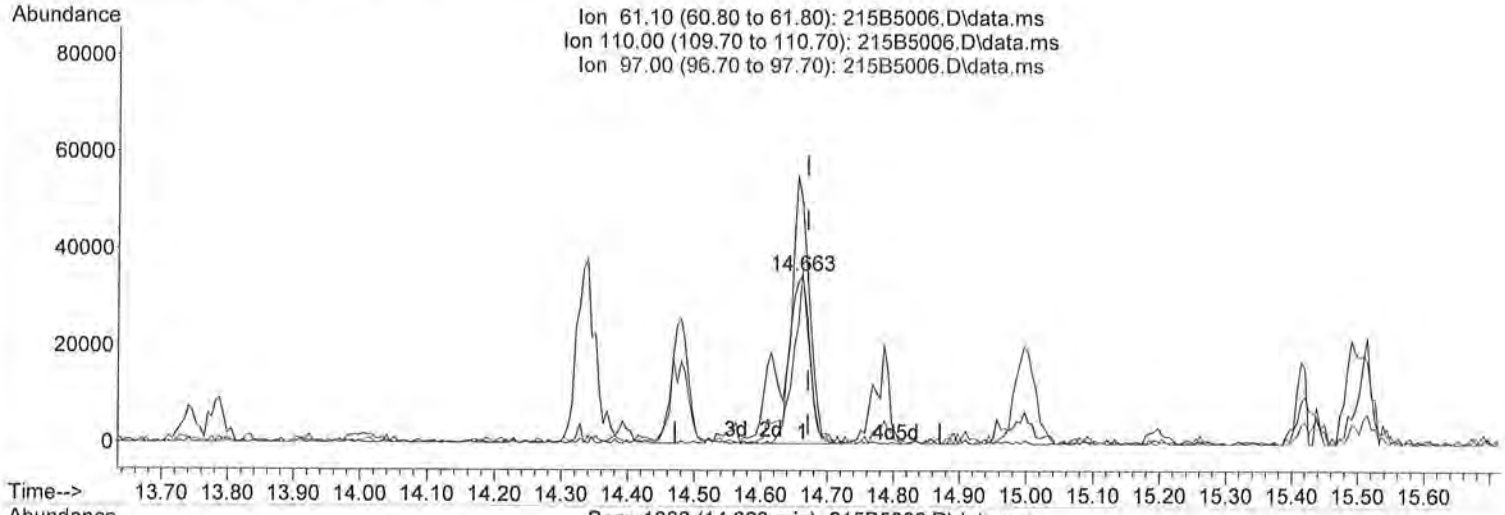
Review by/Date AJ 02/05/21

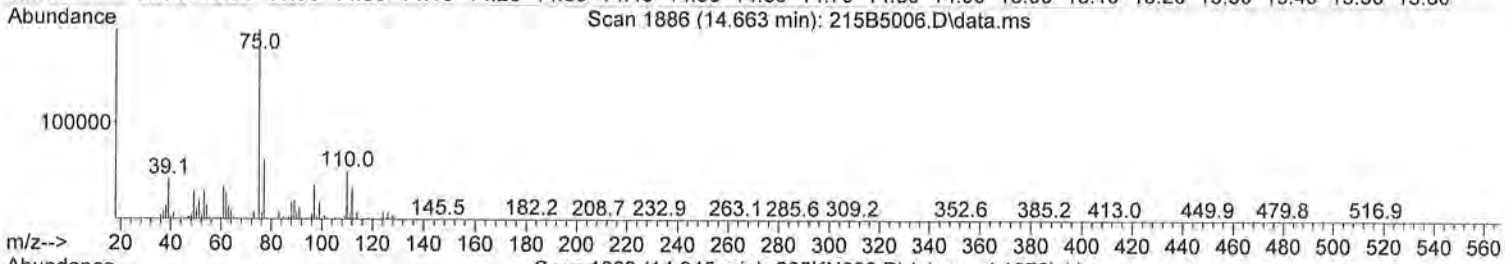
Review by/Date:

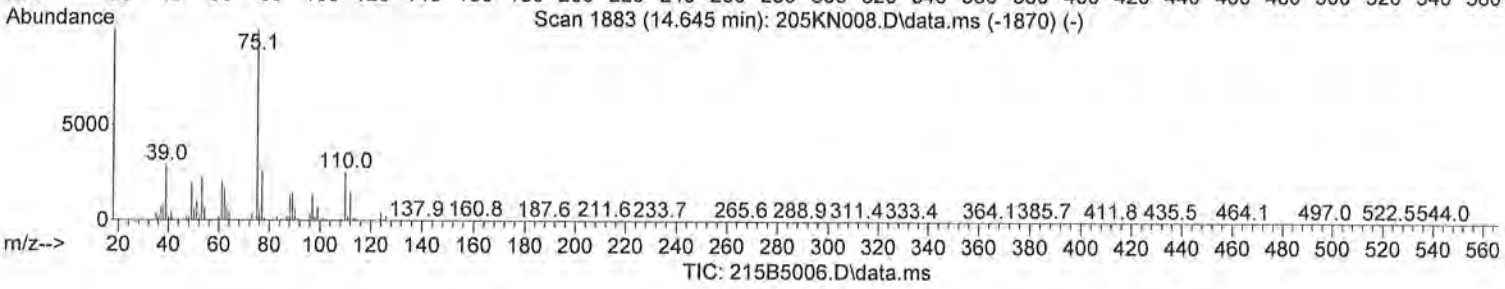
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration







TIC: 215B5006.D\data.ms

(77) 1,2,3-Trichloropropane

14.663min (-0.008) 15.94 ug/L m

response 101325

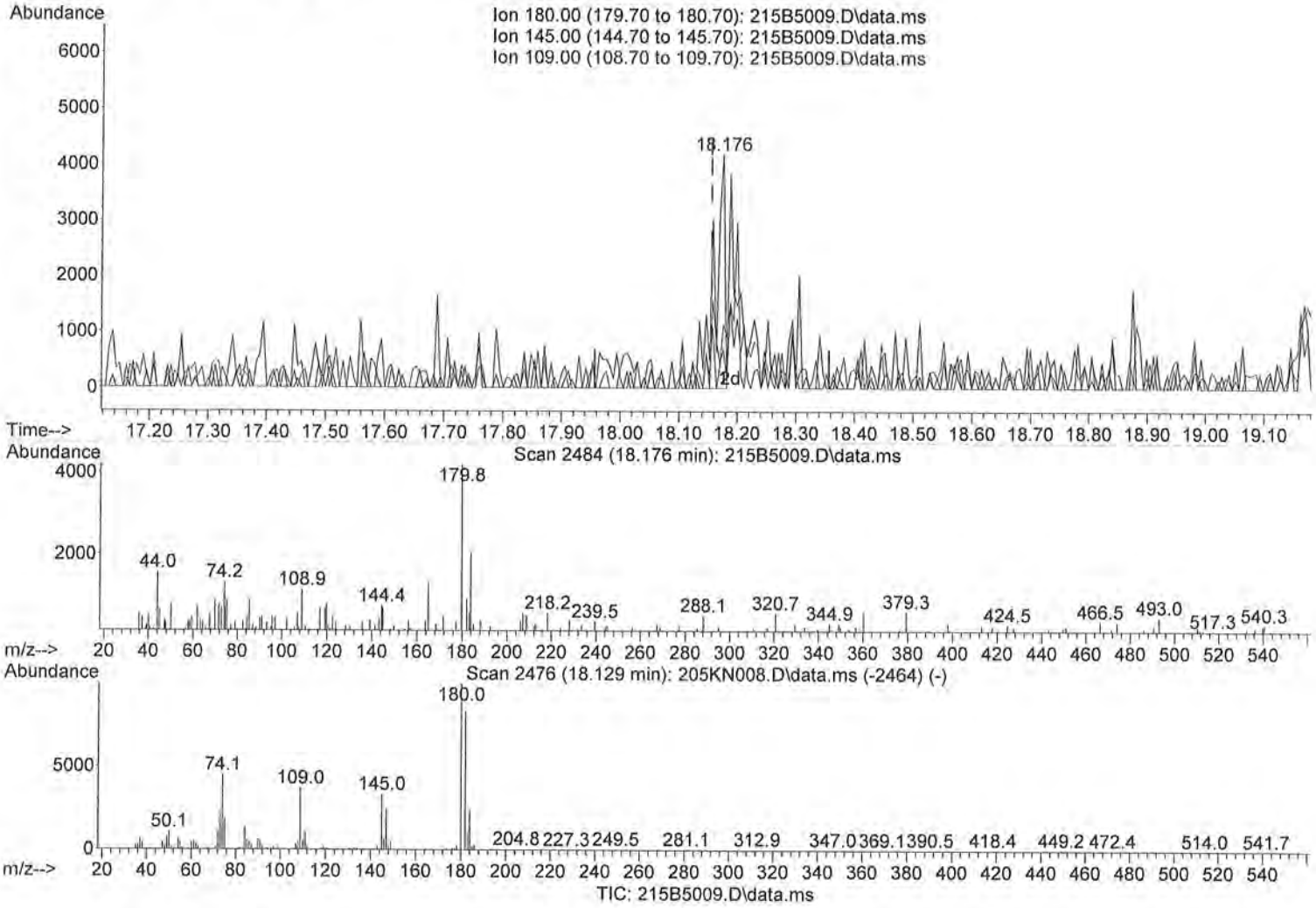
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	99.02
97.00	49.10	63.38#
0.00	0.00	0.00

Select One:
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 02/05/21
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5009.D
Acq On : 5 Feb 2021 11:53 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 05 13:08:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(94) 1,2,4-Trichlorobenzene

18.176min (+ 0.020) 0.37 ug/L

response 5225

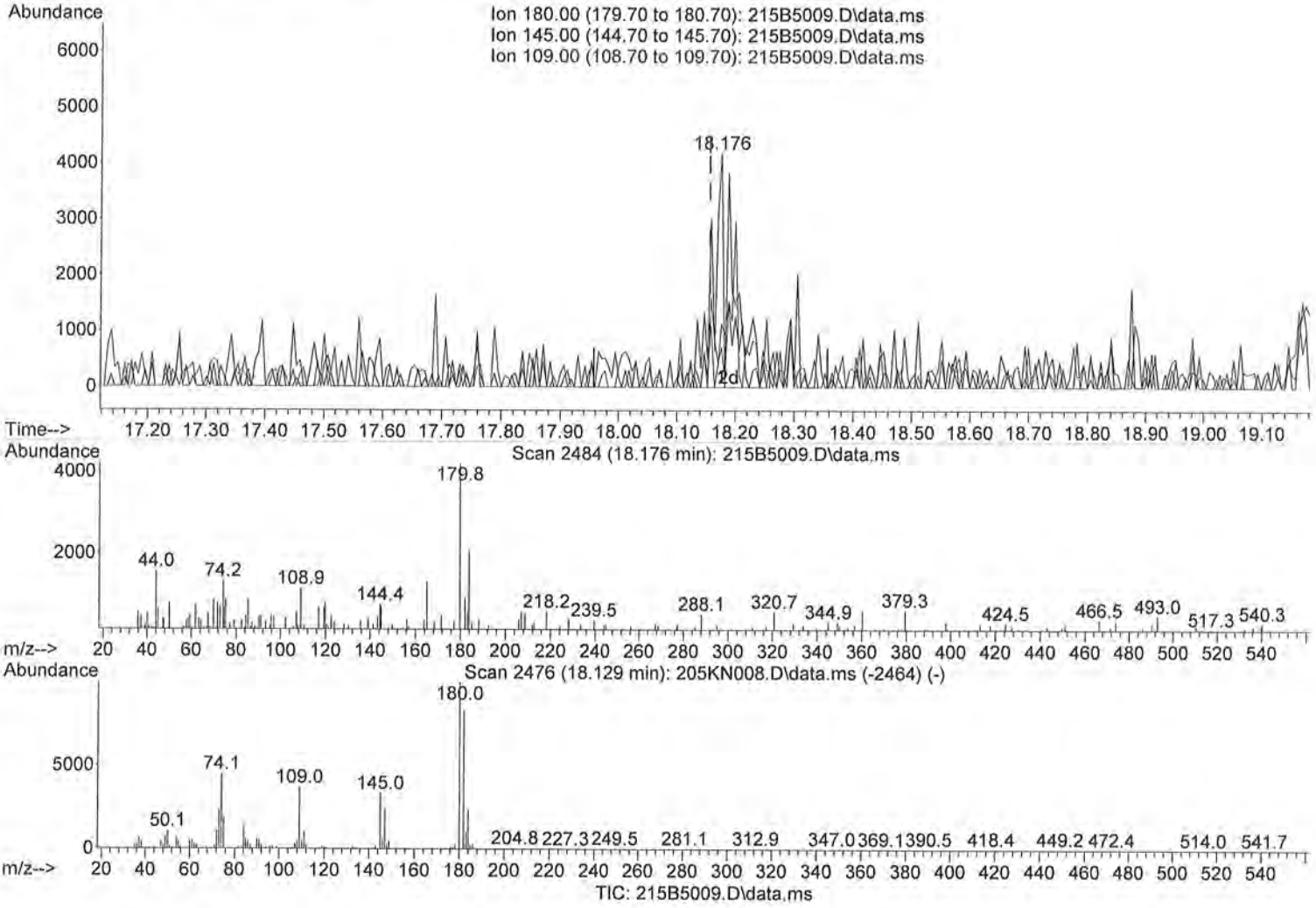
Ion	Exp%	Act%
180.00	100.00	100.00
145.00	35.80	29.47
109.00	33.50	0.00#
0.00	0.00	0.00

Select One:
[X] Original Integration [ ] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date 2/05/21
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5009.D
Acq On : 5 Feb 2021 11:53 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 05 13:08:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



(94) 1,2,4-Trichlorobenzene

18.176min (+ 0.020) 0.74 ug/L m

response 10435

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	35.80	14.76#
109.00	33.50	0.00#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date KJ 02/05/21

Review by/Date:

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	1433703	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2851329	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1754524	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1532689	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	738306	49.93	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.86%				
52) D8-Toluene	11.790	98	3391722	48.16	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.32%				
73) Bromofluorobenzene	14.340	95	1673473	53.41	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	334457	18.07	ug/L		97
3) Chloromethane	4.410	50	255534	11.99	ug/L		99
4) Vinyl Chloride	4.592	62	283896	16.41	ug/L		94
5) Bromomethane	5.232	94	86776	18.73	ug/L		97
6) Chloroethane	5.444	64	143372	18.84	ug/L		94
7) Trichlorofluoromethane	5.703	101	407834	18.95	ug/L		96
8) Diethyl ether	6.190	59	397942	33.25	ug/L		90
9) 1,1-Dichloroethene	6.537	96	562714	45.46	ug/L	#	72
10) Trichlorotrifluoroethane	6.566	151	363303	43.83	ug/L		96
11) Acrolein	7.030	56	856269	343.96	ug/L		97
12) Iodomethane	6.790	142	3665455	276.11	ug/L	#	86
13) Carbon Disulfide	6.631	76	9172567	226.23	ug/L		96
14) 3-chloropropene	7.207	41	809643	33.10	ug/L	#	83
15) Acetone	7.412	43	541521	160.77	ug/L		98
16) Methylene Chloride	7.348	84	609906	40.64	ug/L	#	67
17) Methyl Acetate	7.530	43	259545	24.66	ug/L	#	87
18) t-1,2-Dichloroethene	7.559	96	603481	42.14	ug/L		82
19) Methyl tert-butyl ether	7.647	73	1440934	39.75	ug/L	#	91
20) Acetonitrile	8.029	41	774007	283.45	ug/L		98
21) Isopropyl ether	8.065	45	1530682	31.81	ug/L	#	86
22) Chloroprene	8.282	88	657491	47.93	ug/L		85
23) 1,1-Dichloroethane	8.323	63	1082919	36.76	ug/L		98
24) Acrylonitrile	8.394	53	1527390	343.33	ug/L		96
25) Vinyl Acetate	8.552	43	5333082	176.69	ug/L	#	91
26) c-1,2-Dichloroethene	8.958	96	697225	45.96	ug/L	#	82
27) 2,2-Dichloropropane	9.087	77	931594	37.17	ug/L		96
28) Bromochloromethane	9.193	128	273966	51.13	ug/L		90
29) Cyclohexane	9.204	56	963836	30.08	ug/L	#	83
30) Chloroform	9.234	83	1150441	40.89	ug/L		95
32) Dibromofluoromethane	9.434	113	738306	49.93	ug/L	#	91
33) 2-Butanone	9.557	72	323883	198.30	ug/L	#	57
34) 1,1,1-Trichloroethane	9.498	97	956455	41.18	ug/L		97
35) 1,1-Dichloropropene	9.616	75	875534	37.05	ug/L		90
36) Propionitrile	9.904	54	683755	339.05	ug/L		95
37) Methacrylonitrile	9.921	41	3227492	324.14	ug/L	#	82
38) Isobutyl Alcohol	9.915	43	760895	631.85	ug/L	#	52
40) Carbon Tetrachloride	9.422	117	764374	35.78	ug/L		91
41) Benzene	9.886	78	2582660	39.62	ug/L		94
42) 1,2-Dichloroethane	10.097	62	812969	34.19	ug/L	#	94
43) Trichloroethene	10.462	130	647520	49.18	ug/L	#	84
44) Methyl cyclohexane	10.462	83	1217454	37.22	ug/L		89
45) Dibromomethane	10.908	93	372606	40.24	ug/L		92
46) 1,2-Dichloropropane	10.996	63	653217	34.50	ug/L		92
47) Bromodichloromethane	11.026	83	891935	42.37	ug/L	#	93
48) Methyl Methacrylate	11.085	69	420391	34.73	ug/L	#	83
49) 1,4-Dioxane	11.208	88	131568	795.96	ug/L		83
50) 2-Chloroethyl vinyl ether	11.496	63	1829991	199.21	ug/L	#	88
51) C-1,3-Dichloropropene	11.619	75	1159418	40.78	ug/L		90

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

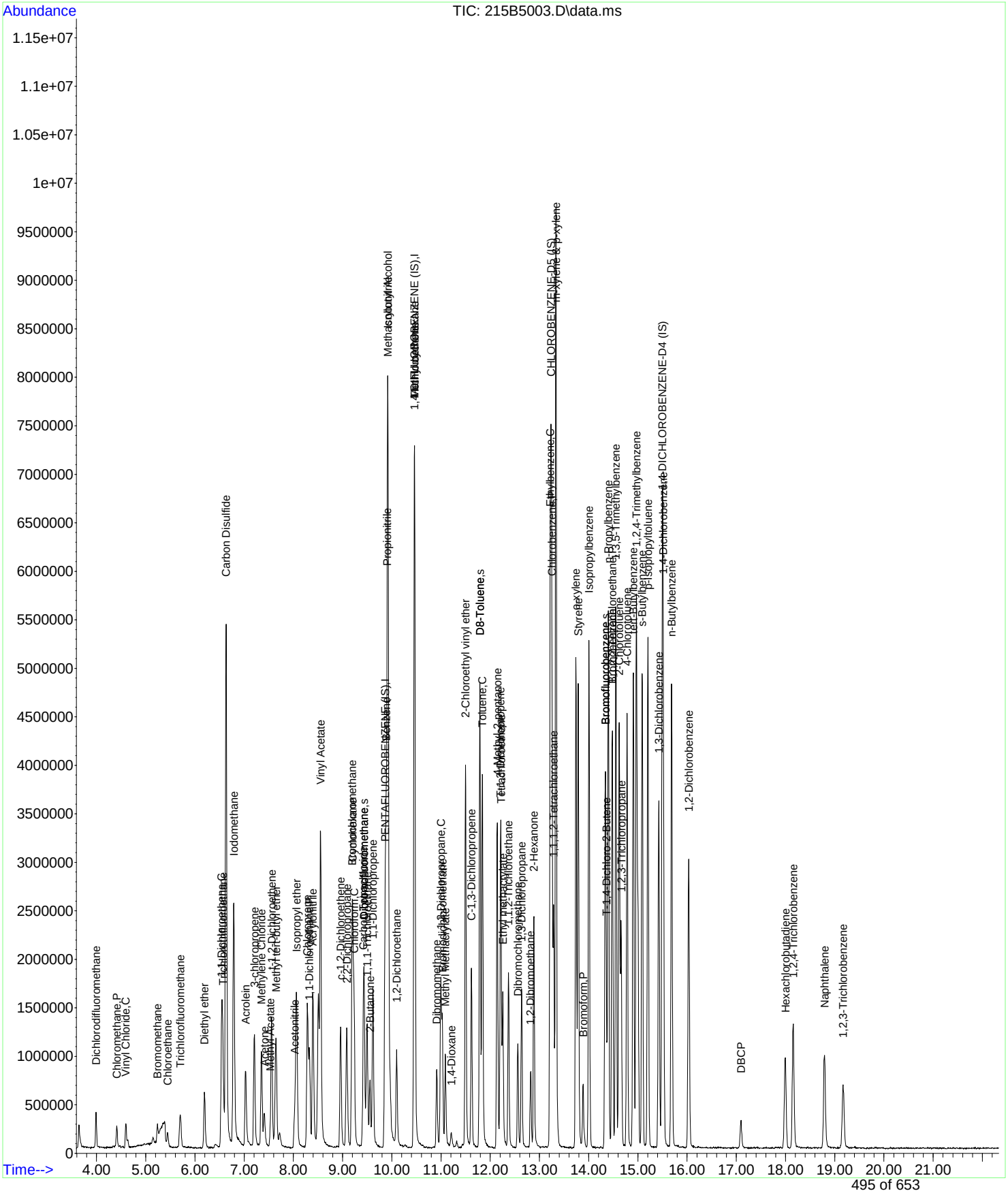
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3391722	48.16 ug/L #	96
54) 4-Methyl-2-pentanone	12.142	100	417218	215.67 ug/L #	74
56) Toluene	11.837	92	1847159	49.34 ug/L	95
57) T-1,3-Dichloropropene	12.207	75	988578	44.37 ug/L	91
58) Tetrachloroethene	12.219	164	472711	45.90 ug/L	97
59) Ethyl methacrylate	12.254	69	827588	41.53 ug/L	93
60) 1,1,2-Trichloroethane	12.371	97	618265	48.88 ug/L	93
61) Dibromochloromethane	12.559	129	601804	51.65 ug/L #	98
62) 1,3-Dichloropropane	12.636	76	1072885	45.81 ug/L #	85
63) 1,2-Dibromoethane	12.818	107	605986	51.47 ug/L	95
64) 2-Hexanone	12.883	43	1458383	169.15 ug/L #	91
65) Ethylbenzene	13.217	106	1205160	52.97 ug/L #	86
66) Chlorobenzene	13.253	112	2092217	55.47 ug/L	98
67) 1,1,1,2-Tetrachloroethane	13.288	131	655409	58.07 ug/L	96
68) m-xylene & p-xylene	13.335	106	2947159	111.60 ug/L	87
69) o-xylene	13.740	106	1513087	55.87 ug/L	91
70) Styrene	13.787	104	2634865	59.58 ug/L #	84
71) Bromoform	13.887	173	301466	45.36 ug/L	97
72) Isopropylbenzene	14.005	105	3921706	55.01 ug/L	95
74) Bromofluorobenzene	14.340	95	1673473	53.41 ug/L #	81
75) n-Propylbenzene	14.398	91	4976619	52.23 ug/L	94
76) 1,1,2,2-Tetrachloroethane	14.481	83	874116	49.45 ug/L	98
77) 1,2,3-Trichloropropane	14.663	61	259161m	40.10 ug/L	
78) T-1,4-Dichloro-2-Butene	14.357	53	252094	36.13 ug/L	98
80) Bromobenzene	14.481	156	816046	52.87 ug/L	84
81) 1,2,4-Trimethylbenzene	14.968	105	3695572	51.50 ug/L	94
82) 2-Chlorotoluene	14.622	91	3052576	50.61 ug/L	93
83) 4-Chlorotoluene	14.780	91	3230275	51.29 ug/L	94
84) tert-Butylbenzene	14.904	119	2920576	53.58 ug/L	89
85) 1,3,5-Trimethylbenzene	14.551	105	3576527	51.45 ug/L	95
86) p-Isopropyltoluene	15.203	119	3714868	54.86 ug/L	93
87) s-Butylbenzene	15.086	105	4285469	52.54 ug/L	97
88) 1,3-Dichlorobenzene	15.427	146	1721324	55.68 ug/L	94
89) 1,4-Dichlorobenzene	15.515	146	1718458	51.85 ug/L	91
90) n-Butylbenzene	15.685	91	3430258	48.72 ug/L	94
91) 1,2-Dichlorobenzene	16.032	146	1525449	52.27 ug/L	94
92) DBCP	17.095	157	101748	42.72 ug/L	94
93) Hexachlorobutadiene	18.000	225	207903	30.46 ug/L	88
94) 1,2,4-Trichlorobenzene	18.153	180	548735	37.46 ug/L	95
95) Naphthalene	18.793	128	1355795	43.70 ug/L #	91
96) 1,2,3-Trichlorobenzene	19.169	180	308391	35.82 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5003.D
Acq On : 5 Feb 2021 8:55 am
Operator : KKW
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Feb 05 10:16:30 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5005.D
Acq On : 5 Feb 2021 9:55 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 10:55:09 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	1403144	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2918098	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1740615	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1551647	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.440	113	744690	51.46	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.92%				
52) D8-Toluene	11.790	98	3386982	46.99	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.98%				
73) Bromofluorobenzene	14.334	95	1618692	52.07	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.14%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	287094	15.85	ug/L		99
3) Chloromethane	4.410	50	236763	11.36	ug/L		91
4) Vinyl Chloride	4.592	62	307751	18.18	ug/L		99
5) Bromomethane	5.238	94	69786	15.60	ug/L		94
6) Chloroethane	5.450	64	174805	23.47	ug/L		96
7) Trichlorofluoromethane	5.709	101	402240	19.09	ug/L		99
8) Diethyl ether	6.190	59	201427	17.20	ug/L		89
9) 1,1-Dichloroethene	6.537	96	250220	20.65	ug/L		80
10) Trichlorotrifluoroethane	6.560	151	164986	20.34	ug/L		97
11) Acrolein	7.031	56	173905	71.38	ug/L		99
12) Iodomethane	6.790	142	270965	20.86	ug/L	#	85
13) Carbon Disulfide	6.631	76	771403	19.44	ug/L	#	94
14) 3-chloropropene	7.201	41	359186	15.00	ug/L	#	89
15) Acetone	7.407	43	242371	73.52	ug/L		93
16) Methylene Chloride	7.348	84	288042	19.61	ug/L		78
17) Methyl Acetate	7.530	43	139001	13.49	ug/L	#	90
18) t-1,2-Dichloroethene	7.559	96	283973	20.26	ug/L		85
19) Methyl tert-butyl ether	7.642	73	720963	20.32	ug/L		91
20) Acetonitrile	8.065	41	229411	85.84	ug/L	#	89
21) Isopropyl ether	8.065	45	751922	15.97	ug/L	#	85
22) Chloroprene	8.282	88	276343	20.58	ug/L		85
23) 1,1-Dichloroethane	8.323	63	528103	18.32	ug/L	#	98
24) Acrylonitrile	8.400	53	75322	17.30	ug/L	#	89
25) Vinyl Acetate	8.552	43	377336	12.77	ug/L	#	85
26) c-1,2-Dichloroethene	8.958	96	322712	21.74	ug/L		86
27) 2,2-Dichloropropane	9.087	77	453768	18.63	ug/L		98
28) Bromochloromethane	9.199	128	126772	24.17	ug/L		97
29) Cyclohexane	9.199	56	501284	15.98	ug/L		88
30) Chloroform	9.228	83	529242	19.22	ug/L		95
32) Dibromofluoromethane	9.440	113	744690	51.46	ug/L	#	89
33) 2-Butanone	9.557	72	137734	87.34	ug/L	#	64
34) 1,1,1-Trichloroethane	9.498	97	453015	19.93	ug/L		98
35) 1,1-Dichloropropene	9.616	75	413291	17.87	ug/L		91
36) Propionitrile	9.915	54	33073	16.76	ug/L	#	1
37) Methacrylonitrile	9.921	41	216173	22.18	ug/L		89
38) Isobutyl Alcohol	9.915	43	237012	201.10	ug/L	#	55
40) Carbon Tetrachloride	9.428	117	342579	15.67	ug/L		95
41) Benzene	9.886	78	1288119	19.31	ug/L		93
42) 1,2-Dichloroethane	10.098	62	389440	16.00	ug/L	#	94
43) Trichloroethene	10.456	130	301331	22.36	ug/L	#	92
44) Methyl cyclohexane	10.456	83	594874	17.77	ug/L		89
45) Dibromomethane	10.908	93	164609	17.37	ug/L		95
46) 1,2-Dichloropropane	10.991	63	300024	16.02	ug/L		94
47) Bromodichloromethane	11.026	83	354925	17.40	ug/L		97
48) Methyl Methacrylate	11.085	69	176696	14.26	ug/L	#	83
49) 1,4-Dioxane	11.208	88	56757	335.51	ug/L		94
50) 2-Chloroethyl vinyl ether	11.496	63	745166	79.26	ug/L	#	86
51) C-1,3-Dichloropropene	11.619	75	476187	17.24	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5005.D
Acq On : 5 Feb 2021 9:55 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 10:55:09 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

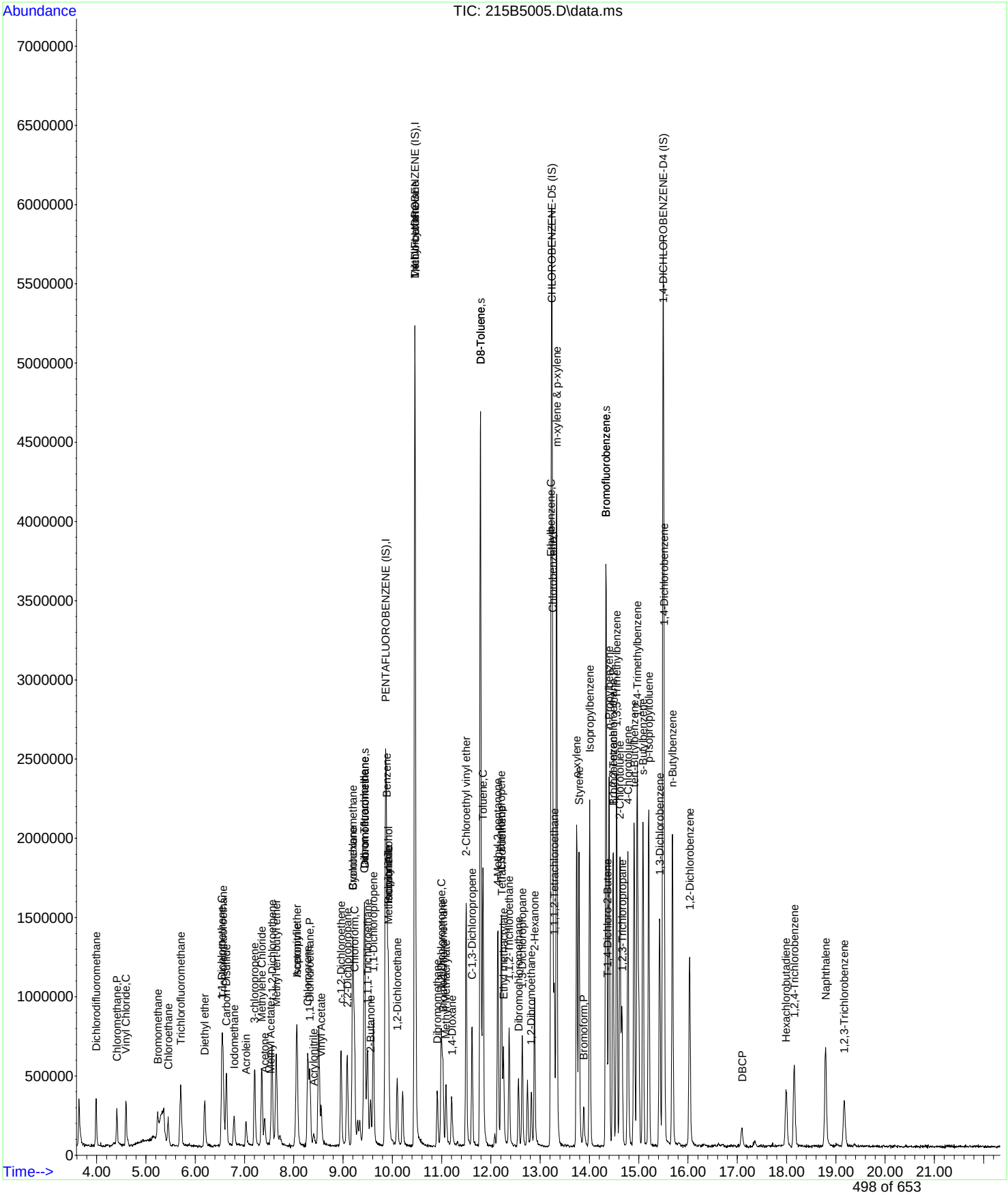
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3386982	46.99 ug/L #	96
54) 4-Methyl-2-pentanone	12.136	100	194600	98.29 ug/L #	61
56) Toluene	11.837	92	821744	22.13 ug/L	95
57) T-1,3-Dichloropropene	12.207	75	424883	19.22 ug/L	93
58) Tetrachloroethene	12.219	164	195545	19.14 ug/L	96
59) Ethyl methacrylate	12.254	69	338201	17.11 ug/L	96
60) 1,1,2-Trichloroethane	12.371	97	244058	19.45 ug/L	93
61) Dibromochloromethane	12.559	129	241546	22.56 ug/L #	97
62) 1,3-Dichloropropane	12.636	76	459837	19.79 ug/L #	83
63) 1,2-Dibromoethane	12.818	107	267949	22.94 ug/L	100
64) 2-Hexanone	12.883	43	592606	69.28 ug/L #	93
65) Ethylbenzene	13.217	106	488602	21.65 ug/L	91
66) Chlorobenzene	13.253	112	877662	23.46 ug/L	99
67) 1,1,1,2-Tetrachloroethane	13.288	131	259443	23.17 ug/L	95
68) m-xylene & p-xylene	13.335	106	1250434	47.73 ug/L	89
69) o-xylene	13.740	106	635287	23.64 ug/L	86
70) Styrene	13.787	104	1034400	23.58 ug/L #	87
71) Bromoform	13.881	173	118174	19.76 ug/L	98
72) Isopropylbenzene	14.005	105	1631733	23.07 ug/L	95
74) Bromofluorobenzene	14.334	95	1618692	52.07 ug/L #	82
75) n-Propylbenzene	14.399	91	2071771	21.92 ug/L #	95
76) 1,1,2,2-Tetrachloroethane	14.481	83	366068	20.88 ug/L	97
77) 1,2,3-Trichloropropane	14.663	61	101669	15.86 ug/L #	76
78) T-1,4-Dichloro-2-Butene	14.363	53	100254	14.48 ug/L #	59
80) Bromobenzene	14.481	156	325159	20.81 ug/L	90
81) 1,2,4-Trimethylbenzene	14.968	105	1545867	21.28 ug/L	95
82) 2-Chlorotoluene	14.616	91	1236834	20.25 ug/L #	91
83) 4-Chlorotoluene	14.780	91	1298804	20.37 ug/L	95
84) tert-Butylbenzene	14.910	119	1180371	21.39 ug/L	92
85) 1,3,5-Trimethylbenzene	14.551	105	1470876	20.90 ug/L	95
86) p-Isopropyltoluene	15.203	119	1468326	21.42 ug/L	94
87) s-Butylbenzene	15.086	105	1793933	21.73 ug/L	99
88) 1,3-Dichlorobenzene	15.427	146	682290	21.80 ug/L	94
89) 1,4-Dichlorobenzene	15.515	146	705799	21.04 ug/L	94
90) n-Butylbenzene	15.685	91	1380587	19.37 ug/L	96
91) 1,2-Dichlorobenzene	16.032	146	607580	20.57 ug/L	96
92) DBCP	17.101	157	45424	19.50 ug/L	95
93) Hexachlorobutadiene	17.988	225	77758	11.72 ug/L #	87
94) 1,2,4-Trichlorobenzene	18.153	180	222004	15.23 ug/L	91
95) Naphthalene	18.793	128	861520	27.85 ug/L #	90
96) 1,2,3-Trichlorobenzene	19.169	180	143791	17.08 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5005.D
Acq On : 5 Feb 2021 9:55 am
Operator : KKW
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Feb 05 10:55:09 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	1362429	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2888423	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1725791	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1561950	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	737756	52.50	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.00%				
52) D8-Toluene	11.790	98	3426380	48.03	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 96.06%				
73) Bromofluorobenzene	14.334	95	1687524	54.75	ug/L		-0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	269471	15.32	ug/L		95
3) Chloromethane	4.410	50	236982	11.71	ug/L		94
4) Vinyl Chloride	4.592	62	294432	17.91	ug/L		97
5) Bromomethane	5.233	94	71773	16.46	ug/L		88
6) Chloroethane	5.444	64	167767	23.19	ug/L		95
7) Trichlorofluoromethane	5.703	101	377906	18.48	ug/L		97
8) Diethyl ether	6.190	59	197350	17.35	ug/L		93
9) 1,1-Dichloroethene	6.543	96	226186	19.23	ug/L		81
10) Trichlorotrifluoroethane	6.566	151	155476	19.74	ug/L		99
11) Acrolein	7.036	56	162763	68.80	ug/L		94
12) Iodomethane	6.784	142	217863	17.27	ug/L	#	84
13) Carbon Disulfide	6.631	76	721691	18.73	ug/L	#	95
14) 3-chloropropene	7.201	41	348947	15.01	ug/L	#	89
15) Acetone	7.406	43	226126	70.64	ug/L		94
16) Methylene Chloride	7.348	84	282864	19.83	ug/L	#	74
17) Methyl Acetate	7.530	43	136211	13.62	ug/L		96
18) t-1,2-Dichloroethene	7.553	96	259644	19.08	ug/L		87
19) Methyl tert-butyl ether	7.641	73	666893	19.36	ug/L	#	91
20) Acetonitrile	8.053	41	234971	90.55	ug/L		95
21) Isopropyl ether	8.059	45	737861	16.14	ug/L	#	90
22) Chloroprene	8.288	88	246731	18.93	ug/L		94
23) 1,1-Dichloroethane	8.323	63	485183	17.33	ug/L		98
24) Acrylonitrile	8.411	53	68081	16.10	ug/L		99
25) Vinyl Acetate	8.552	43	393449	13.72	ug/L	#	91
26) c-1,2-Dichloroethene	8.958	96	308325	21.39	ug/L	#	83
27) 2,2-Dichloropropane	9.081	77	418914	17.72	ug/L		97
28) Bromochloromethane	9.193	128	127711	25.08	ug/L		94
29) Cyclohexane	9.204	56	464778	15.26	ug/L	#	84
30) Chloroform	9.234	83	533013	19.94	ug/L		96
32) Dibromofluoromethane	9.439	113	737756	52.50	ug/L	#	88
33) 2-Butanone	9.557	72	136208	88.93	ug/L	#	64
34) 1,1,1-Trichloroethane	9.498	97	414363	18.77	ug/L		98
35) 1,1-Dichloropropene	9.616	75	383887	17.10	ug/L		93
36) Propionitrile	9.909	54	30781	16.06	ug/L	#	1
37) Methacrylonitrile	9.921	41	205267	21.69	ug/L	#	84
38) Isobutyl Alcohol	9.915	43	215226	188.07	ug/L	#	51
40) Carbon Tetrachloride	9.416	117	326946m	15.11	ug/L		
41) Benzene	9.886	78	1214043	18.38	ug/L		95
42) 1,2-Dichloroethane	10.097	62	358902	14.90	ug/L	#	97
43) Trichloroethene	10.462	130	272680	20.45	ug/L	#	94
44) Methyl cyclohexane	10.462	83	566004	17.08	ug/L		88
45) Dibromomethane	10.914	93	155984	16.63	ug/L		91
46) 1,2-Dichloropropane	10.996	63	289082	15.61	ug/L		96
47) Bromodichloromethane	11.020	83	343561	17.03	ug/L	#	93
48) Methyl Methacrylate	11.090	69	163233	13.31	ug/L	#	84
49) 1,4-Dioxane	11.208	88	54924	328.01	ug/L		93
50) 2-Chloroethyl vinyl ether	11.496	63	740928	79.62	ug/L	#	89
51) C-1,3-Dichloropropene	11.619	75	429629	15.76	ug/L		95

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

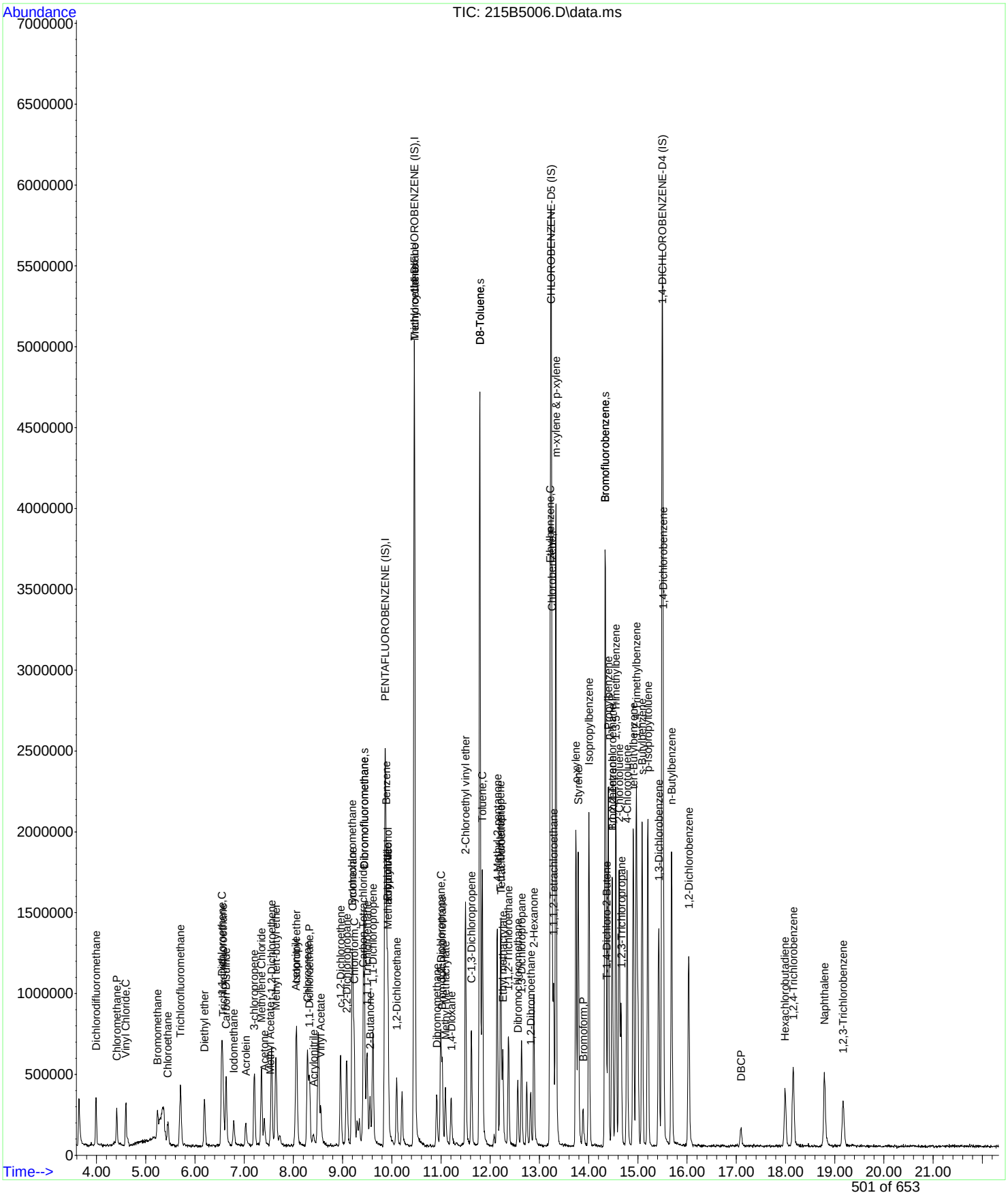
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3424055	47.99 ug/L	97
54) 4-Methyl-2-pentanone	12.142	100	169970	86.73 ug/L #	75
56) Toluene	11.837	92	804211	21.84 ug/L	92
57) T-1,3-Dichloropropene	12.207	75	406734	18.56 ug/L #	90
58) Tetrachloroethene	12.219	164	189329	18.69 ug/L	94
59) Ethyl methacrylate	12.254	69	329697	16.82 ug/L	96
60) 1,1,2-Trichloroethane	12.365	97	252501	20.29 ug/L	90
61) Dibromochloromethane	12.559	129	226372	21.40 ug/L	98
62) 1,3-Dichloropropane	12.636	76	440367	19.12 ug/L #	84
63) 1,2-Dibromoethane	12.824	107	239355	20.67 ug/L #	89
64) 2-Hexanone	12.883	43	596310	70.32 ug/L #	95
65) Ethylbenzene	13.217	106	458452	20.49 ug/L #	92
66) Chlorobenzene	13.253	112	835086	22.51 ug/L	98
67) 1,1,1,2-Tetrachloroethane	13.288	131	251193	22.63 ug/L	98
68) m-xylene & p-xylene	13.335	106	1169394	45.02 ug/L	92
69) o-xylene	13.740	106	589135	22.12 ug/L	91
70) Styrene	13.787	104	995003	22.87 ug/L #	85
71) Bromoform	13.887	173	106505	18.09 ug/L	98
72) Isopropylbenzene	14.005	105	1547298	22.07 ug/L	96
74) Bromofluorobenzene	14.334	95	1687524	54.75 ug/L #	78
75) n-Propylbenzene	14.398	91	1945965	20.76 ug/L	96
76) 1,1,2,2-Tetrachloroethane	14.481	83	340771	19.60 ug/L	98
77) 1,2,3-Trichloropropane	14.663	61	101325m	15.94 ug/L	
78) T-1,4-Dichloro-2-Butene	14.363	53	94589	13.78 ug/L #	16
80) Bromobenzene	14.481	156	319876	20.34 ug/L #	84
81) 1,2,4-Trimethylbenzene	14.968	105	1432516	19.59 ug/L	95
82) 2-Chlorotoluene	14.622	91	1144035	18.61 ug/L	94
83) 4-Chlorotoluene	14.780	91	1246716	19.42 ug/L	95
84) tert-Butylbenzene	14.910	119	1133593	20.41 ug/L	90
85) 1,3,5-Trimethylbenzene	14.551	105	1374291	19.40 ug/L	92
86) p-Isopropyltoluene	15.203	119	1401939	20.32 ug/L	94
87) s-Butylbenzene	15.086	105	1696419	20.41 ug/L	98
88) 1,3-Dichlorobenzene	15.427	146	660967	20.98 ug/L	94
89) 1,4-Dichlorobenzene	15.515	146	689938	20.43 ug/L	93
90) n-Butylbenzene	15.685	91	1323589	18.45 ug/L	95
91) 1,2-Dichlorobenzene	16.032	146	617121	20.75 ug/L	92
92) DBCP	17.095	157	40480	17.32 ug/L	97
93) Hexachlorobutadiene	17.988	225	84321	12.60 ug/L #	92
94) 1,2,4-Trichlorobenzene	18.153	180	203291	13.86 ug/L	90
95) Naphthalene	18.787	128	618953	20.03 ug/L #	89
96) 1,2,3-Trichlorobenzene	19.169	180	131501	15.56 ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5006.D
Acq On : 5 Feb 2021 10:25 am
Operator : KKW
Sample : BSD1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Feb 05 10:55:20 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5008.D
Acq On : 5 Feb 2021 11:24 am
Operator : KKW
Sample : BLK1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 05 13:07:33 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	1327701	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2812736	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1652339	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1515326	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	717998	52.43 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.86%		
52) D8-Toluene	11.790	98	3327175	47.89 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 95.78%		
73) Bromofluorobenzene	14.340	95	1571352	53.25 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.50%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.840	85	1469	N.D.	
3) Chloromethane	4.381	50	1355	N.D.	
4) Vinyl Chloride	4.498	62	1678	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.397	64	1059	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.631	76	4561	N.D.	
14) 3-chloropropene	7.189	41	1062	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.354	84	2334	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.559	96	1138	N.D.	
19) Methyl tert-butyl ether	7.653	73	1420	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.076	45	1642	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.270	63	1802	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.570	43	1119	N.D.	
26) c-1,2-Dichloroethene	9.052	96	1048	N.D.	
27) 2,2-Dichloropropane	9.152	77	1002	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.152	56	1082	N.D.	
30) Chloroform	9.257	83	1060	N.D.	
32) Dibromofluoromethane	9.434	113	717998	52.43 ug/L #	88
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.622	75	1197	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.363	117	3616	N.D.	
41) Benzene	9.915	78	4332	N.D.	
42) 1,2-Dichloroethane	10.104	62	1854	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.914	93	1405	N.D.	
46) 1,2-Dichloropropane	10.950	63	1365	N.D.	
47) Bromodichloromethane	11.114	83	1870	N.D.	
48) Methyl Methacrylate	11.114	69	1104	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	11.543	63	1105	N.D.	
51) C-1,3-Dichloropropene	11.637	75	2100	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5008.D
Acq On : 5 Feb 2021 11:24 am
Operator : KKW
Sample : BLK1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 05 13:07:33 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

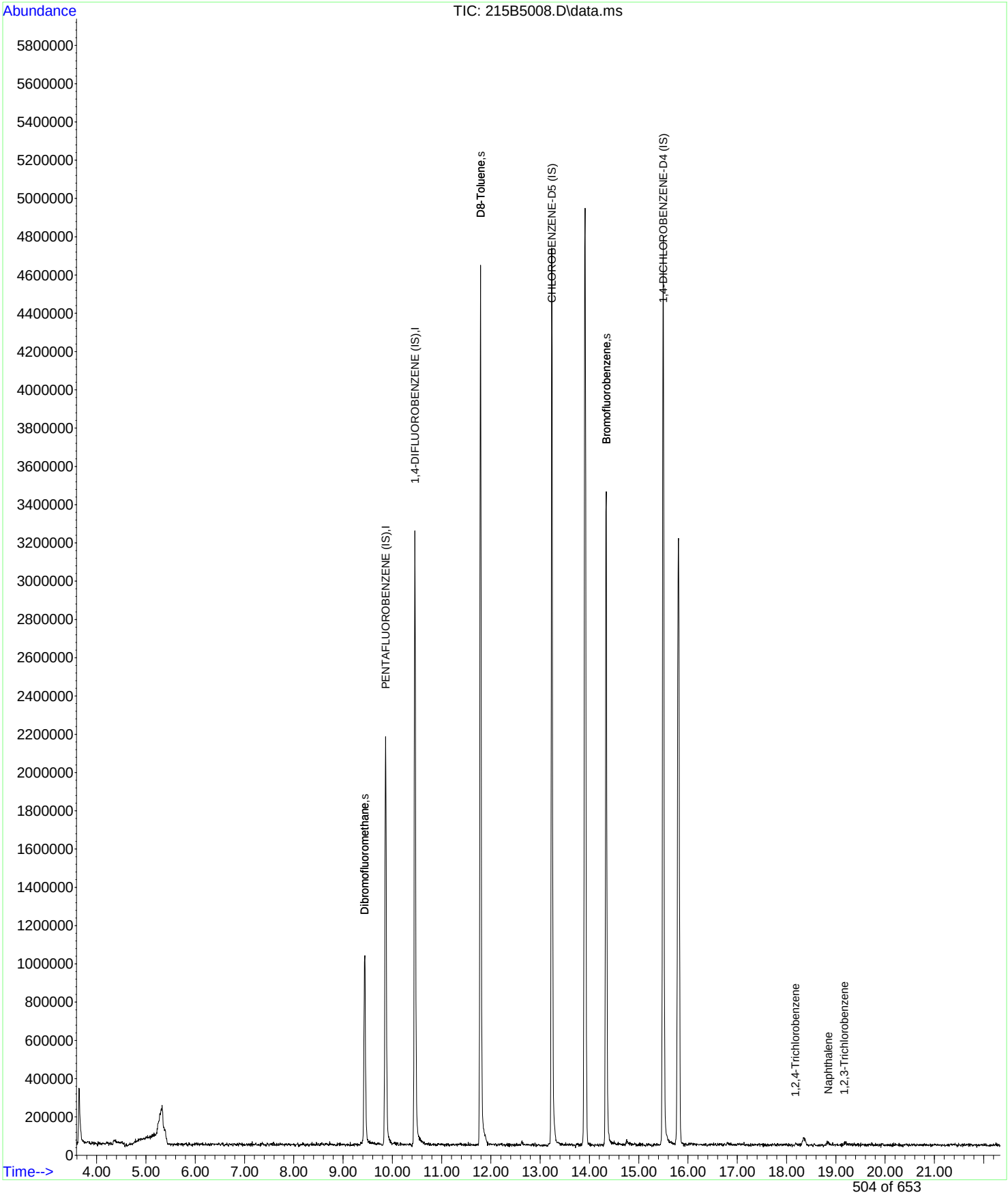
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3327175	47.89 ug/L	97
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.796	92	2037	N.D.	
57) T-1,3-Dichloropropene	12.213	75	2489	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.166	69	1314	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	12.495	129	1087	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.865	107	1064	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.353	106	1346	N.D.	
66) Chlorobenzene	13.235	112	2937	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.353	106	1346	N.D.	
69) o-xylene	13.899	106	1947	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	14.011	105	2115	N.D.	
74) Bromofluorobenzene	14.340	95	1571352	53.25 ug/L #	81
75) n-Propylbenzene	14.416	91	3490	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.322	83	1478	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	14.381	53	1106	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	4483	N.D.	
82) 2-Chlorotoluene	14.616	91	2615	N.D.	
83) 4-Chlorotoluene	14.798	91	3807	N.D.	
84) tert-Butylbenzene	14.922	119	3083	N.D.	
85) 1,3,5-Trimethylbenzene	14.551	105	3275	N.D.	
86) p-Isopropyltoluene	15.198	119	3767	N.D.	
87) s-Butylbenzene	15.086	105	3273	N.D.	
88) 1,3-Dichlorobenzene	15.427	146	3395	N.D.	
89) 1,4-Dichlorobenzene	15.538	146	5597	N.D.	
90) n-Butylbenzene	15.721	91	3282	N.D.	
91) 1,2-Dichlorobenzene	16.032	146	2130	N.D.	
92) DBCP	0.000		0	N.D. d	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	18.177	180	5175	0.37 ug/L #	88
95) Naphthalene	18.846	128	19689	0.67 ug/L #	86
96) 1,2,3-Trichlorobenzene	19.170	180	2620	0.33 ug/L #	22

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5008.D
Acq On : 5 Feb 2021 11:24 am
Operator : KKW
Sample : BLK1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Feb 05 13:07:33 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5009.D
Acq On : 5 Feb 2021 11:53 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 05 13:08:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	1311528	50.00	ug/L	#	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2733912	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1652764	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1510157	50.00	ug/L	#	0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	707076	52.27	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.54%				
52) D8-Toluene	11.790	98	3163625	46.85	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.70%				
73) Bromofluorobenzene	14.340	95	1495989	50.68	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.36%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	13422	0.79	ug/L	#	88
3) Chloromethane	4.416	50	16613	0.85	ug/L	#	76
4) Vinyl Chloride	4.592	62	13956	0.88	ug/L	#	38
5) Bromomethane	5.233	94	15368	3.88	ug/L	#	90
6) Chloroethane	5.468	64	7332	1.05	ug/L	#	79
7) Trichlorofluoromethane	5.708	101	15922	0.81	ug/L	#	77
8) Diethyl ether	6.184	59	10583	0.97	ug/L		92
9) 1,1-Dichloroethene	6.555	96	10576	0.93	ug/L	#	79
10) Trichlorotrifluoroethane	6.560	151	7042	0.93	ug/L	#	78
11) Acrolein	7.036	56	17735	7.79	ug/L		92
12) Iodomethane	6.790	142	23456	1.93	ug/L	#	83
13) Carbon Disulfide	6.637	76	140927	3.80	ug/L		98
14) 3-chloropropene	7.218	41	13957	0.62	ug/L	#	88
15) Acetone	7.430	43	9527	3.09	ug/L	#	86
16) Methylene Chloride	7.348	84	11625	0.85	ug/L	#	74
17) Methyl Acetate	7.553	43	8110	0.84	ug/L	#	74
18) t-1,2-Dichloroethene	7.559	96	10193	0.78	ug/L	#	83
19) Methyl tert-butyl ether	7.647	73	27515	0.83	ug/L	#	91
20) Acetonitrile	8.047	41	15129	6.06	ug/L	#	60
21) Isopropyl ether	8.076	45	26233	0.60	ug/L	#	71
22) Chloroprene	8.300	88	10728	0.85	ug/L	#	65
23) 1,1-Dichloroethane	8.329	63	22655	0.84	ug/L	#	91
24) Acrylonitrile	8.411	53	26094	6.41	ug/L		98
25) Vinyl Acetate	8.564	43	75072	2.72	ug/L	#	93
26) c-1,2-Dichloroethene	8.969	96	13452	0.97	ug/L		95
27) 2,2-Dichloropropane	9.081	77	19413	0.86	ug/L	#	95
28) Bromochloromethane	9.193	128	7363	1.50	ug/L	#	77
29) Cyclohexane	9.204	56	15605	0.53	ug/L	#	82
30) Chloroform	9.240	83	23989	0.93	ug/L		91
32) Dibromofluoromethane	9.439	113	707076	52.27	ug/L	#	89
33) 2-Butanone	9.575	72	5711	3.91	ug/L	#	59
34) 1,1,1-Trichloroethane	9.504	97	16739	0.79	ug/L	#	56
35) 1,1-Dichloropropene	9.622	75	16989	0.79	ug/L		95
36) Propionitrile	9.921	54	12194	6.61	ug/L	#	82
37) Methacrylonitrile	9.927	41	61907	6.80	ug/L		88
38) Isobutyl Alcohol	9.921	43	11475	10.42	ug/L	#	49
40) Carbon Tetrachloride	9.434	117	15952	0.78	ug/L	#	67
41) Benzene	9.898	78	51143	0.82	ug/L		95
42) 1,2-Dichloroethane	10.098	62	17577	0.77	ug/L		97
43) Trichloroethene	10.462	130	13464	1.07	ug/L	#	1
44) Methyl cyclohexane	10.456	83	58606	1.87	ug/L	#	58
45) Dibromomethane	10.914	93	9402	1.06	ug/L	#	79
46) 1,2-Dichloropropane	10.996	63	13890	0.81	ug/L	#	92
47) Bromodichloromethane	11.026	83	16395	0.89	ug/L	#	78
48) Methyl Methacrylate	11.102	69	6774	0.58	ug/L	#	49
49) 1,4-Dioxane	11.202	88	1127	7.11	ug/L	#	1
50) 2-Chloroethyl vinyl ether	11.502	63	24181	2.75	ug/L	#	74
51) C-1,3-Dichloropropene	11.631	75	22968	0.92	ug/L		89

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5009.D
Acq On : 5 Feb 2021 11:53 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 8 Sample Multiplier: 1

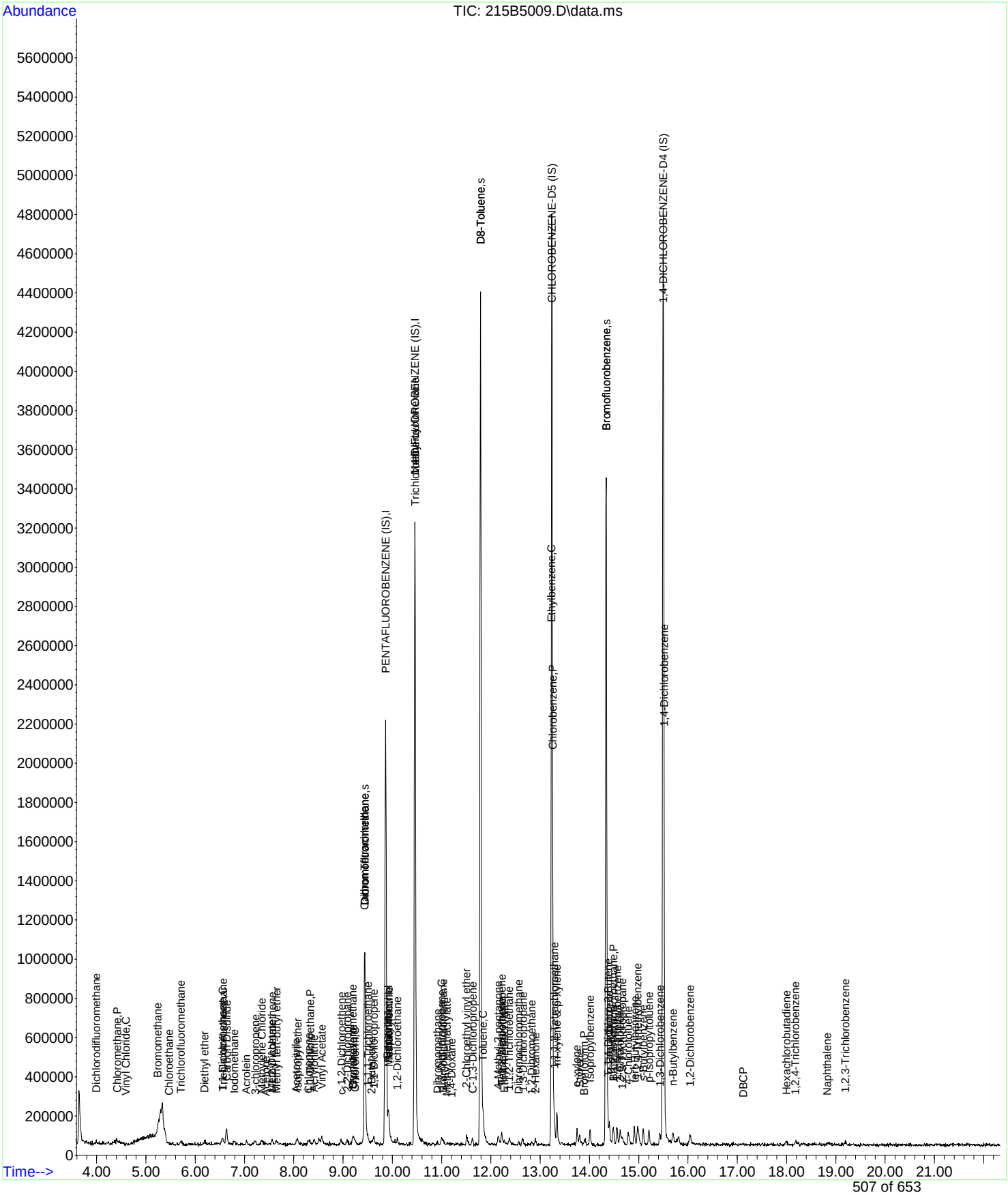
Quant Time: Feb 05 13:08:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.790	98	3163420	46.85	ug/L		95
54) 4-Methyl-2-pentanone	12.148	100	5375	2.90	ug/L	#	85
56) Toluene	11.837	92	34517	0.98	ug/L	#	93
57) T-1,3-Dichloropropene	12.219	75	15451	0.74	ug/L	#	72
58) Tetrachloroethene	12.224	164	8480	0.87	ug/L	#	80
59) Ethyl methacrylate	12.272	69	11366	0.61	ug/L	#	81
60) 1,1,2-Trichloroethane	12.371	97	10661	0.89	ug/L	#	77
61) Dibromochloromethane	12.559	129	10161	1.06	ug/L		89
62) 1,3-Dichloropropane	12.653	76	20086	0.91	ug/L	#	83
63) 1,2-Dibromoethane	12.824	107	11265	1.02	ug/L	#	88
64) 2-Hexanone	12.900	43	22542	2.78	ug/L	#	76
65) Ethylbenzene	13.223	106	19923	0.93	ug/L	#	85
66) Chlorobenzene	13.253	112	38017	1.07	ug/L		93
67) 1,1,1,2-Tetrachloroethane	13.288	131	14622	1.38	ug/L		91
68) m-xylene & p-xylene	13.335	106	54700	2.20	ug/L		84
69) o-xylene	13.740	106	24586	0.96	ug/L		90
70) Styrene	13.799	104	35156	0.84	ug/L	#	83
71) Bromoform	13.887	173	3689	0.70	ug/L	#	77
72) Isopropylbenzene	14.011	105	61427	0.91	ug/L	#	92
74) Bromofluorobenzene	14.340	95	1495989	50.68	ug/L		84
75) n-Propylbenzene	14.404	91	80887	0.90	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.487	83	16921	1.02	ug/L	#	98
77) 1,2,3-Trichloropropane	14.663	61	4882	0.80	ug/L	#	60
78) T-1,4-Dichloro-2-Butene	14.381	53	5894	0.90	ug/L	#	51
80) Bromobenzene	14.487	156	17559	1.15	ug/L		87
81) 1,2,4-Trimethylbenzene	14.974	105	59435	0.84	ug/L		94
82) 2-Chlorotoluene	14.622	91	49661	0.84	ug/L	#	82
83) 4-Chlorotoluene	14.786	91	55103	0.89	ug/L		95
84) tert-Butylbenzene	14.916	119	48324	0.90	ug/L	#	82
85) 1,3,5-Trimethylbenzene	14.563	105	59994	0.88	ug/L		95
86) p-Isopropyltoluene	15.209	119	55544	0.83	ug/L		95
87) s-Butylbenzene	15.092	105	60341	0.75	ug/L	#	92
88) 1,3-Dichlorobenzene	15.433	146	32996	1.08	ug/L	#	86
89) 1,4-Dichlorobenzene	15.515	146	33745	1.03	ug/L	#	1
90) n-Butylbenzene	15.691	91	45849	0.66	ug/L	#	88
91) 1,2-Dichlorobenzene	16.038	146	27943	0.97	ug/L	#	87
92) DBCP	17.119	157	2616	1.19	ug/L		91
93) Hexachlorobutadiene	17.994	225	3671	0.58	ug/L	#	74
94) 1,2,4-Trichlorobenzene	18.176	180	10435m	0.74	ug/L		
95) Naphthalene	18.823	128	12981	0.44	ug/L	#	79
96) 1,2,3-Trichlorobenzene	19.193	180	6644	0.84	ug/L	#	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5009.D
Acq On : 5 Feb 2021 11:53 am
Operator : KKW
Sample : CRL1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Feb 05 13:08:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5010.D
Acq On : 5 Feb 2021 12:23 pm
Operator : KKW
Sample : AE00180-18RE1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 05 13:10:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	1301216	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2638883	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.235	82	1521247	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1422637	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.439	113	704926	52.53 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.06%		
52) D8-Toluene	11.790	98	3060241	46.95 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.90%		
73) Bromofluorobenzene	14.340	95	1504509	55.38 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.981	85	1091	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.598	62	86631	5.52 ug/L	94
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.409	64	1275	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.126	59	1350	N.D.	
9) 1,1-Dichloroethene	6.572	96	1099	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.649	76	6864	N.D.	
14) 3-chloropropene	7.224	41	1007	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.348	84	1274	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.559	96	17972	1.38 ug/L #	82
19) Methyl tert-butyl ether	7.659	73	1970	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.135	45	1755	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.341	63	1386	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.582	43	1129	N.D.	
26) c-1,2-Dichloroethene	8.958	96	1416461	102.87 ug/L	86
27) 2,2-Dichloropropane	9.093	77	1163	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.439	113	704926	52.53 ug/L #	89
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	9.410	97	1327	N.D.	
35) 1,1-Dichloropropene	9.627	75	1336	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.921	41	1168	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.904	78	3303	N.D.	
42) 1,2-Dichloroethane	10.162	62	1898	N.D.	
43) Trichloroethene	10.462	130	121527	9.97 ug/L #	81
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	10.973	83	1334	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	11.220	88	2850	18.63 ug/L #	57
50) 2-Chloroethyl vinyl ether	11.566	63	1068	N.D.	
51) C-1,3-Dichloropropene	11.790	75	1638	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5010.D
Acq On : 5 Feb 2021 12:23 pm
Operator : KKW
Sample : AE00180-18RE1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 05 13:10:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

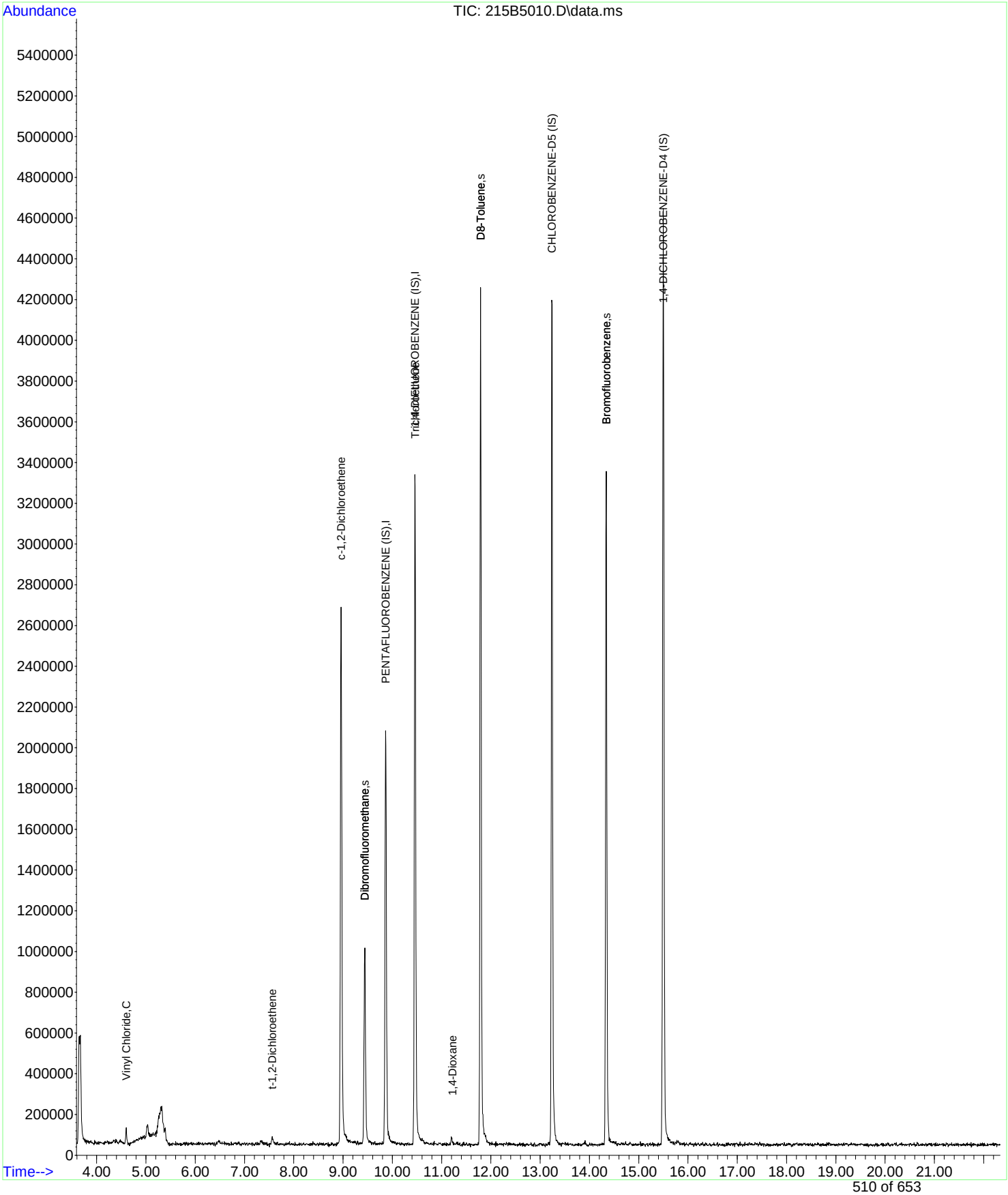
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3058517	46.92 ug/L #	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	1261	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.236	69	1222	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.706	76	1003	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.930	43	1042	N.D.	
65) Ethylbenzene	13.370	106	1087	N.D.	
66) Chlorobenzene	13.241	112	1577	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.370	106	1087	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.911	105	1829	N.D.	
74) Bromofluorobenzene	14.340	95	1504509	55.38 ug/L #	82
75) n-Propylbenzene	14.475	91	1037	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.340	83	1632	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.328	156	1080	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	1390	N.D.	
82) 2-Chlorotoluene	14.475	91	1037	N.D.	
83) 4-Chlorotoluene	14.833	91	2383	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.604	105	1062	N.D.	
86) p-Isopropyltoluene	15.209	119	1579	N.D.	
87) s-Butylbenzene	15.098	105	1942	N.D.	
88) 1,3-Dichlorobenzene	15.427	146	1497	N.D.	
89) 1,4-Dichlorobenzene	15.521	146	3723	N.D.	
90) n-Butylbenzene	15.726	91	1603	N.D.	
91) 1,2-Dichlorobenzene	16.049	146	1833	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	18.229	180	1524	N.D.	
95) Naphthalene	18.858	128	5091	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5010.D
Acq On : 5 Feb 2021 12:23 pm
Operator : KKW
Sample : AE00180-18RE1
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Feb 05 13:10:08 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5011.D
Acq On : 5 Feb 2021 12:53 pm
Operator : KKW
Sample : AE00180-19RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 05 13:17:07 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	1217200	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2446801	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1419980	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1365299	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.440	113	642881	51.21 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.42%		
52) D8-Toluene	11.790	98	2834450	46.90 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 93.80%		
73) Bromofluorobenzene	14.340	95	1358841	53.58 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d	
3) Chloromethane	4.428	50	2249	N.D.	
4) Vinyl Chloride	4.598	62	21106	1.44 ug/L	93
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	5.750	101	1063	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.543	96	1334	N.D.	
10) Trichlorotrifluoroethane	6.578	151	5117	0.73 ug/L #	73
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.619	76	1968	N.D.	
14) 3-chloropropene	7.295	41	1557	N.D.	
15) Acetone	7.418	43	29832	10.43 ug/L	98
16) Methylene Chloride	7.366	84	1416	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.571	96	5716	0.47 ug/L #	11
19) Methyl tert-butyl ether	7.747	73	1472	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.082	45	1217	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.623	43	1142	N.D.	
26) c-1,2-Dichloroethene	8.970	96	193756	15.04 ug/L	85
27) 2,2-Dichloropropane	8.981	77	1695	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.240	83	1151	N.D.	
32) Dibromofluoromethane	9.440	113	642997	51.22 ug/L #	88
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.469	75	1128	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.951	41	1407	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.904	78	5148	N.D.	
42) 1,2-Dichloroethane	10.104	62	2158	N.D.	
43) Trichloroethene	10.468	130	73428	6.50 ug/L #	61
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	10.897	63	1052	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	11.055	69	1047	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.637	75	1149	N.D.	

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5011.D
Acq On : 5 Feb 2021 12:53 pm
Operator : KKW
Sample : AE00180-19RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

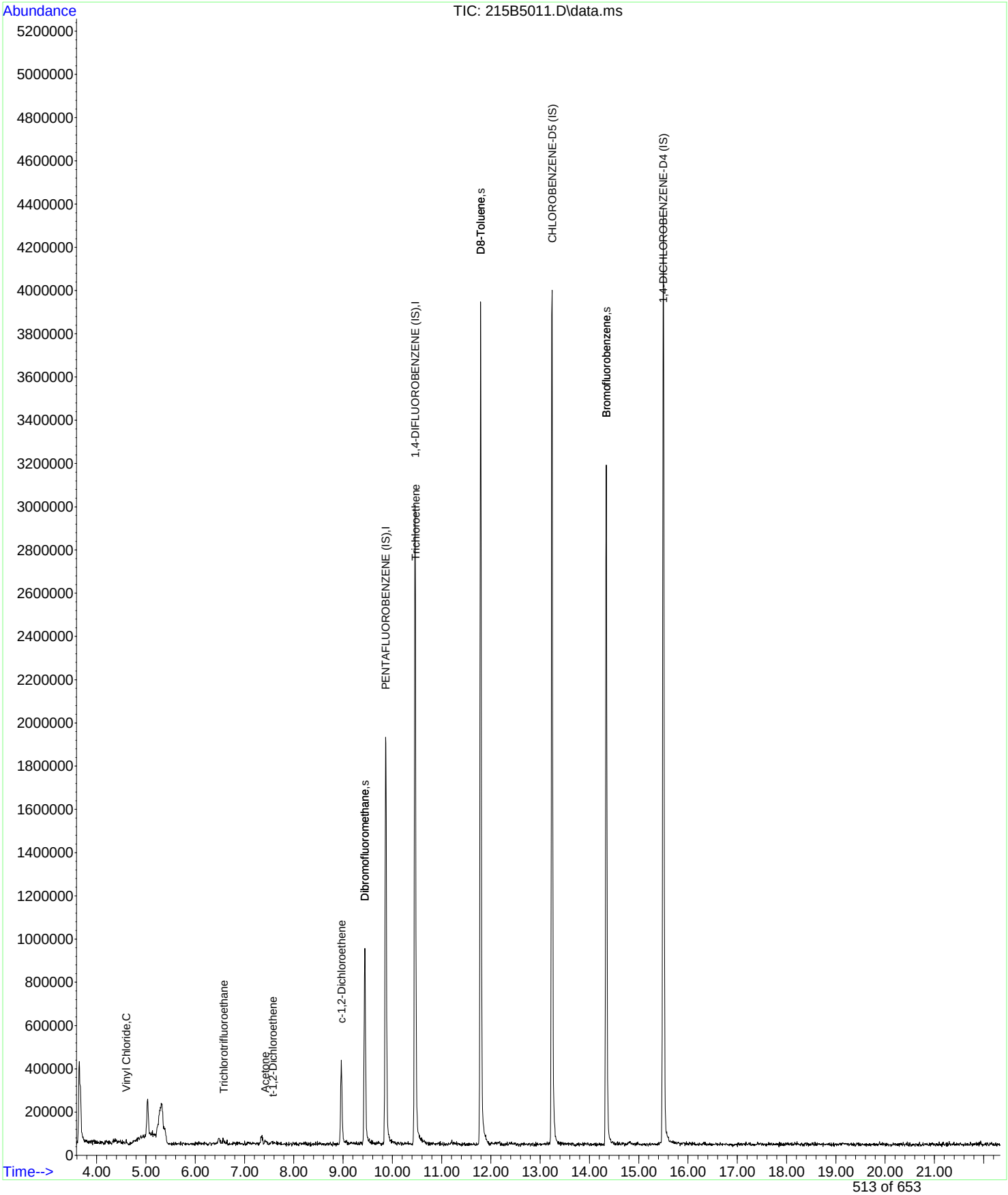
Quant Time: Feb 05 13:17:07 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2833217	46.88 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.849	92	2039	N.D.	
57) T-1,3-Dichloropropene	12.189	75	1268	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.341	106	1477	N.D.	
66) Chlorobenzene	13.265	112	1323	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.341	106	1477	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.852	104	1304	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.023	105	1186	N.D.	
74) Bromofluorobenzene	14.340	95	1358841	53.58 ug/L	84
75) n-Propylbenzene	14.387	91	1285	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.340	83	1210	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.998	105	1523	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.916	119	1261	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.104	105	1652	N.D.	
88) 1,3-Dichlorobenzene	15.433	146	1524	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	4901	N.D.	
90) n-Butylbenzene	15.703	91	1590	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.882	128	1155	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5011.D
Acq On : 5 Feb 2021 12:53 pm
Operator : KKW
Sample : AE00180-19RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Feb 05 13:17:07 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5012.D
Acq On : 5 Feb 2021 1:22 pm
Operator : KKW
Sample : AE00180-18RE2@5X
Misc : 5
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 05 14:03:25 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.868	168	1236391	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2433174	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1431100	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1339352	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.445	113	647027	50.74 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.48%		
52) D8-Toluene	11.790	98	2789498	46.41 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.82%		
73) Bromofluorobenzene	14.340	95	1346935	52.70 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.40%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	4.428	50	2528	N.D.	
4) Vinyl Chloride	4.598	62	10199	0.68 ug/L #	55
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.415	64	1305	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.214	59	1050	N.D.	
9) 1,1-Dichloroethene	6.631	96	1321	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.801	142	2172	N.D.	
13) Carbon Disulfide	6.637	76	3511	N.D.	
14) 3-chloropropene	7.213	41	1341	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.360	84	2139	N.D.	
17) Methyl Acetate	7.442	43	1113	N.D.	
18) t-1,2-Dichloroethene	7.565	96	2242	N.D.	
19) Methyl tert-butyl ether	7.630	73	1110	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	0.000		0	N.D.	
26) c-1,2-Dichloroethene	8.969	96	211296	16.15 ug/L	85
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.081	56	1046	N.D.	
30) Chloroform	9.240	83	1086	N.D.	
32) Dibromofluoromethane	9.445	113	647027	50.74 ug/L #	86
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	10.056	41	1309	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.357	117	3341	N.D.	
41) Benzene	9.892	78	4379	N.D.	
42) 1,2-Dichloroethane	10.186	62	1015	N.D.	
43) Trichloroethene	10.462	130	18010	1.60 ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.932	93	1049	N.D.	
46) 1,2-Dichloropropane	11.014	63	1485	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	11.173	69	1525	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.766	75	1633	N.D.	

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5012.D
Acq On : 5 Feb 2021 1:22 pm
Operator : KKW
Sample : AE00180-18RE2@5X
Misc : 5
ALS Vial : 11 Sample Multiplier: 1

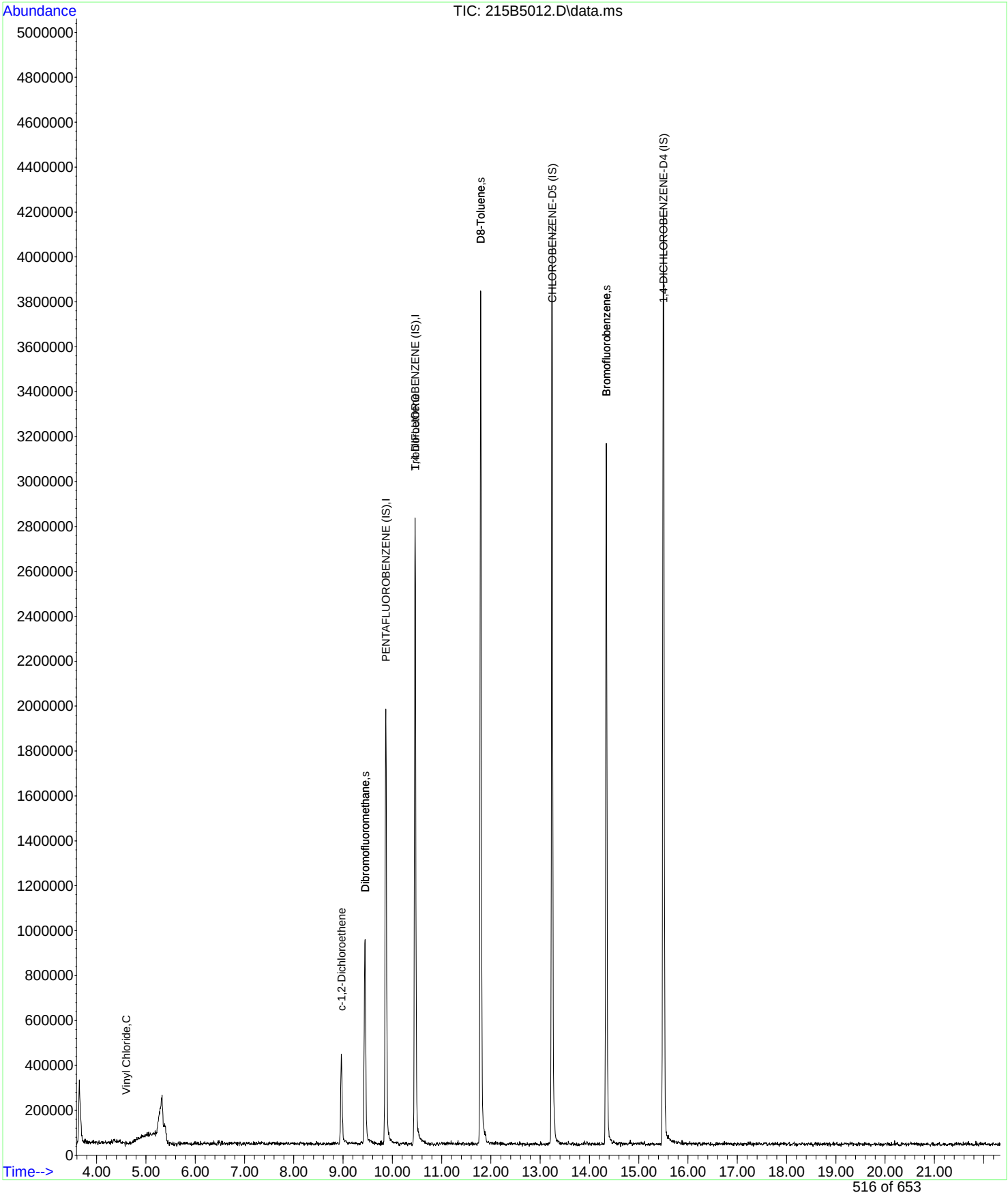
Quant Time: Feb 05 14:03:25 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	2788214	46.39 ug/L #	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.848	92	1757	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.195	69	1067	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.852	104	1501	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.011	105	2077	N.D.	
74) Bromofluorobenzene	14.340	95	1346935	52.70 ug/L	88
75) n-Propylbenzene	14.434	91	1044	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.346	83	2105	N.D.	
77) 1,2,3-Trichloropropane	14.704	61	1036	N.D.	
78) T-1,4-Dichloro-2-Butene	14.299	53	1005	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	15.121	105	1026	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	15.004	119	1099	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.121	105	1026	N.D.	
88) 1,3-Dichlorobenzene	15.503	146	2323	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	2323	N.D.	
90) n-Butylbenzene	15.697	91	1039	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.858	128	1051	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5012.D
Acq On : 5 Feb 2021 1:22 pm
Operator : KKW
Sample : AE00180-18RE2@5X
Misc : 5
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Feb 05 14:03:25 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5013.D
Acq On : 5 Feb 2021 1:52 pm
Operator : KKW
Sample : AE00180-20RE1@25X
Misc : 25
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 08 07:02:37 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.868	168	1218553	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2459794	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1415039	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1371545	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.445	113	634471	50.48	ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.96%			
52) D8-Toluene	11.796	98	2816434	46.36	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.72%			
73) Bromofluorobenzene	14.346	95	1341802	53.10	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d	
3) Chloromethane	4.363	50	1075	N.D.		
4) Vinyl Chloride	4.604	62	126173	8.58	ug/L #	88
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	6.278	59	1102	N.D.		
9) 1,1-Dichloroethene	6.555	96	1498	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.631	76	2428	N.D.		
14) 3-chloropropene	7.224	41	1559	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	7.354	84	1253	N.D.		
17) Methyl Acetate	7.565	43	1347	N.D.		
18) t-1,2-Dichloroethene	7.565	96	1399	N.D.		
19) Methyl tert-butyl ether	7.577	73	1383	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.170	45	1266	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.452	63	2034	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.552	43	1019	N.D.		
26) c-1,2-Dichloroethene	8.964	96	666048	51.66	ug/L	84
27) 2,2-Dichloropropane	8.928	77	1039	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.063	56	1093	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.445	113	635116	50.53	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	9.915	78	4623	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	17167	1.51	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.838	63	1486	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	11.214	69	1005	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.637	75	1082	N.D.		

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5013.D
Acq On : 5 Feb 2021 1:52 pm
Operator : KKW
Sample : AE00180-20RE1@25X
Misc : 25
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 08 07:02:37 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

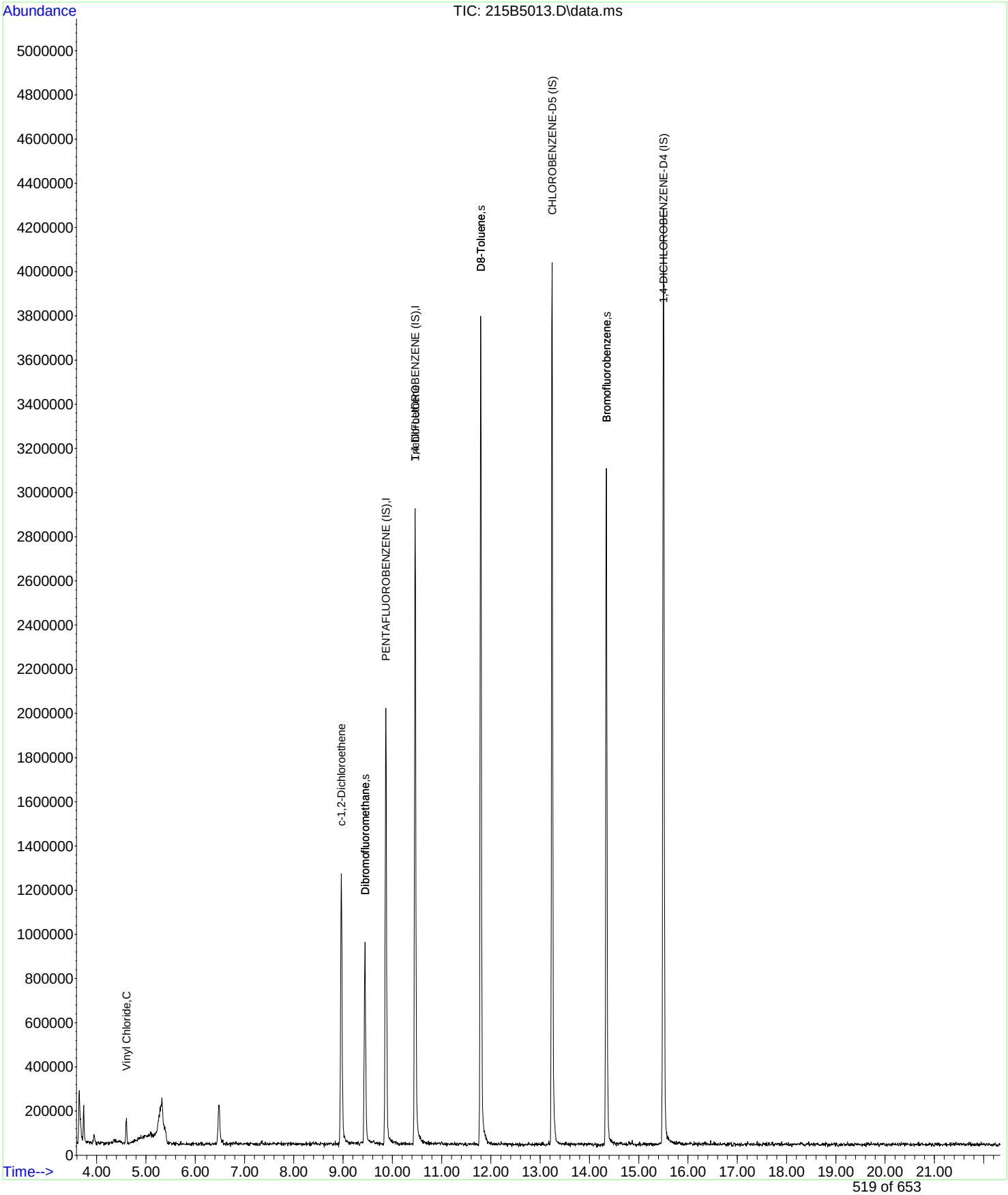
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.796	98	2815690	46.34 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.854	92	1250	N.D.	
57) T-1,3-Dichloropropene	12.230	75	1085	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.894	43	1259	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.346	95	1341802	53.10 ug/L	85
75) n-Propylbenzene	14.422	91	1035	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.481	83	1195	N.D.	
77) 1,2,3-Trichloropropane	14.663	61	1010	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.469	156	1209	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	14.633	91	1389	N.D.	
83) 4-Chlorotoluene	14.633	91	1389	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.221	119	1336	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.515	146	2091	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	2091	N.D.	
90) n-Butylbenzene	15.697	91	1259	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.940	128	1625	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5013.D
Acq On : 5 Feb 2021 1:52 pm
Operator : KKW
Sample : AE00180-20RE1@25X
Misc : 25
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Feb 08 07:02:37 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5014.D
Acq On : 5 Feb 2021 2:21 pm
Operator : KKW
Sample : AE00180-21RE1
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 08 07:02:41 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.868	168	1225894	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2468436	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1373917	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1368193	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.439	113	648016	51.25 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.50%		
52) D8-Toluene	11.795	98	2778070	45.56 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 91.12%		
73) Bromofluorobenzene	14.340	95	1296758	52.85 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.70%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.952	85	2408	N.D.	
3) Chloromethane	4.422	50	2985	N.D.	
4) Vinyl Chloride	4.604	62	177274	11.99 ug/L	97
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.520	64	1224	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.549	96	2388	0.23 ug/L #	27
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.631	76	2783	N.D.	
14) 3-chloropropene	7.130	41	1179	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D.	
17) Methyl Acetate	7.600	43	1016	N.D.	
18) t-1,2-Dichloroethene	7.565	96	8826	0.72 ug/L	85
19) Methyl tert-butyl ether	7.724	73	1226	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.059	45	1073	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.317	63	1664	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.529	43	1400	N.D.	
26) c-1,2-Dichloroethene	8.963	96	694117	53.51 ug/L #	82
27) 2,2-Dichloropropane	8.981	77	1862	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.210	56	1330	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.439	113	648016	51.25 ug/L #	89
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.651	75	1654	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.363	117	2331	N.D.	
41) Benzene	9.898	78	5570	N.D.	
42) 1,2-Dichloroethane	10.103	62	1102	N.D.	
43) Trichloroethene	10.462	130	127126	11.15 ug/L	82
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.944	93	1157	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	11.014	69	1001	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	11.455	63	1288	N.D.	
51) C-1,3-Dichloropropene	11.790	75	1263	N.D.	

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5014.D
Acq On : 5 Feb 2021 2:21 pm
Operator : KKW
Sample : AE00180-21RE1
Misc :
ALS Vial : 13 Sample Multiplier: 1

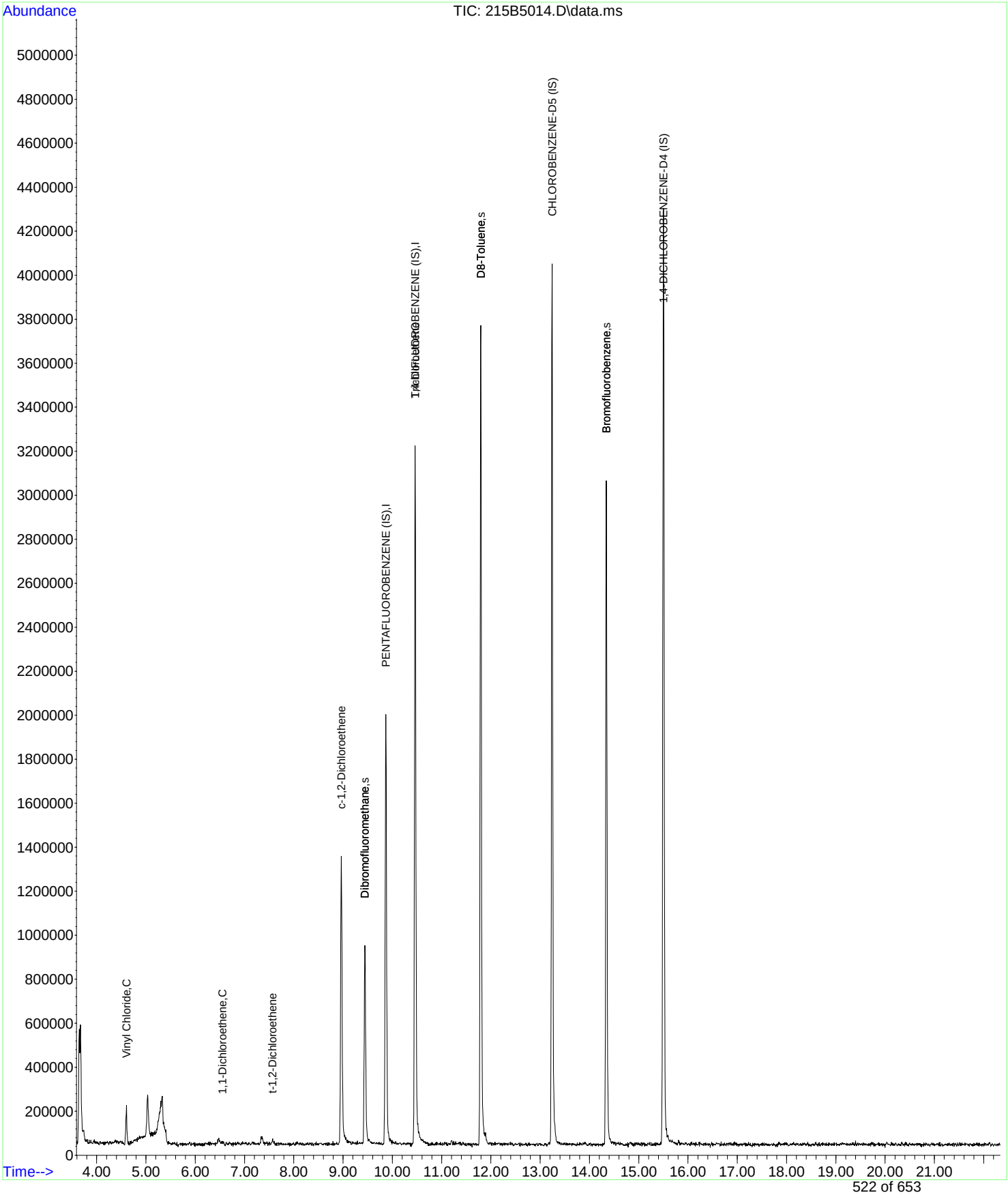
Quant Time: Feb 08 07:02:41 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.795	98	2778070	45.56 ug/L #	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.825	92	1919	N.D.	
57) T-1,3-Dichloropropene	12.277	75	1142	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.324	97	1052	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.894	43	1118	N.D.	
65) Ethylbenzene	13.159	106	1027	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.340	95	1296758	52.85 ug/L	89
75) n-Propylbenzene	14.416	91	1836	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.492	83	1293	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.357	156	1852	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	2171	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	2171	N.D.	
90) n-Butylbenzene	15.591	91	1599	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5014.D
Acq On : 5 Feb 2021 2:21 pm
Operator : KKW
Sample : AE00180-21RE1
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Feb 08 07:02:41 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5015.D
Acq On : 5 Feb 2021 2:51 pm
Operator : KKW
Sample : AE00180-22RE1@5X
Misc : 5
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 08 07:02:44 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.868	168	1301842	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2645394	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1519218	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1381923	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.445	113	682007	50.79 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.58%		
52) D8-Toluene	11.795	98	3089857	47.29 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.58%		
73) Bromofluorobenzene	14.340	95	1378825	50.82 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.940	85	1608	N.D.	
3) Chloromethane	4.404	50	1203	N.D.	
4) Vinyl Chloride	4.604	62	92760	5.91 ug/L	96
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.314	59	1152	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	6.566	151	1322	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.631	76	2824	N.D.	
14) 3-chloropropene	7.130	41	2048	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.354	84	1847	N.D.	
17) Methyl Acetate	7.506	43	1671	N.D.	
18) t-1,2-Dichloroethene	7.559	96	5286	0.41 ug/L #	82
19) Methyl tert-butyl ether	7.606	73	1049	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.076	45	1051	N.D.	
22) Chloroprene	8.182	88	1082	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.611	43	1262	N.D.	
26) c-1,2-Dichloroethene	8.963	96	946969	68.74 ug/L	84
27) 2,2-Dichloropropane	9.087	77	1429	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.175	56	1602	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.445	113	682007	50.79 ug/L #	89
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.463	75	1043	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	9.951	41	1072	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.892	78	5738	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.468	130	119378	9.77 ug/L	85
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	11.202	69	1170	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.760	75	1152	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5015.D
Acq On : 5 Feb 2021 2:51 pm
Operator : KKW
Sample : AE00180-22RE1@5X
Misc : 5
ALS Vial : 14 Sample Multiplier: 1

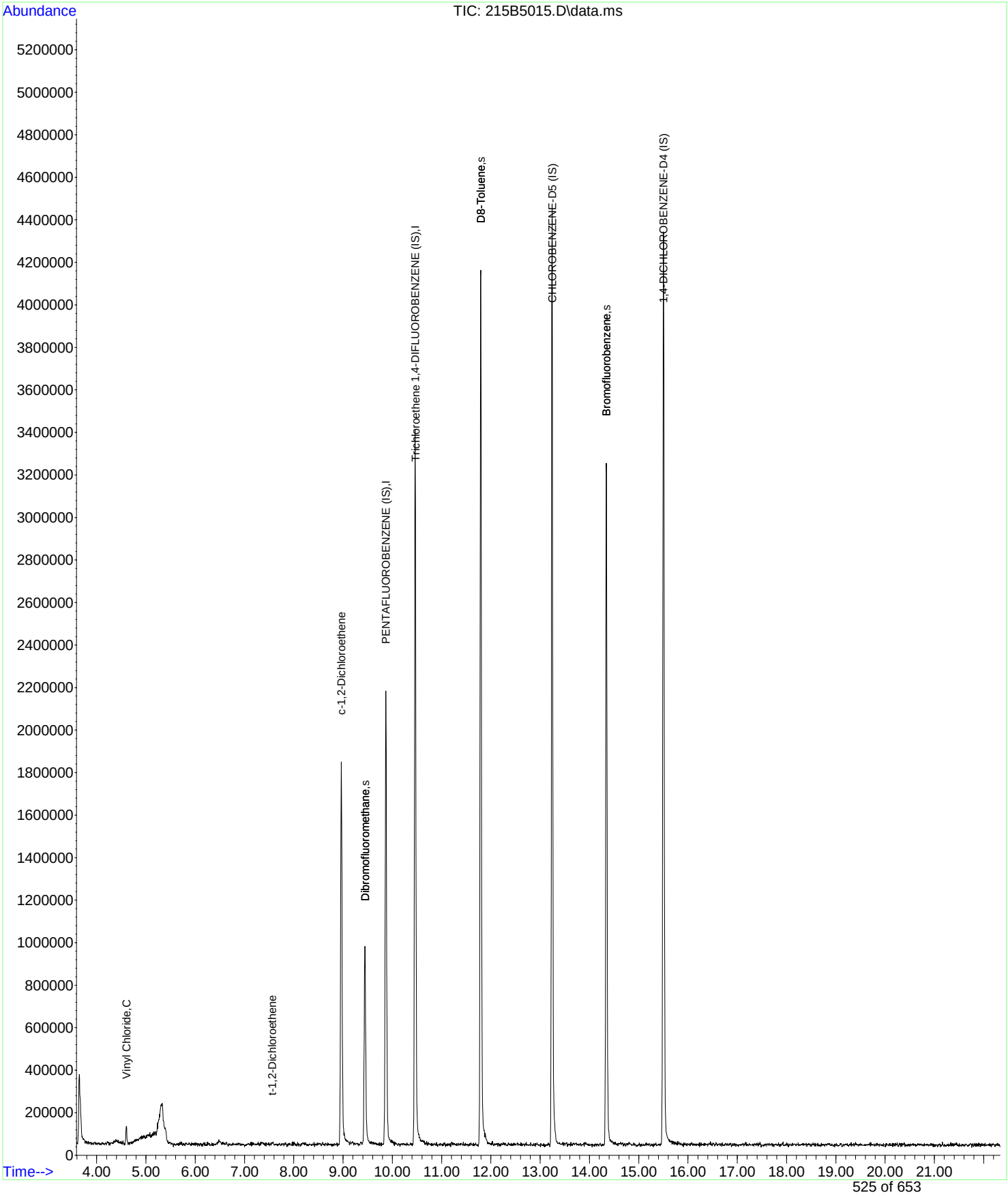
Quant Time: Feb 08 07:02:44 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.795	98	3089325	47.28 ug/L	97
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.842	92	1033	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.213	69	1083	N.D.	
60) 1,1,2-Trichloroethane	12.459	97	1212	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.982	43	1047	N.D.	
65) Ethylbenzene	13.347	106	1052	N.D.	
66) Chlorobenzene	13.253	112	1821	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.347	106	1052	N.D.	
69) o-xylene	13.840	106	1435	N.D.	
70) Styrene	13.928	104	1238	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.964	105	1510	N.D.	
74) Bromofluorobenzene	14.340	95	1378825	50.82 ug/L	87
75) n-Propylbenzene	14.428	91	1717	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.551	83	1277	N.D.	
77) 1,2,3-Trichloropropane	14.504	61	1041	N.D.	
78) T-1,4-Dichloro-2-Butene	14.404	53	1131	N.D.	
80) Bromobenzene	14.340	156	2002	N.D.	
81) 1,2,4-Trimethylbenzene	14.992	105	1221	N.D.	
82) 2-Chlorotoluene	14.569	91	1072	N.D.	
83) 4-Chlorotoluene	14.810	91	1878	N.D.	
84) tert-Butylbenzene	14.757	119	1003	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.992	105	1221	N.D.	
88) 1,3-Dichlorobenzene	15.509	146	2720	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	2720	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5015.D
Acq On : 5 Feb 2021 2:51 pm
Operator : KKW
Sample : AE00180-22RE1@5X
Misc : 5
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Feb 08 07:02:44 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5016.D
Acq On : 5 Feb 2021 3:21 pm
Operator : KKW
Sample : AE00180-24RE1@2000X
Misc : 2000
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 08 07:02:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.868	168	1249348	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2503361	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1382530	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1385695	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.445	113	652705	50.65 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.30%		
52) D8-Toluene	11.796	98	2854363	46.16 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.32%		
73) Bromofluorobenzene	14.346	95	1378375	55.83 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 111.66%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.946	85	2569	N.D.	
3) Chloromethane	4.387	50	1737	N.D.	
4) Vinyl Chloride	4.569	62	1025	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.549	96	1034	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D. d	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.813	142	1647	N.D.	
13) Carbon Disulfide	6.643	76	2490	N.D.	
14) 3-chloropropene	7.160	41	1291	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.389	84	2525	N.D.	
17) Methyl Acetate	7.524	43	1076	N.D.	
18) t-1,2-Dichloroethene	7.595	96	1906	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.012	45	1225	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.494	43	1109	N.D.	
26) c-1,2-Dichloroethene	8.975	96	18698	1.41 ug/L #	75
27) 2,2-Dichloropropane	9.122	77	1064	N.D.	
28) Bromochloromethane	0.000		0	N.D. d	
29) Cyclohexane	9.087	56	1301	N.D.	
30) Chloroform	9.246	83	1357	N.D.	
32) Dibromofluoromethane	9.445	113	652680	50.65 ug/L #	87
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.586	75	1436	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.904	78	6698	N.D.	
42) 1,2-Dichloroethane	9.980	62	1428	N.D.	
43) Trichloroethene	10.468	130	290555	25.14 ug/L #	95
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.779	93	1353	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	11.649	63	1012	N.D.	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5016.D
Acq On : 5 Feb 2021 3:21 pm
Operator : KKW
Sample : AE00180-24RE1@2000X
Misc : 2000
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 08 07:02:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

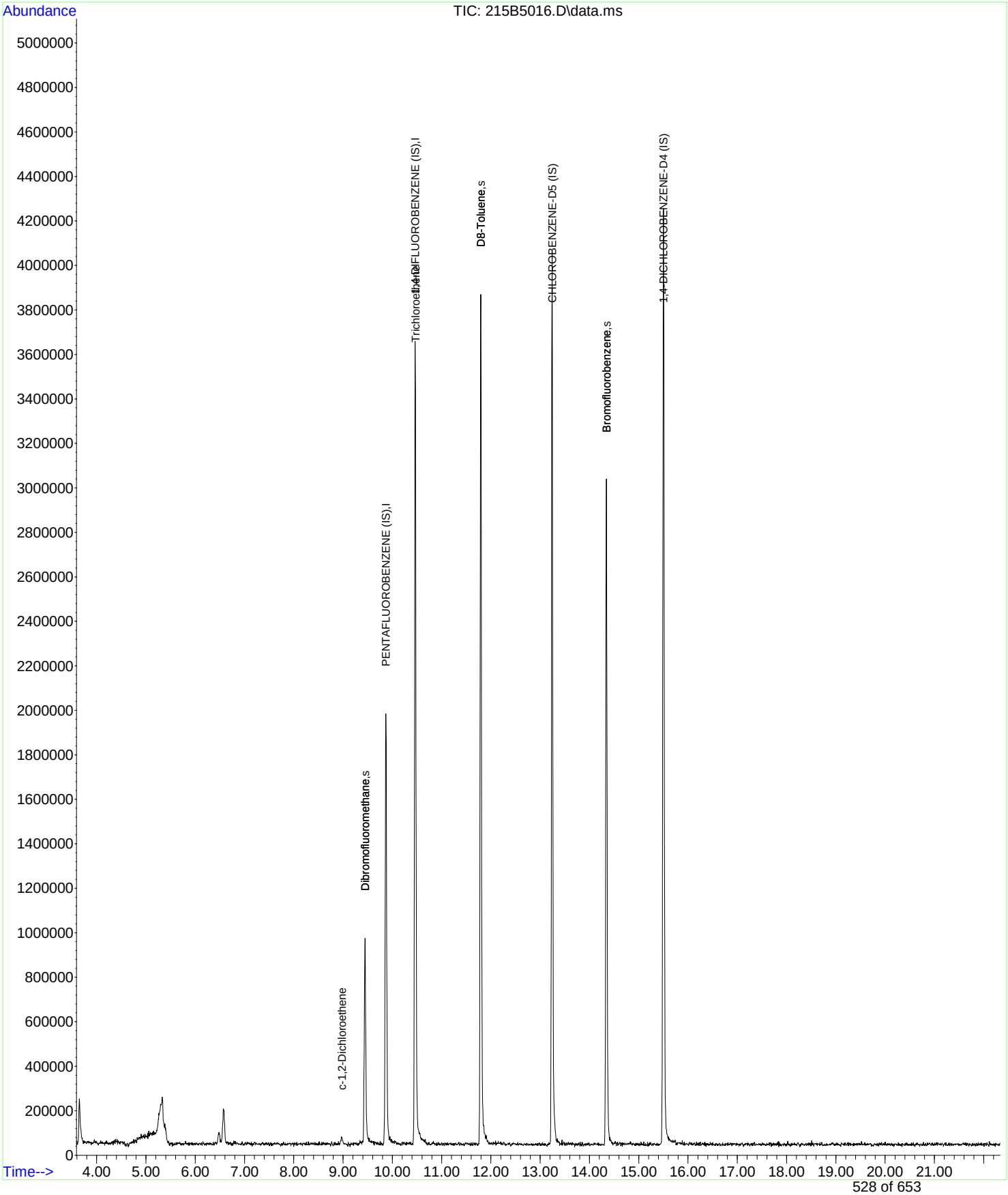
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.796	98	2853762	46.15 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.802	92	2240	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.260	69	1341	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.871	43	1090	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.346	95	1378375	55.83 ug/L	84
75) n-Propylbenzene	14.328	91	4411	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.587	83	1426	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	14.334	156	1212	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.221	119	1161	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	1600	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	1600	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5016.D
Acq On : 5 Feb 2021 3:21 pm
Operator : KKW
Sample : AE00180-24RE1@2000X
Misc : 2000
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Feb 08 07:02:47 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5017.D
Acq On : 5 Feb 2021 3:50 pm
Operator : KKW
Sample : AE00180-25RE1@10000X
Misc : 10000
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 08 07:02:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.868	168	1214526	50.00	ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2471006	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1419603	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1405346	50.00	ug/L	# 0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.445	113	650546	51.93	ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.86%			
52) D8-Toluene	11.796	98	2832016	46.40	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 92.80%			
73) Bromofluorobenzene	14.346	95	1350986	53.29	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.58%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.946	85	1983	N.D.		
3) Chloromethane	4.533	50	1546	N.D.		
4) Vinyl Chloride	4.492	62	1043	N.D.		
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.572	151	76399	10.88	ug/L	95
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	6.784	142	1997	N.D.		
13) Carbon Disulfide	6.631	76	1966	N.D.		
14) 3-chloropropene	7.142	41	1007	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	7.571	43	1170	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	7.642	73	1498	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.329	63	1227	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.570	43	1003	N.D.		
26) c-1,2-Dichloroethene	8.981	96	13176	1.03	ug/L	93
27) 2,2-Dichloropropane	9.134	77	1024	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.240	83	1372	N.D.		
32) Dibromofluoromethane	9.445	113	650546	51.93	ug/L #	88
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	9.698	75	1245	N.D.		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	9.927	41	1548	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.363	117	2456	N.D.		
41) Benzene	9.910	78	2643	N.D.		
42) 1,2-Dichloroethane	10.197	62	1384	N.D.		
43) Trichloroethene	10.474	130	525357	46.05	ug/L #	79
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	10.920	93	1139	N.D.		
46) 1,2-Dichloropropane	10.844	63	1062	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D. d		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.778	75	1191	N.D.		

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5017.D
Acq On : 5 Feb 2021 3:50 pm
Operator : KKW
Sample : AE00180-25RE1@10000X
Misc : 10000
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 08 07:02:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

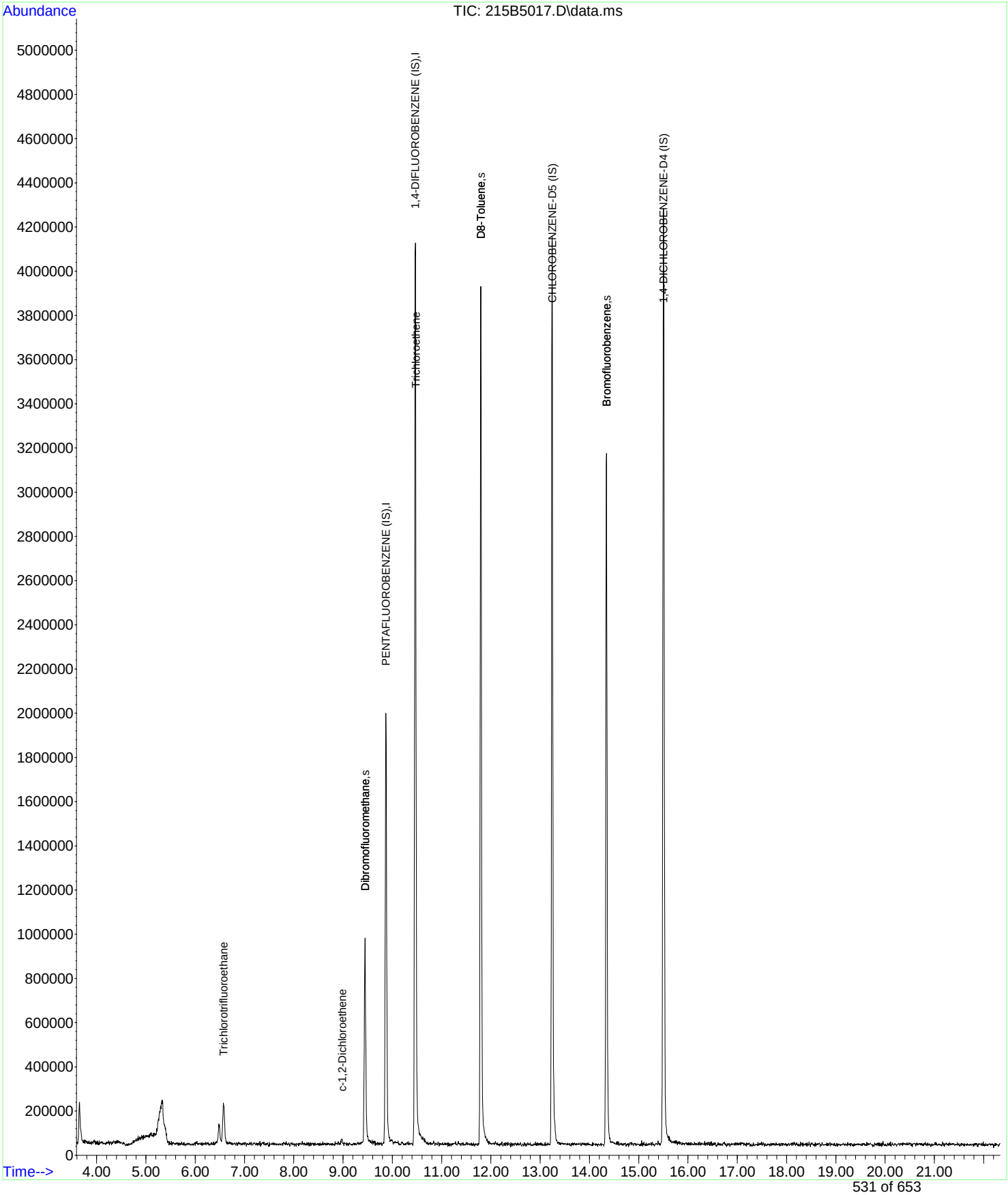
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.796	98	2832016	46.40 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.872	92	1602	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.383	69	1041	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.871	107	1274	N.D.	
64) 2-Hexanone	12.971	43	1019	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.346	95	1350986	53.29 ug/L	88
75) n-Propylbenzene	14.357	91	7321	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.352	83	1377	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.334	156	2568	N.D.	
81) 1,2,4-Trimethylbenzene	14.998	105	1146	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.198	119	1424	N.D.	
87) s-Butylbenzene	14.998	105	1146	N.D.	
88) 1,3-Dichlorobenzene	15.527	146	2807	N.D.	
89) 1,4-Dichlorobenzene	15.527	146	2807	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.729	128	1049	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5017.D
Acq On : 5 Feb 2021 3:50 pm
Operator : KKW
Sample : AE00180-25RE1@10000X
Misc : 10000
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Feb 08 07:02:50 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5018.D
Acq On : 5 Feb 2021 4:20 pm
Operator : KKW
Sample : AE00180-29RE1@50X
Misc : 50
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 08 07:02:53 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.868	168	1261032	50.00 ug/L	# 0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.462	114	2472129	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.241	82	1411018	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.503	152	1398266	50.00 ug/L	# 0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.440	113	662101	50.91 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.82%		
52) D8-Toluene	11.796	98	2780656	45.54 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 91.08%		
73) Bromofluorobenzene	14.346	95	1370149	54.37 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.74%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d	
3) Chloromethane	4.498	50	1423	N.D.	
4) Vinyl Chloride	4.616	62	9879	0.65 ug/L #	22
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.368	64	1021	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	6.214	59	1244	N.D.	
9) 1,1-Dichloroethene	6.555	96	1386	N.D.	
10) Trichlorotrifluoroethane	6.572	151	150200	20.60 ug/L	93
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.649	76	1731	N.D.	
14) 3-chloropropene	7.360	41	1541	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	7.571	43	1604	N.D.	
18) t-1,2-Dichloroethene	7.559	96	1338	N.D.	
19) Methyl tert-butyl ether	7.589	73	1065	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.335	63	1252	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.511	43	1007	N.D.	
26) c-1,2-Dichloroethene	8.964	96	244198	18.30 ug/L	86
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.234	83	3049	N.D.	
32) Dibromofluoromethane	9.440	113	663312	51.00 ug/L #	92
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.398	97	1120	N.D.	
35) 1,1-Dichloropropene	9.774	75	1098	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	9.951	41	1520	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.393	117	1480	N.D.	
41) Benzene	9.904	78	4514	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.468	130	1186581	103.95 ug/L #	78
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.903	93	1232	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	11.355	63	1153	N.D.	
51) C-1,3-Dichloropropene	11.461	75	1090	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5018.D
Acq On : 5 Feb 2021 4:20 pm
Operator : KKW
Sample : AE00180-29RE1@50X
Misc : 50
ALS Vial : 17 Sample Multiplier: 1

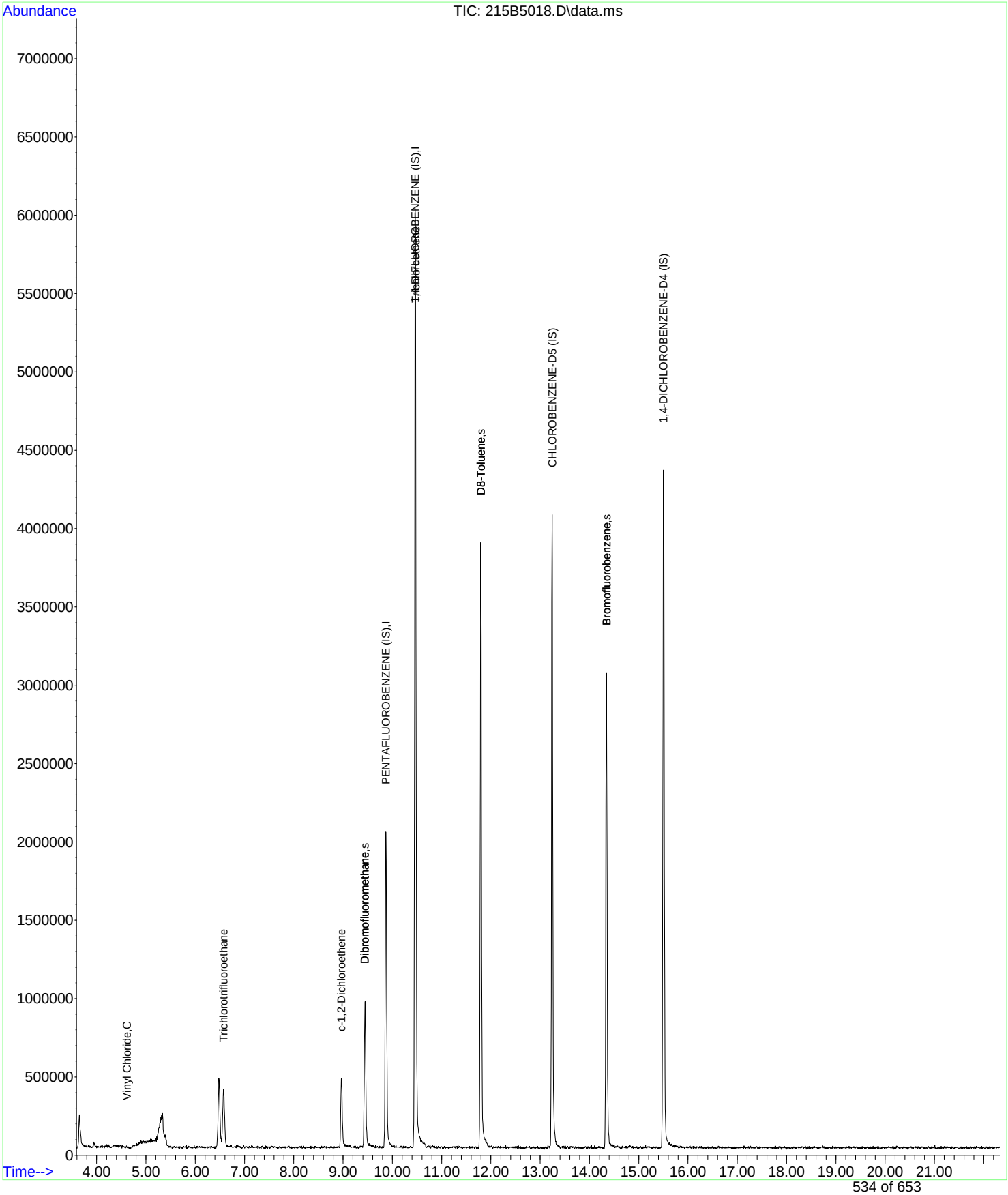
Quant Time: Feb 08 07:02:53 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.796	98	2780656	45.54 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	1093	N.D.	
57) T-1,3-Dichloropropene	12.330	75	1029	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.148	69	1253	N.D.	
60) 1,1,2-Trichloroethane	12.342	97	1014	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.842	43	1030	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.241	112	1035	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.346	95	1370149	54.37 ug/L	85
75) n-Propylbenzene	14.369	91	1709	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.346	156	1254	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.515	146	4354	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	4354	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\020521\
Data File : 215B5018.D
Acq On : 5 Feb 2021 4:20 pm
Operator : KKW
Sample : AE00180-29RE1@50X
Misc : 50
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Feb 08 07:02:53 2021
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2011113
QLast Update : Fri Nov 20 09:50:30 2020
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA63653

Instrument: OVGCMS5

Calibration ID: 2011113

Printed: 11/20/2020 10:14:21AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA63653-TUN1	QC		1		A0F0994			
AA63653-CAL1	QC		2		A0K1094	A0H0536		
AA63653-CAL2	QC		3		A0K1095	A0H0536		
AA63653-CAL3	QC		4		A0K1096	A0H0536		
AA63653-CAL4	QC		5		A0K1097	A0H0536		
AA63653-CAL5	QC		6		A0K1098	A0H0536		
AA63653-CAL6	QC		7		A0K1099	A0H0536		
AA63653-CAL7	QC		8		A0K1100	A0H0536		
AA63653-CAL8	QC		9		A0K1101	A0H0536		
AA63653-SCV1	QC		10		A0K1038	A0H0536		

Samples Loaded By Date

Data Processed By Date

VOLATILES GC/MS LOGBOOK (EPA Method 624.1 / SW-846 Method 8260D)

Tune Start Date: 11/12/20	Surrogate: AOF0892	8260 Mix: AOK0852
Sequence: AA63653 / AA63657	Internal: AOH0535	8260 Add: AOK0725
Batch: OK19040	LCS Mix 2⁰: AOK0835	8260 Ac/Ac: AOK1075
Method: 8260	LCS Acrolein 2⁰: AOK0868	8260 Gases: AOE1012
Analyst: JCN	LCS Gas 2⁰: AOK1020	Instrument #: MS-5
Instrument EM Voltage: 1706		

205KN

Filename	ENCO ID	Vial #	Dilution Factor	Pos.	pH (<2)	RC (Y/N)	Comments	LIMS
001	Tun			1				
002	Tun			1			Pass	
003	CAL1 1ppb			2			✓	
004	CAL2 2ppb			3			✓	
005	CAL3 5ppb			4			✓	
006	CAL4 10ppb			5			✓	
007	CAL5 20ppb			6			✓ Under spiked Acrolein / Acrylonitrile	
008	CAL6 50ppb			7			✓	
009	CAL7 80ppb			8			✓	
010	CAL8 100ppb			9			✓	
011	Rinse			10				
012	SCV		10	11		N	✓	
013	BS		1/20	12		1/20	✓	
014	BLK			13			✓	
015	AD06553-03	H	1	14	✓	N	✓ MS/MSD	
016	AD06553-13	E	1	15	✓	N	✓	
017	AD06553-14	D	1	16	✓	N	✓	
018	AD06553-15	D	1	17	✓	N	✓	
019	AD06553-16	D	1	18	✓	N	✓	
020	AD06553-17	E	1	19	✓	N	✓	
021	AD06553-18	D	1	20	✓	N	✓	

Response Factor Report OVGCMS5

Method Path : C:\msdchem\1\methods\
Method File : 111920W.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Thu Nov 19 13:02:55 2020
Response Via : Initial Calibration

Calibration Files
1 =205KN003.D 2 =205KN004.D 5 =205KN005.D 20 =205KN007.D 100 =205KN010.D 50 =205KN008.D 80 =205KN009.D 10 =205KN(

	Compound	1	2	5	20	100	50	80	10	Avg	%RSD
1) I	PENTAFLUOROBENZENE...	----------	ISTD	----------							
2)	Dichlorodifluo...	0.732	0.531	0.620	0.629	0.673	0.688	0.709	0.583	0.645	10.47
3) P	Chloromethane	0.964	0.768	0.753	0.667	0.733	0.662	0.754	0.644	0.743	13.64
4) C	Vinyl Chloride	0.639	0.496	0.594	0.610	0.665	0.618	0.687	0.518	0.603	11.04
5)	Bromomethane	0.549	0.394	0.247	0.154	0.219	0.181	0.205	0.180	0.266	51.25
6)	Chloroethane	0.510	0.336	0.273	0.297	0.260	0.264	0.323			29.51
7)	Trichlorofluor...	0.796	0.619	0.687	0.758	0.815	0.793	0.830	0.707	0.751	9.78
8)	Diethyl ether	0.518	0.368	0.387	0.388	0.432	0.430	0.456	0.360	0.417	12.66
9) C	1,1-Dichloroet...	0.530	0.372	0.392	0.413	0.456	0.449	0.465	0.375	0.432	12.52
10)	Trichlorotrifl...	0.261	0.264	0.293	0.261	0.306	0.306	0.313	0.308	0.289	7.99
11)	Acrolein	0.103	0.071	0.088	0.042	0.093	0.099	0.101	0.098	0.087#	24.14
12)	Iodomethane	0.324	0.307	0.371	0.456	0.460	0.473	0.466	0.432	0.411	16.35
13)	Carbon Disulfide	1.626	1.279	1.418	1.452	1.296	1.421	1.393	1.427	1.414	7.52
14)	3-chloropropene	1.169	0.669	0.682	0.774	0.864	0.852	0.844	0.712	0.821	19.61
15)	Acetone	0.164	0.076	0.113	0.108	0.115	0.117	0.122	0.127	0.118	20.50
16)	Methylene Chlo...	0.949	0.680	0.585	0.479	0.515	0.526	0.538	0.495	0.596	26.19
17)	Methyl Acetate	0.752	0.373	0.342	0.331	0.358	0.362	0.385	0.374	0.410	34.05
18)	t-1,2-Dichloro...	0.632	0.429	0.448	0.474	0.518	0.520	0.544	0.431	0.499	13.82
19)	Methyl tert-bu...	1.208	1.067	1.181	1.219	1.336	1.418	1.459	1.226	1.264	10.33
20)	Acetonitrile	0.133	0.087	0.083	0.083	0.092	0.096	0.101	0.093	0.096#	16.96
21)	Isopropyl ether	1.694	1.497	1.582	1.599	1.799	1.820	1.914	1.521	1.678	9.10
22)	Chloroprene	0.511	0.397	0.476	0.495	0.500	0.505	0.508	0.435	0.478	8.66
23) P	1,1-Dichloroet...	1.150	0.746	1.073	0.985	1.079	1.109	1.134	0.943	1.027	13.07
24)	Acrylonitrile	0.171	0.135	0.157	0.083	0.167	0.177	0.183	0.168	0.155	21.11
25)	Vinyl Acetate	1.109	0.868	1.055	1.064	1.035	1.119	1.124	1.046	1.053	7.80
26)	c-1,2-Dichloro...	0.554	0.424	0.524	0.525	0.553	0.576	0.602	0.474	0.529	10.76
27)	2,2-Dichloropr...	0.987	0.574	0.726	0.745	0.872	0.884	0.932	0.636	0.795	18.48
28)	Bromochloromet...	0.174	0.176	0.238	0.191	0.160	0.194	0.174	0.188	0.187	12.53
29)	Cyclohexane	1.446	0.816	1.112	1.011	1.098	1.139	1.151	0.901	1.084	17.43
30) C	Chloroform	1.008	0.818	1.017	0.944	0.995	1.032	1.078	0.957	0.981	7.97
31) s	Dibromofluorom...	0.499	0.517	0.518	0.502	0.484	0.557	0.508	0.540	0.516	4.57
32)	Dibromofluorom...	0.499	0.517	0.518	0.502	0.484	0.557	0.508	0.540	0.516	4.57
33)	2-Butanone	0.095	0.029	0.061	0.046	0.058	0.058	0.061	0.045	0.057#	33.56
34)	1,1,1-Trichlor...	0.886	0.648	0.744	0.804	0.874	0.894	0.933	0.697	0.810	12.79
35)	1,1-Dichloropr...	0.995	0.693	0.799	0.777	0.841	0.869	0.895	0.723	0.824	11.87
36)	Propionitrile	0.073	0.071	0.073	0.070	0.065	0.070	0.072	0.069	0.070#	3.49
37)	Methacrylonitrile	0.399	0.336	0.360	0.337	0.311	0.348	0.341	0.345	0.347	7.26
38)	Isobutyl Alcohol	0.039	0.041	0.042	0.039	0.041	0.045	0.045	0.043	0.042#	5.18

Method Path : C:\msdchem\1\methods\
Method File : 111920W.M

39)	I	1,4-DIFLUOROBENZEN...	----------	ISTD	----------							
40)		Carbon Tetrach...	0.356	0.266	0.280	0.310	0.381	0.359	0.377	0.269	0.325	15.08
41)		Benzene	1.369	0.895	1.012	1.161	1.252	1.202	1.234	1.020	1.143	13.58
42)		1,2-Dichloroet...	0.530	0.325	0.356	0.380	0.419	0.395	0.426	0.327	0.395	16.85
43)		Trichloroethene	0.243	0.207	0.209	0.223	0.254	0.244	0.248	0.219	0.231	8.07
44)		Methyl cyclohe...	1.297	0.764	0.651	0.549	0.571	0.571	0.580	0.498	0.685	37.89
45)		Dibromomethane	0.175	0.131	0.166	0.162	0.171	0.170	0.178	0.145	0.162	9.97
46)	C	1,2-Dichloropr...	0.417	0.274	0.279	0.316	0.368	0.337	0.367	0.304	0.333	14.80
47)		Bromodichlorom...	0.339	0.218	0.314	0.331	0.411	0.377	0.405	0.312	0.338	18.35
48)		Methyl Methacr...	0.209	0.116	0.173	0.191	0.216	0.207	0.211	0.180	0.188	17.59
49)		1,4-Dioxane	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003#	15.13
50)		2-Chloroethyl ...	0.164	0.132	0.148	0.164	0.174	0.176	0.176	0.155	0.161	9.70
51)		C-1,3-Dichloro...	0.388	0.337	0.396	0.444	0.557	0.515	0.549	0.386	0.447	18.77
52)	s	D8-Toluene	1.242	1.219	1.181	1.198	1.256	1.317	1.203	1.265	1.235	3.56
53)		D8-Toluene	1.242	1.219	1.181	1.198	1.256	1.317	1.203	1.265	1.235	3.56
54)		4-Methyl-2-pen...	0.054	0.035	0.032	0.032	0.034	0.034	0.035	0.031	0.036#	20.52
55)		CHLOROBENZENE-D5 (IS)	----------	ISTD	----------							
56)	C	Toluene	1.301	0.813	1.029	1.066	1.109	1.126	1.145	0.947	1.067	13.57
57)		T-1,3-Dichloro...	0.578	0.396	0.539	0.558	0.630	0.608	0.660	0.515	0.561	14.59
58)		Tetrachloroethene	0.355	0.217	0.245	0.289	0.295	0.281	0.297	0.261	0.280	14.66
59)		Ethyl methacry...	0.788	0.476	0.467	0.517	0.560	0.573	0.583	0.495	0.557	18.49
60)		1,1,2-Trichlor...	0.426	0.257	0.309	0.332	0.358	0.354	0.369	0.316	0.340	14.59
61)		Dibromochlorom...	0.262	0.193	0.219	0.271	0.363	0.324	0.377	0.234	0.280	24.18
62)		1,3-Dichloropr...	0.786	0.497	0.586	0.666	0.713	0.696	0.746	0.649	0.667	13.77
63)		1,2-Dibromoethane	0.378	0.275	0.309	0.325	0.360	0.368	0.378	0.290	0.336	12.25
64)		2-Hexanone	0.280	0.209	0.227	0.239	0.255	0.255	0.265	0.235	0.246	9.21
65)	C	Ethylbenzene	0.837	0.505	0.535	0.608	0.646	0.639	0.660	0.582	0.626	16.13
66)	P	Chlorobenzene	1.227	0.919	1.089	1.029	1.086	1.084	1.135	1.030	1.075	8.30
67)		1,1,1,2-Tetrac...	0.325	0.266	0.294	0.319	0.372	0.355	0.375	0.267	0.322	13.59
68)		m-xylene & p-x...	0.771	0.630	0.752	0.782	0.767	0.793	0.800	0.727	0.753	7.24
69)		o-xylene	0.827	0.550	0.798	0.758	0.823	0.841	0.863	0.715	0.772	13.16
70)		Styrene	1.185	0.949	1.198	1.329	1.404	1.372	1.466	1.179	1.260	13.20
71)	P	Bromoform	0.224	0.133	0.111	0.151	0.225	0.198	0.216	0.134	0.174	26.86
72)		Isopropylbenzene	2.119	1.613	1.958	2.054	2.160	2.204	2.274	1.869	2.031	10.53
73)	s	Bromofluoroben...	0.942	0.897	0.855	0.869	0.844	0.927	0.868	0.941	0.893	4.41
74)		Bromofluoroben...	0.942	0.897	0.855	0.869	0.844	0.927	0.868	0.941	0.893	4.41
75)		n-Propylbenzene	2.779	2.232	2.681	2.705	2.871	2.885	3.015	2.557	2.716	8.87
76)	P	1,1,2,2-Tetrac...	0.575	0.424	0.467	0.489	0.518	0.530	0.560	0.467	0.504	10.18
77)		1,2,3-Trichlor...	0.235	0.146	0.161	0.180	0.187	0.187	0.189	0.188	0.184	13.95
78)		T-1,4-Dichloro...	0.121	0.127	0.190	0.191	0.198	0.188	0.206	0.188	0.176	18.47
79)		1,4-DICHLOROBENZEN...	----------	ISTD	----------							
80)		Bromobenzene	0.491	0.463	0.517	0.513	0.522	0.515	0.541	0.466	0.503	5.46
81)		1,2,4-Trimethy...	2.482	1.775	2.358	2.398	2.416	2.462	2.548	2.288	2.341	10.33
82)		2-Chlorotoluene	2.119	1.605	1.920	2.021	2.048	2.052	2.168	1.808	1.968	9.39
83)		4-Chlorotoluene	2.103	1.725	2.035	2.091	2.145	2.166	2.252	1.920	2.055	8.04

Method Path : C:\msdchem\1\methods\
Method File : 111920W.M

84)	tert-Butylbenzene	1.917	1.425	1.700	1.829	1.869	1.859	1.971	1.656	1.778	9.97
85)	1,3,5-Trimethy...	2.490	1.694	2.251	2.291	2.388	2.406	2.450	2.172	2.268	11.25
86)	p-Isopropyltol...	2.229	1.689	2.180	2.250	2.350	2.377	2.484	2.112	2.209	10.91
87)	s-Butylbenzene	2.516	2.130	2.702	2.757	2.812	2.890	2.983	2.495	2.661	10.24
88)	1,3-Dichlorobe...	1.060	0.831	0.915	1.006	1.121	1.076	1.133	0.926	1.009	10.77
89)	1,4-Dichlorobe...	1.342	0.942	0.985	1.048	1.121	1.090	1.143	0.977	1.081	11.81
90)	n-Butylbenzene	2.456	1.647	2.037	2.410	2.489	2.528	2.635	2.174	2.297	14.24
91)	1,2-Dichlorobe...	1.133	0.693	0.930	0.896	1.007	1.003	1.071	0.881	0.952	14.22
92)	DBCP	0.146	0.037	0.037	0.067	0.082	0.078	0.086	0.067	0.075#	45.78
93)	Hexachlorobuta...	0.179	0.172	0.213	0.199	0.252	0.230	0.254	0.186	0.211	15.26
94)	1,2,4-Trichlor...	0.444	0.216	0.367	0.393	0.486	0.481	0.524	0.368	0.410	23.82
95)	Naphthalene	0.860	0.626	0.684	0.841	1.037	1.012	1.109	0.795	0.870	19.70
96)	1,2,3-Trichlor...	0.242	0.250	0.204	0.239	0.307	0.284	0.319	0.234	0.260	15.18

(#) = Out of Range

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

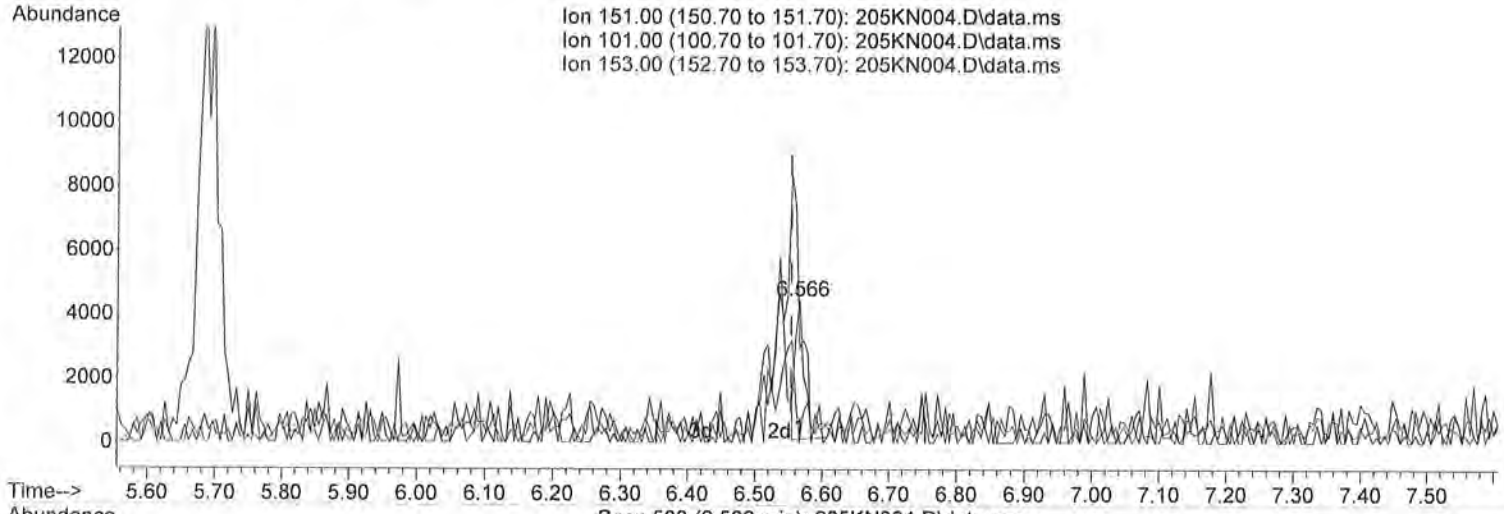
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

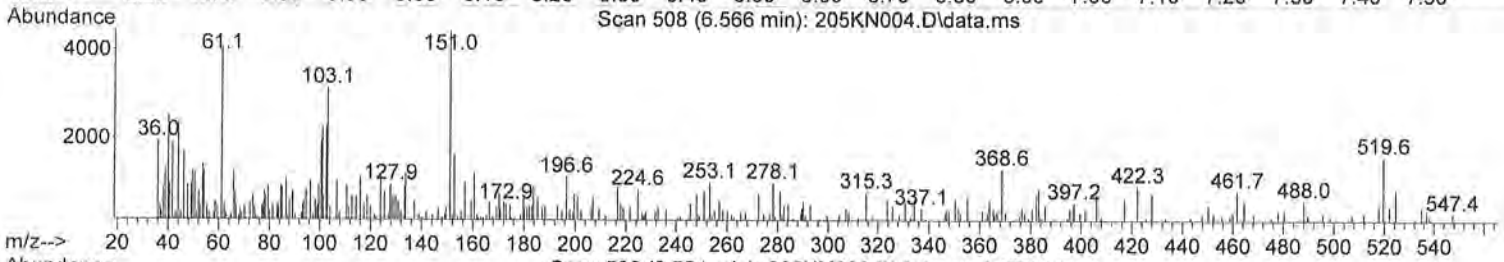
Instrument ID:	OVGCMS-5
Sequence/Batch ID:	AA63053
Data File Prefix:	205KN
Date and Time Range of MIs:	11/19/20 12:16 - 11/20/20 0737
Reviewer Print Name:	Karie Gonzalez
Reviewer Signature:	Karie Gonzalez
Date of Review:	11/20/2020

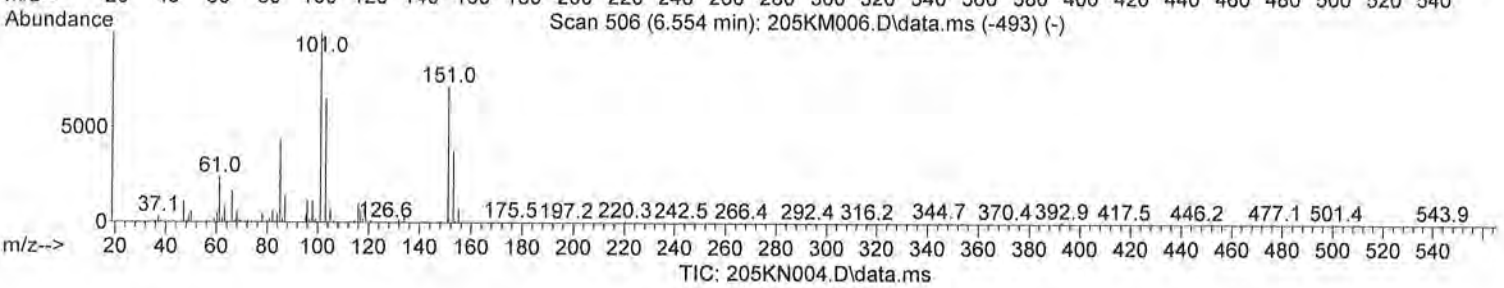
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(10) Trichlorotrifluoroethane

6.566min (+ 0.012) 0.52 ug/L

response 4301

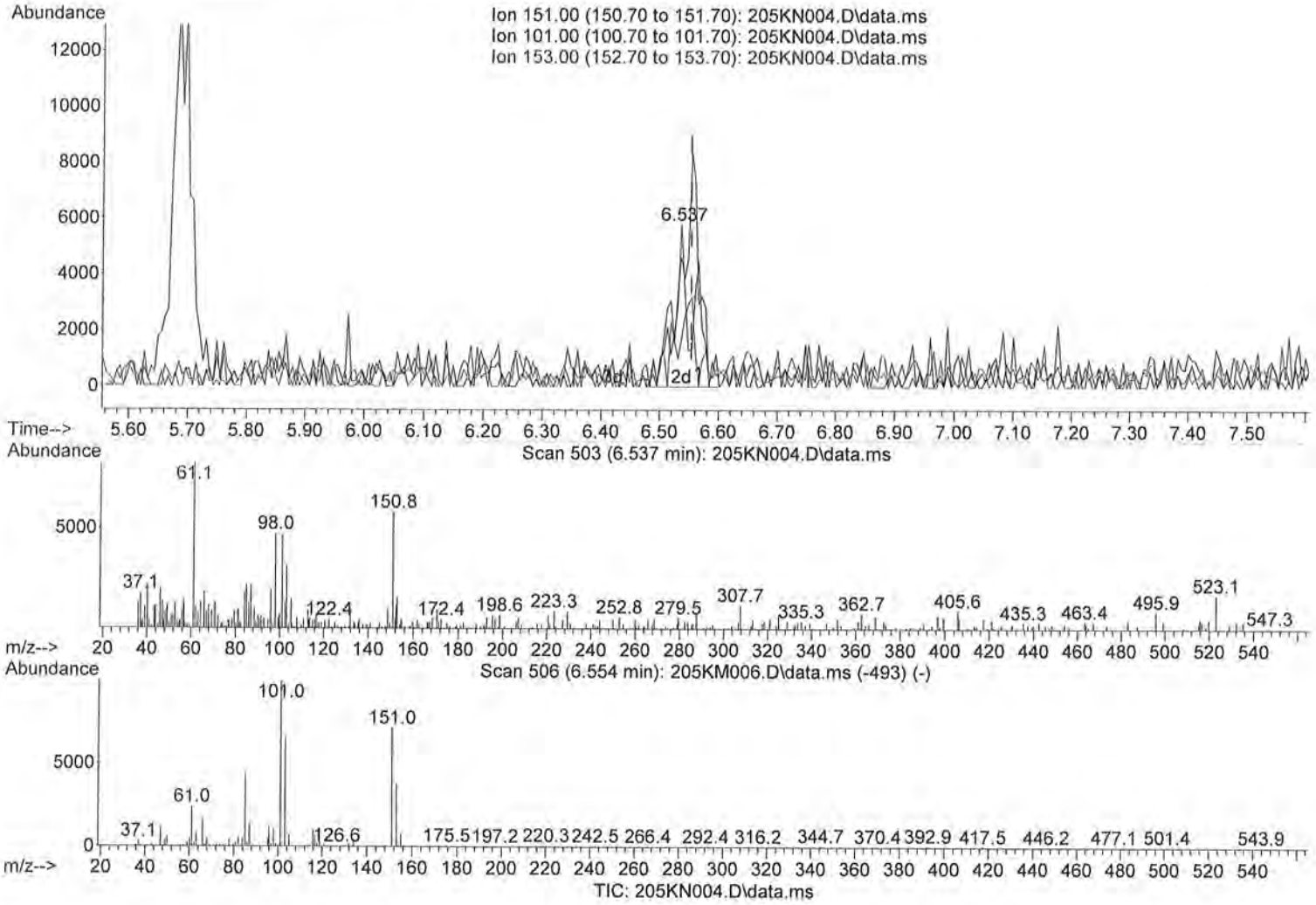
Ion	Exp%	Act%
151.00	100.00	100.00
101.00	154.20	0.00#
153.00	62.50	40.66#
0.00	0.00	0.00

Review:
[X] Manual Integration [ ] Manual Integration
Reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date: KW 11/23/20
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



(10) Trichlorotrifluoroethane

6.537min (-0.017) 1.54 ug/L m

response 12736

Ion	Exp%	Act%
151.00	100.00	100.00
101.00	154.20	0.00#
153.00	62.50	13.73#
0.00	0.00	0.00

Manual Integration

Reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

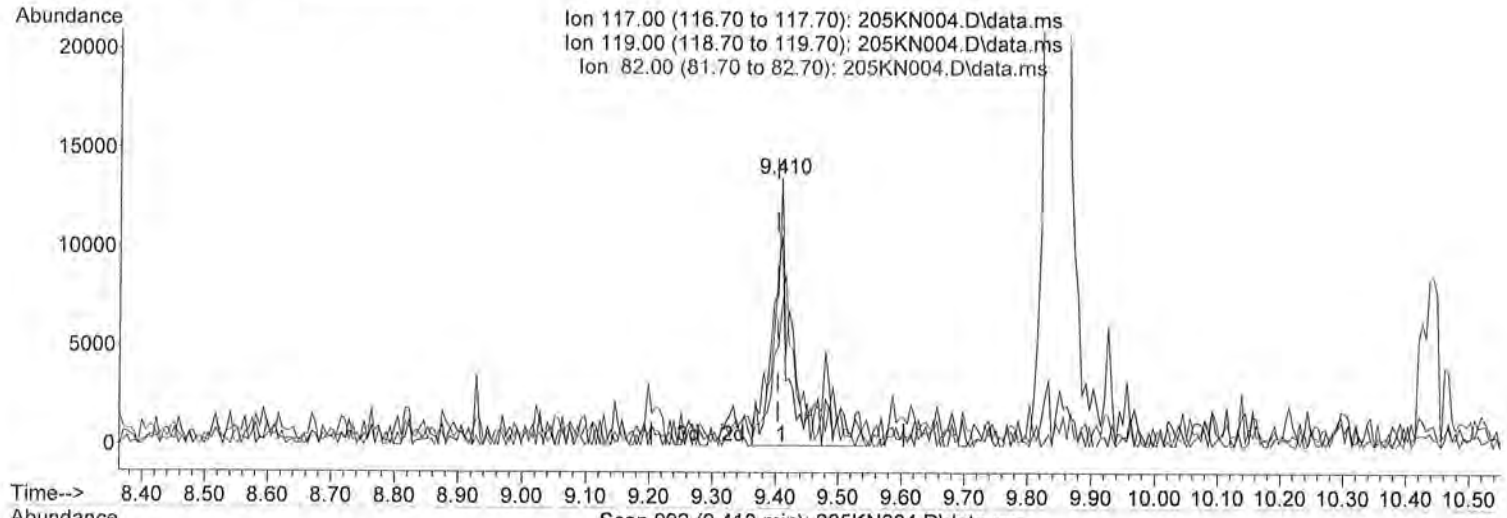
Review by/Date: a n 12/20

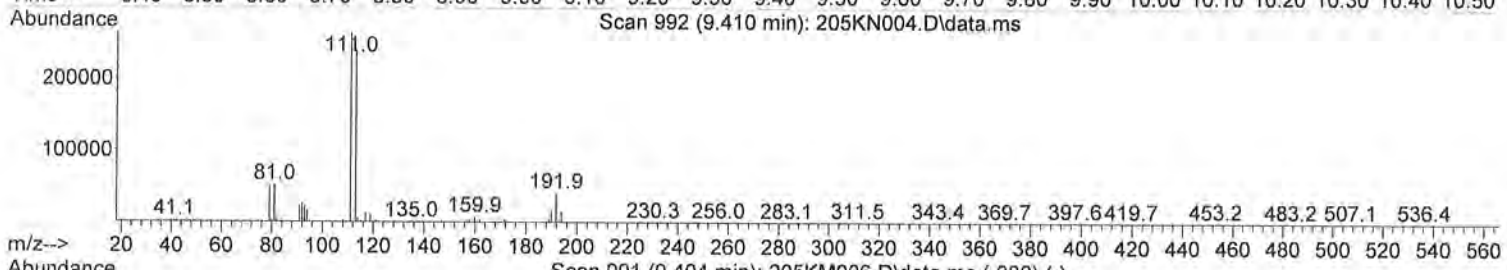
Review by/Date:

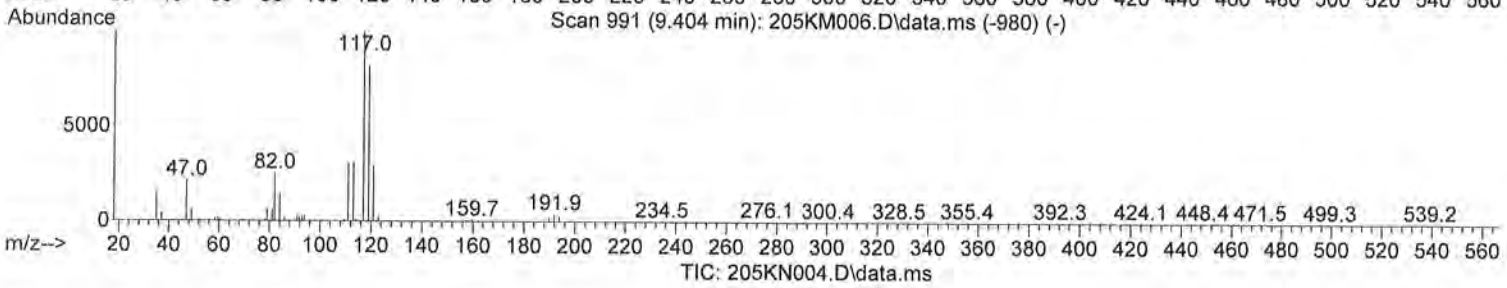
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(40) Carbon Tetrachloride

9.410min (+ 0.006) 2.08 ug/L

response 32862

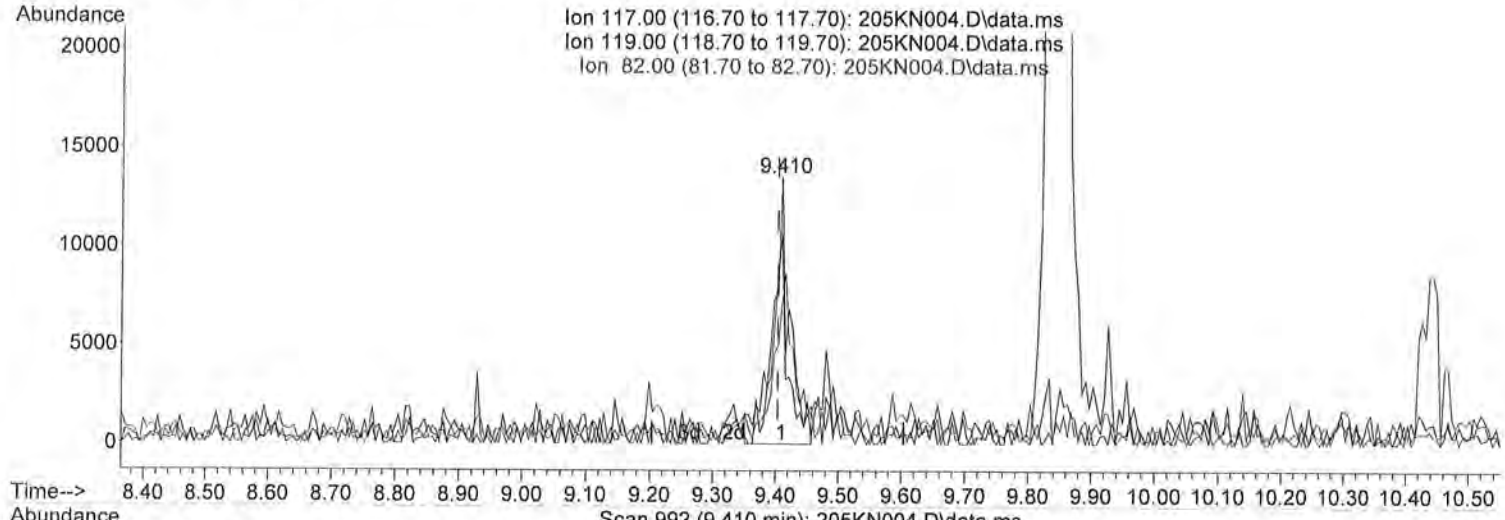
Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	54.94#
82.00	27.60	58.67#
0.00	0.00	0.00

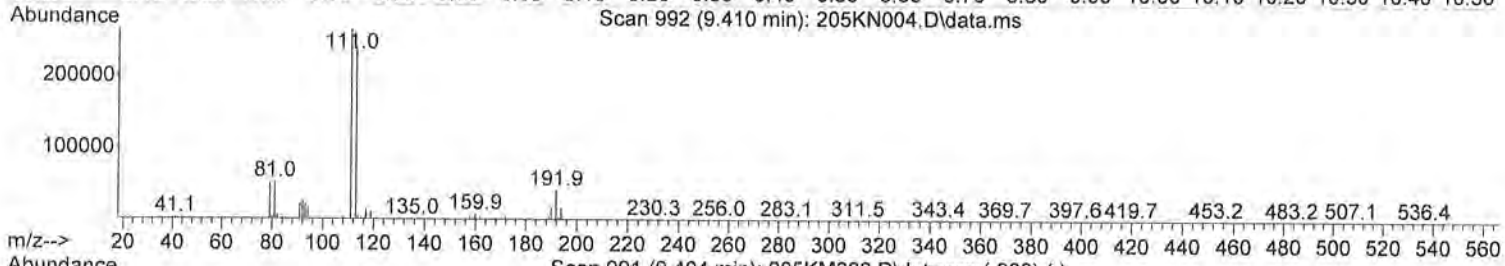
[X] Manual Integration [ ] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date: W 11/23/20
Review by/Date:

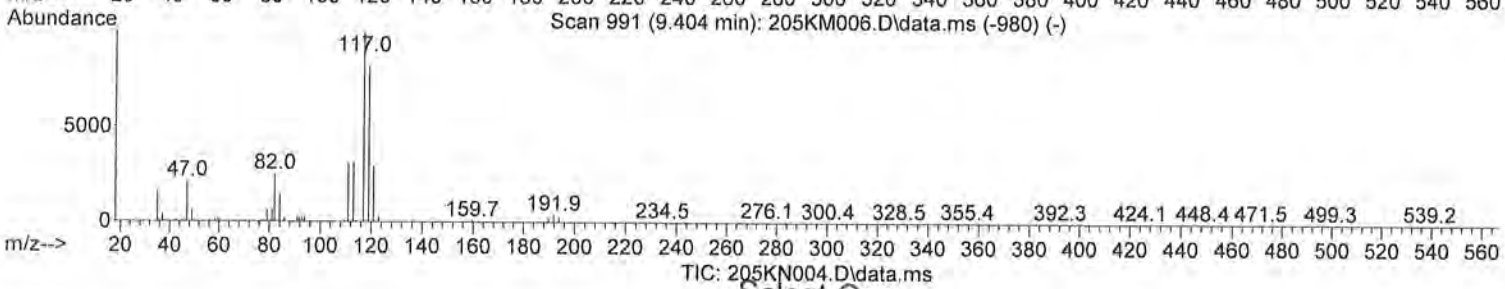
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(40) Carbon Tetrachloride

9.410min (+ 0.006) 1.62 ug/L m

response 25567

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	70.61#
82.00	27.60	75.41#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

[ ] Other:

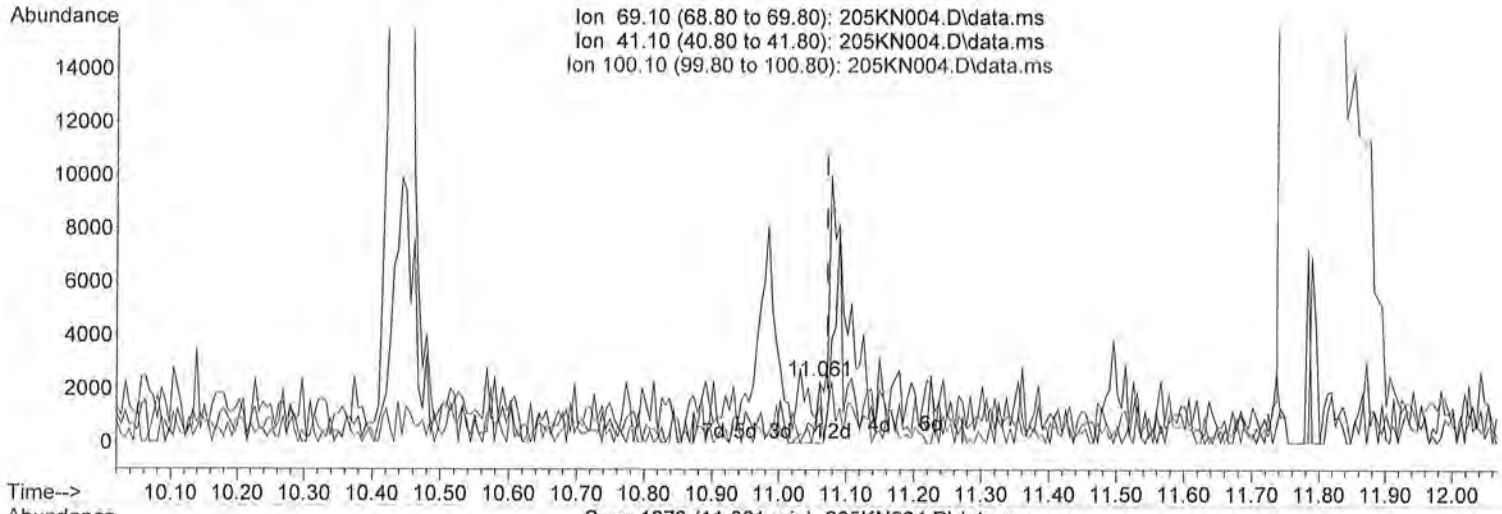
Review by/Date 11/20/20

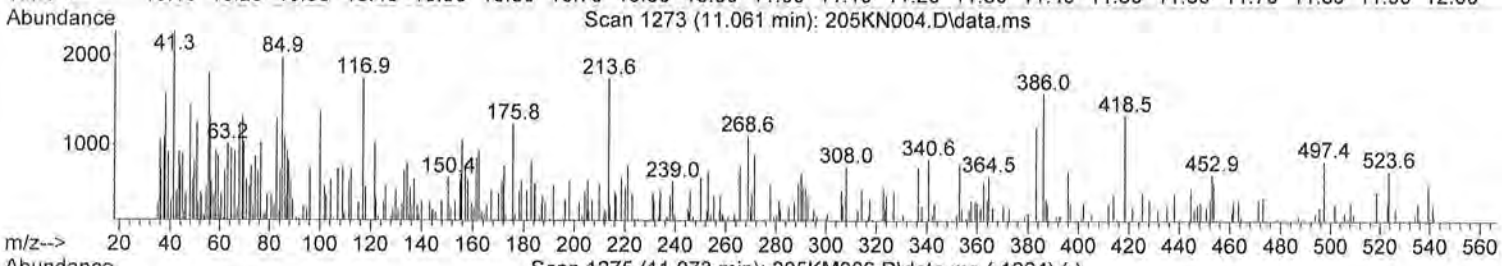
Review by/Date:

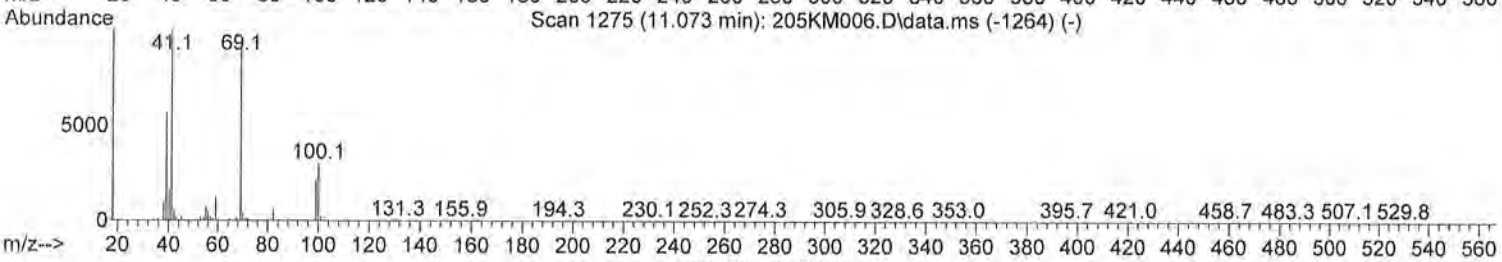
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(48) Methyl Methacrylate

11.061min (-0.012) 0.14 ug/L

response 1750

Ion	Exp%	Act%
69.10	100.00	100.00
41.10	124.40	141.03
100.10	35.70	69.43#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (baseline selection)

[ ] Missed peak(s) found

[ ] Incorrect peak(s) found

[ ] Overlapping peaks

[ ] Re-integration

[ ] Other:

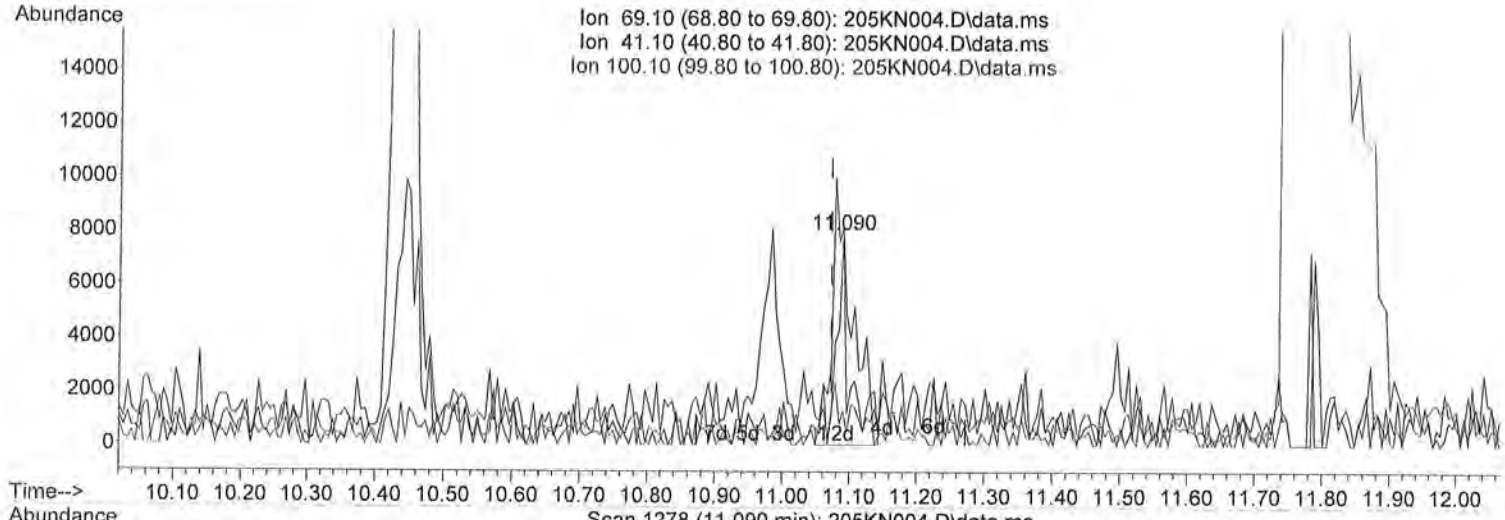
Review by/Date KKW 11/19/20

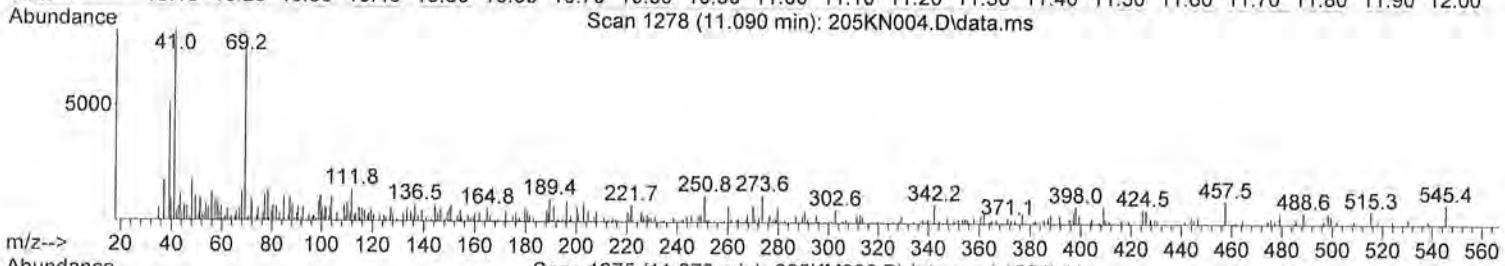
Review by/Date:

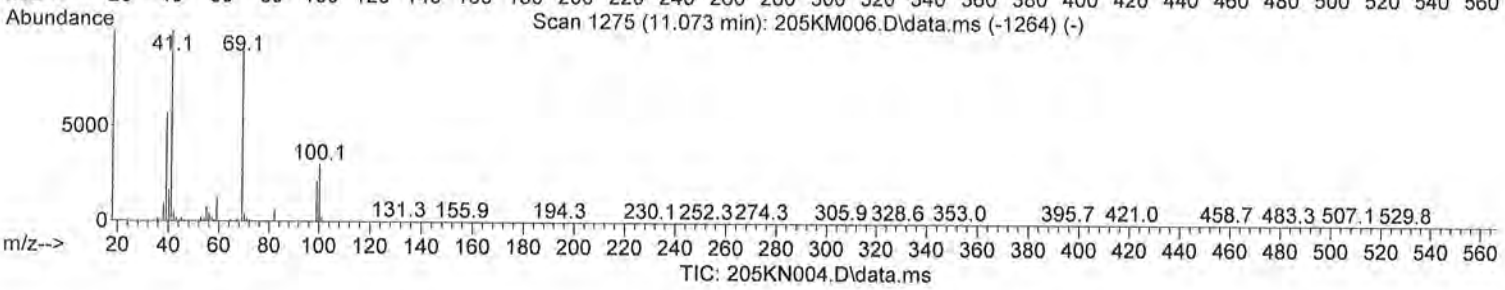
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(48) Methyl Methacrylate

11.090min (+ 0.017) 0.86 ug/L m

response 11122

Ion	Exp%	Act%
69.10	100.00	100.00
41.10	124.40	22.19#
100.10	35.70	10.92#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date: 11/20/20

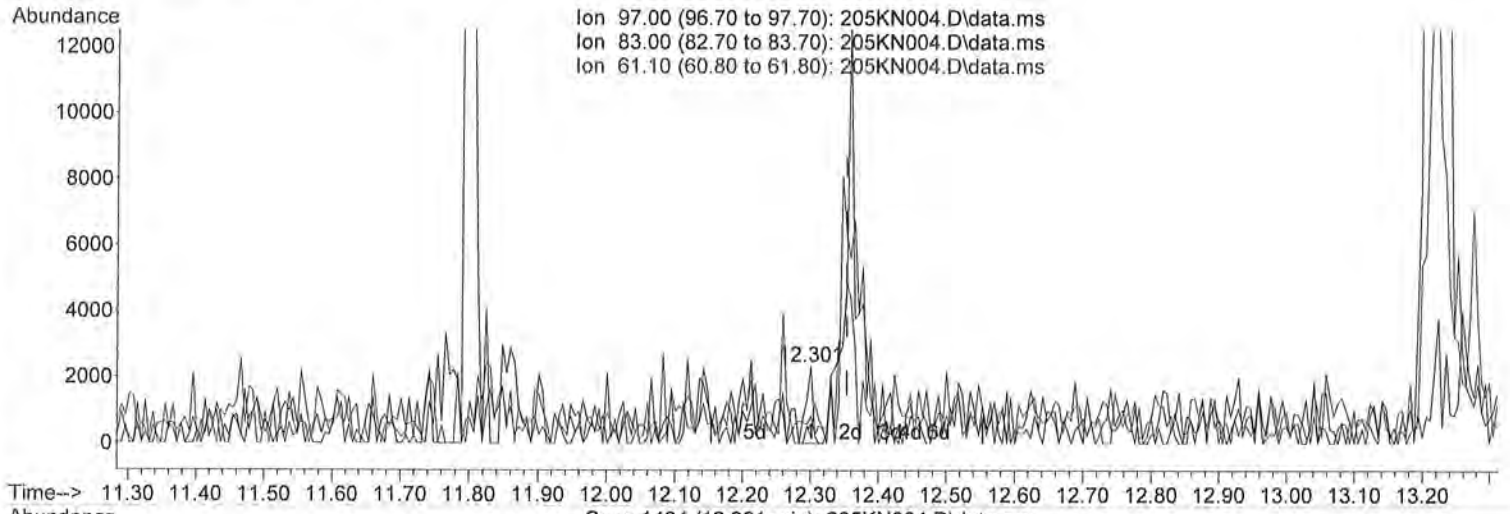
111920W.M Thu Nov 19 12:17:22 2020

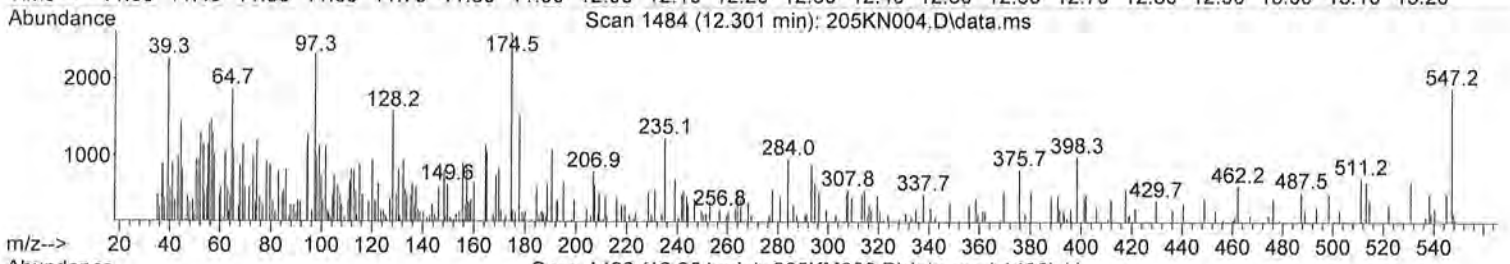
Page: 1

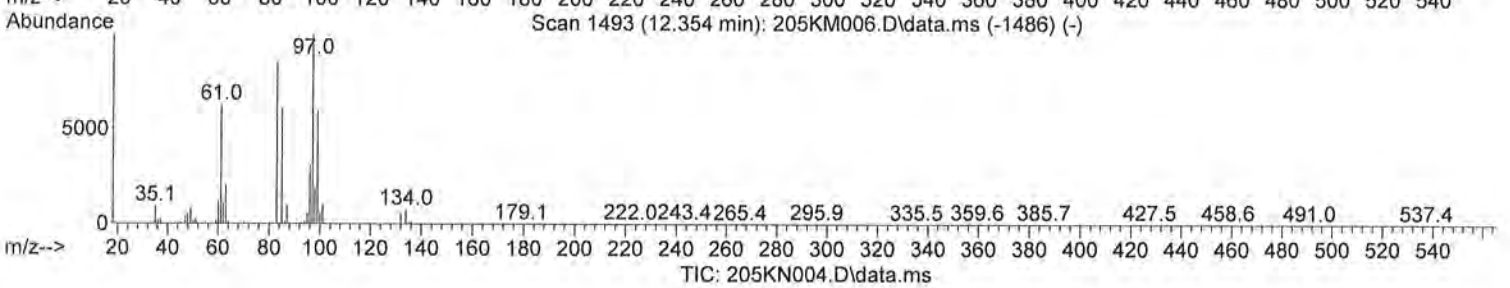
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(60) 1,1,2-Trichloroethane

12.301min (-0.053) 0.12 ug/L

response 1625

Ion	Exp%	Act%
97.00	100.00	100.00
83.00	90.90	103.69
61.10	65.40	78.09
0.00	0.00	0.00

Select One:

[ ] Manual Integration

[ ] Incorrect peak selection/Peak not found

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

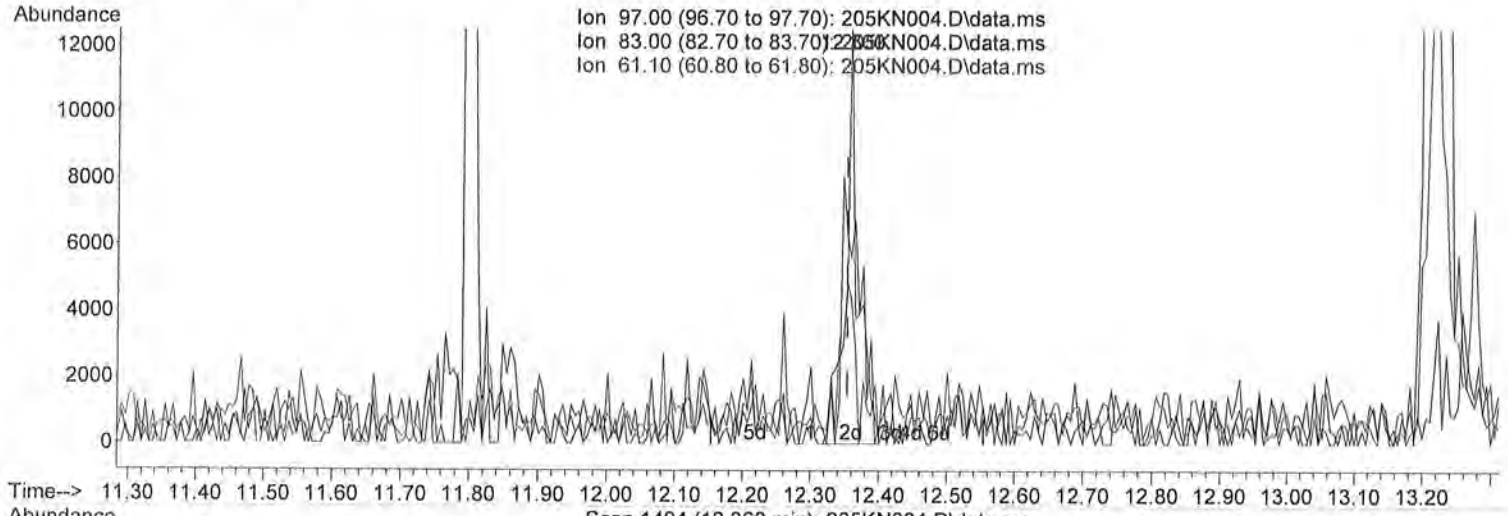
Review by/Date

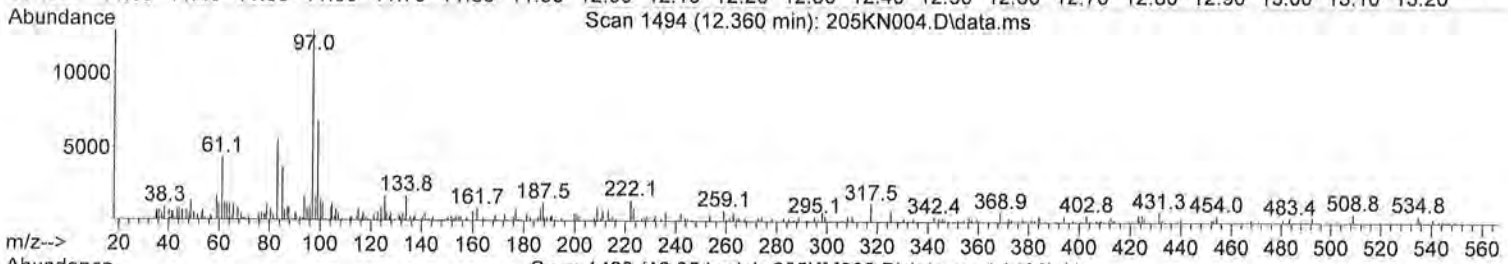
Review by/Date:

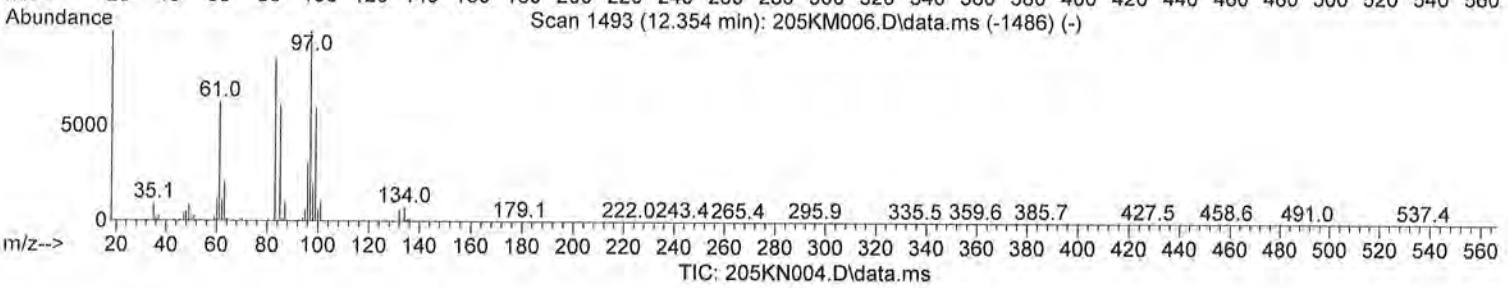
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN004.D\data.ms

(60) 1,1,2-Trichloroethane

12.360min (+ 0.006) 1.20 ug/L m

response 16136

Ion	Exp%	Act%
97.00	100.00	100.00
83.00	90.90	10.44#
61.10	65.40	7.86#
0.00	0.00	0.00

Select One:

[ ] Original (Unacceptable) Manual Integration

[ ] [illegible] Integration

[ ] [illegible] baseline selection)

[ ] [illegible] result not found

[ ] [illegible] integration

[ ] Reintegrate to spot peaks

[ ] ISTD reintegration

[ ] Other:

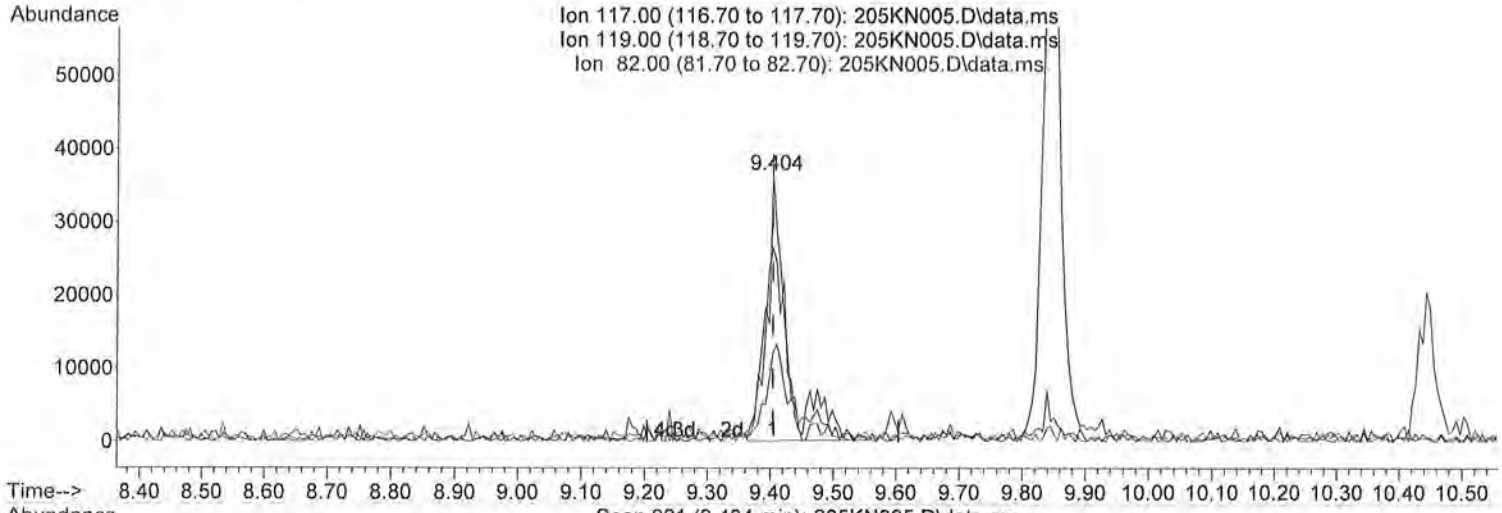
Review by/Date W 11/19/20

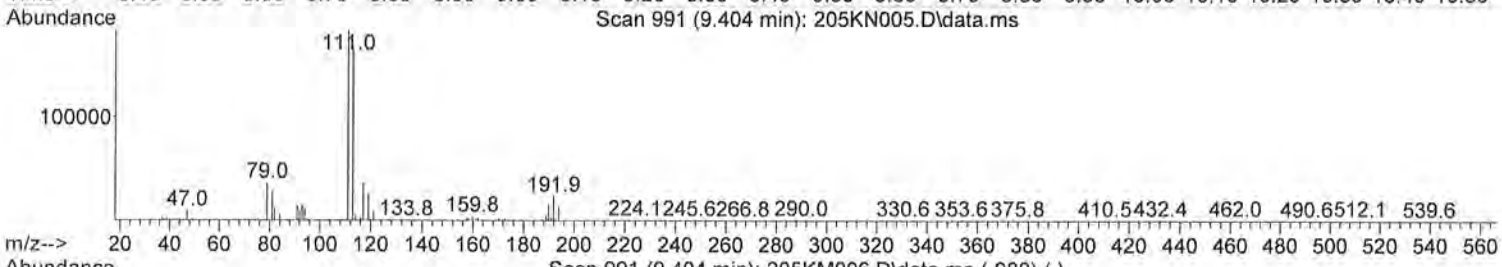
Review by/Date:

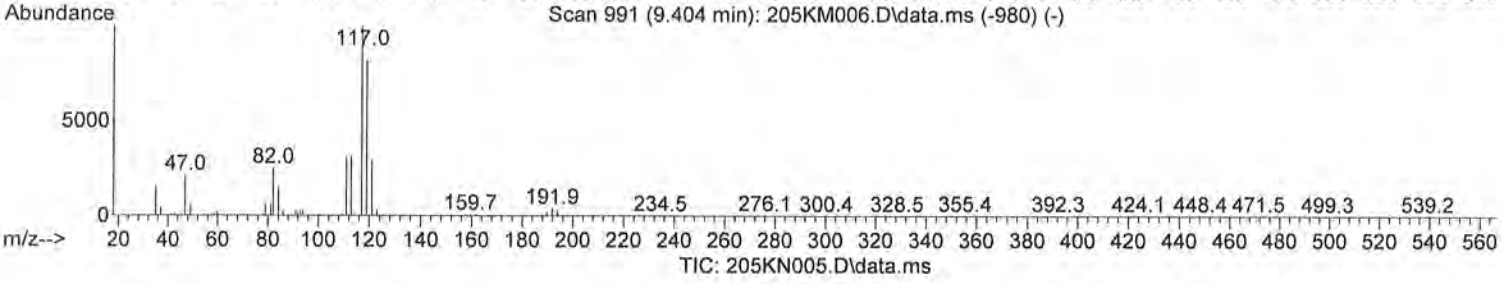
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN005.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 4.90 ug/L

response 78732

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	79.64
82.00	27.60	40.68#
0.00	0.00	0.00

Select One:

[ ] Other:

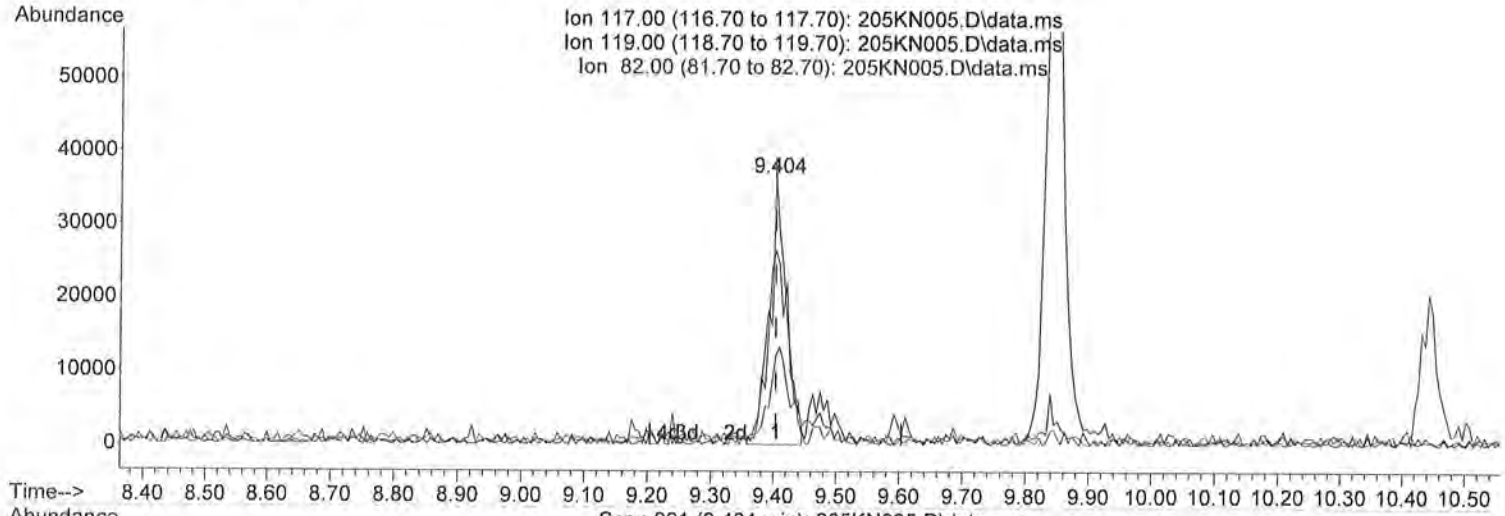
Review by/Date Wukeski

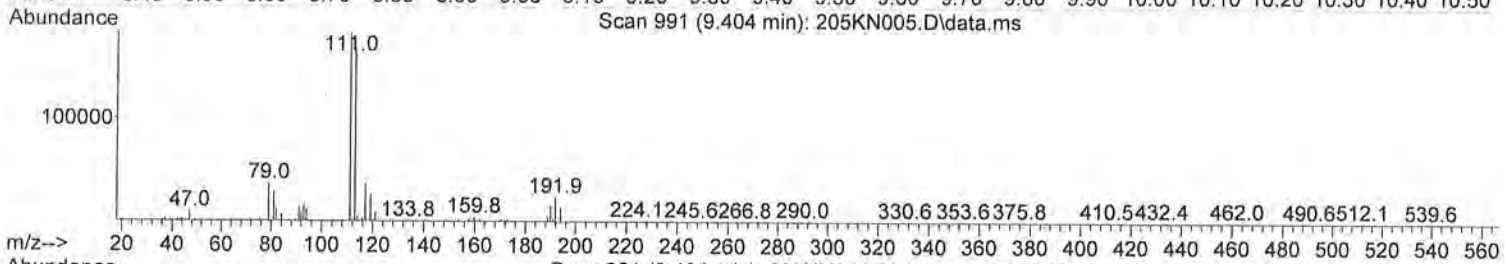
Review by/Date:

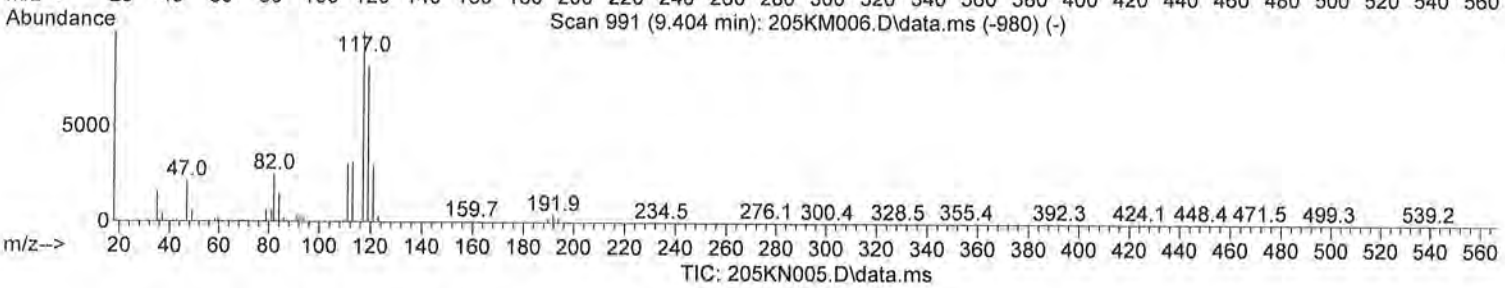
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN005.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 4.27 ug/L m

response 68664

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	91.32
82.00	27.60	46.64#
0.00	0.00	0.00

Select One:

[ ] Other:

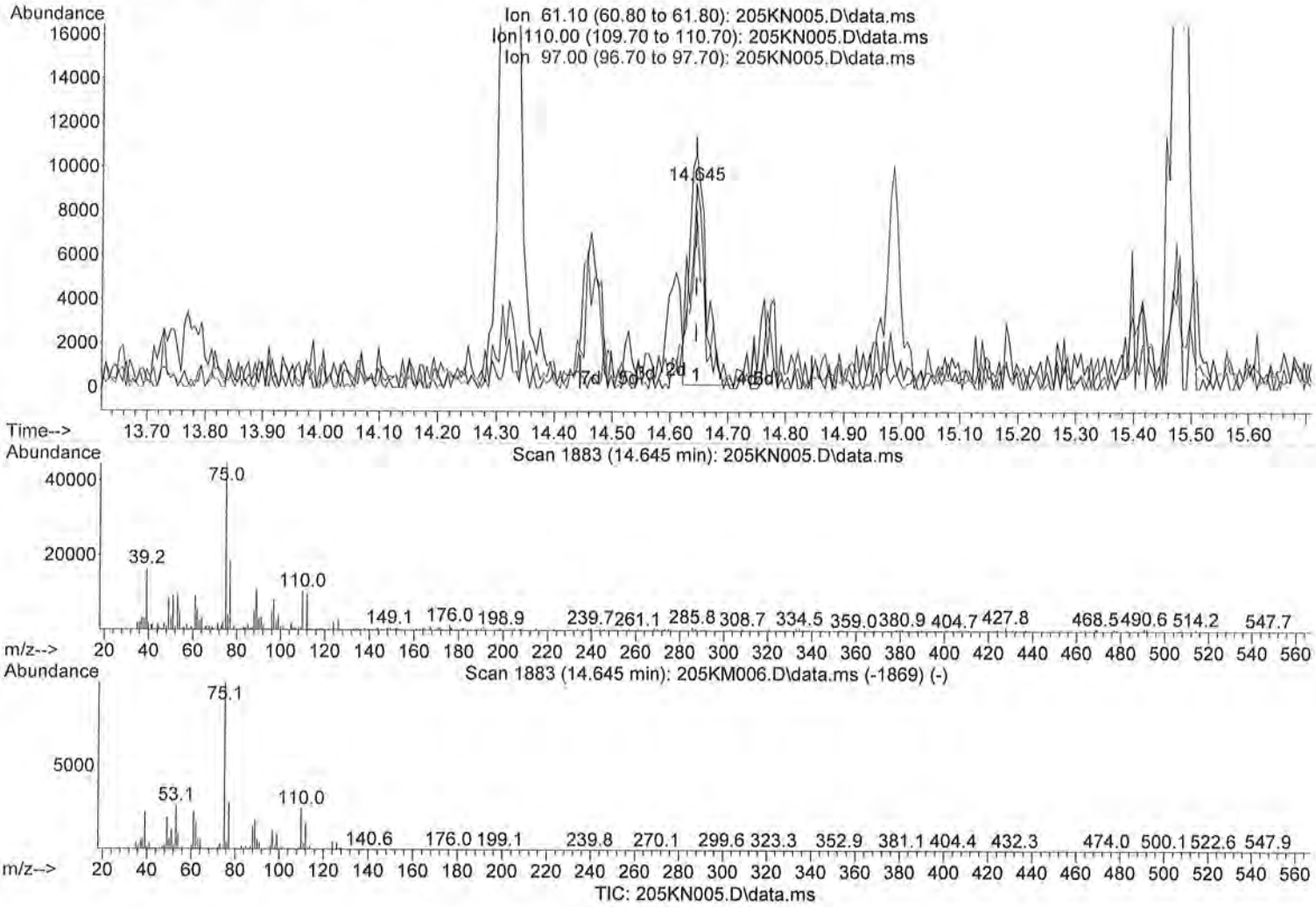
Review by/Date: KW 11/20/20

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



TIC: 205KN005.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 2.18 ug/L

response 16030

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	142.51#
97.00	45.60	94.38#
0.00	0.00	0.00

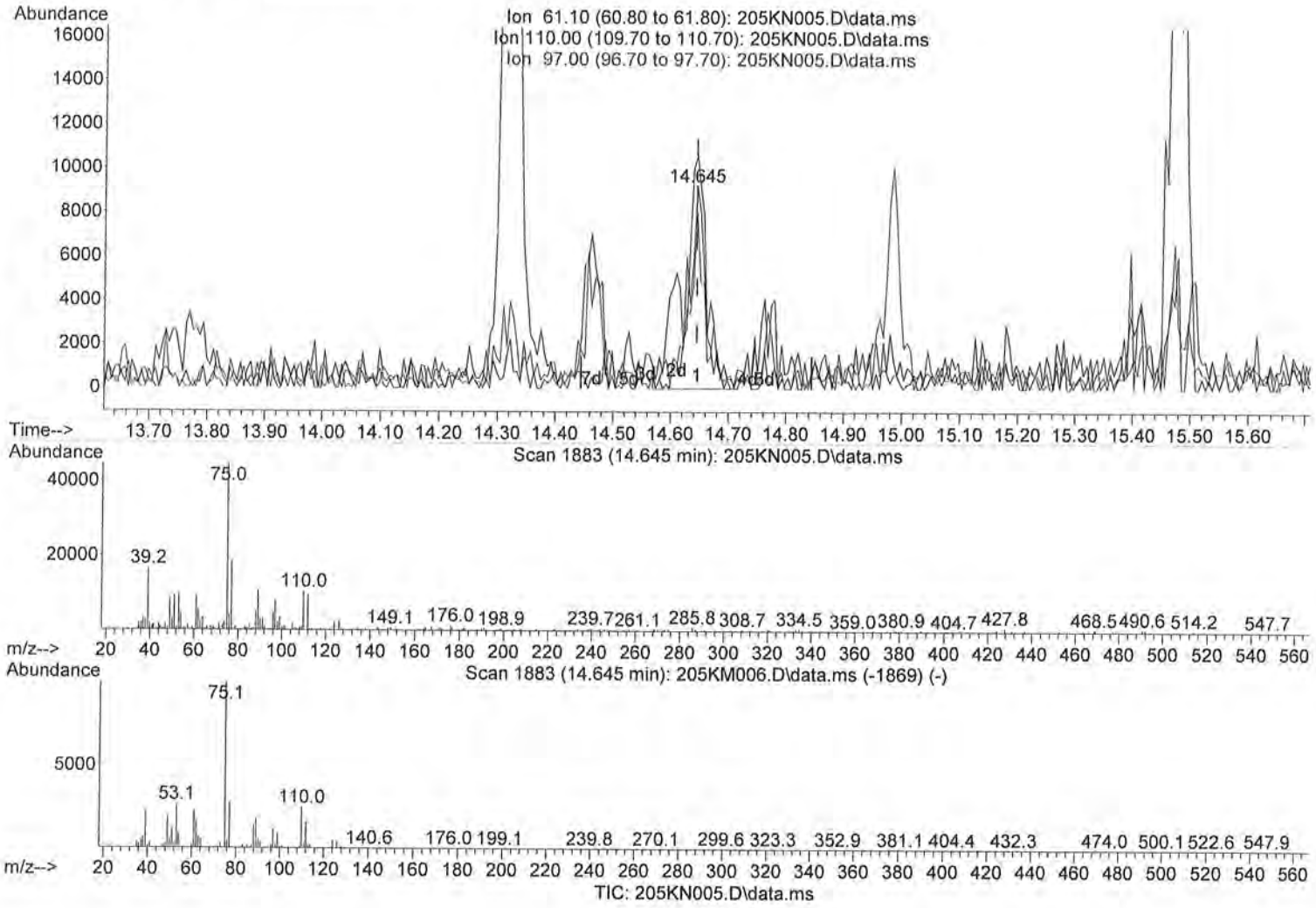
Select One:
[x] Original integration [ ] Manual Integration
Select reason for manual integration:
[x] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 11/20/20
Review by/Date:

111920W.M Thu Nov 19 12:20:05 2020

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 3.52 ug/L m

response 25913

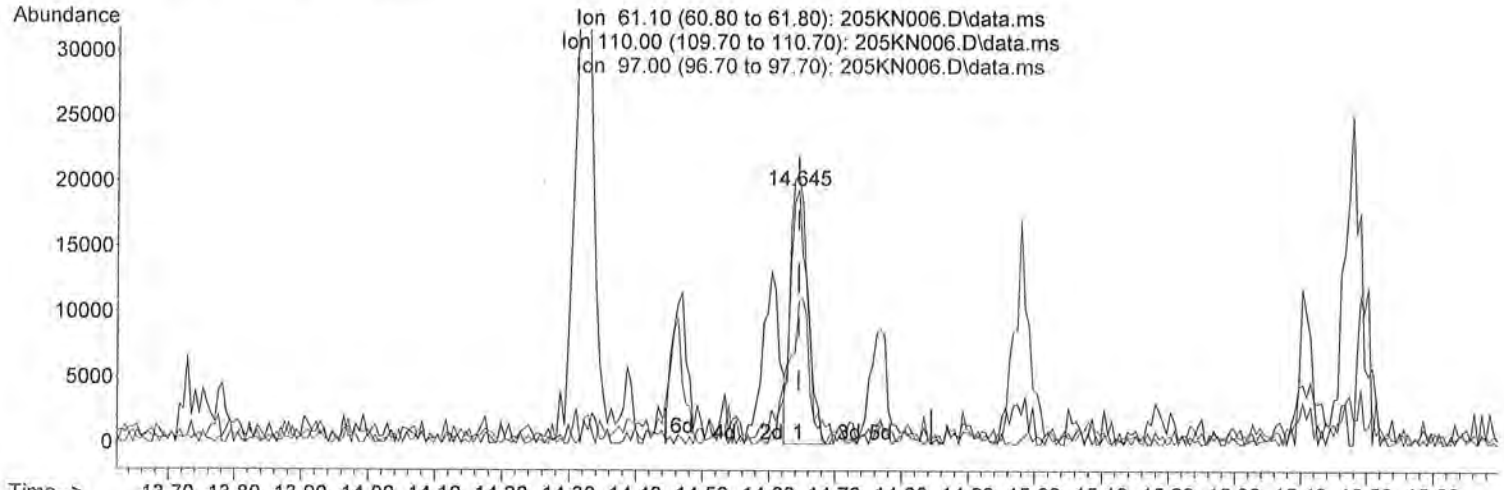
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	88.16
97.00	45.60	58.38#
0.00	0.00	0.00

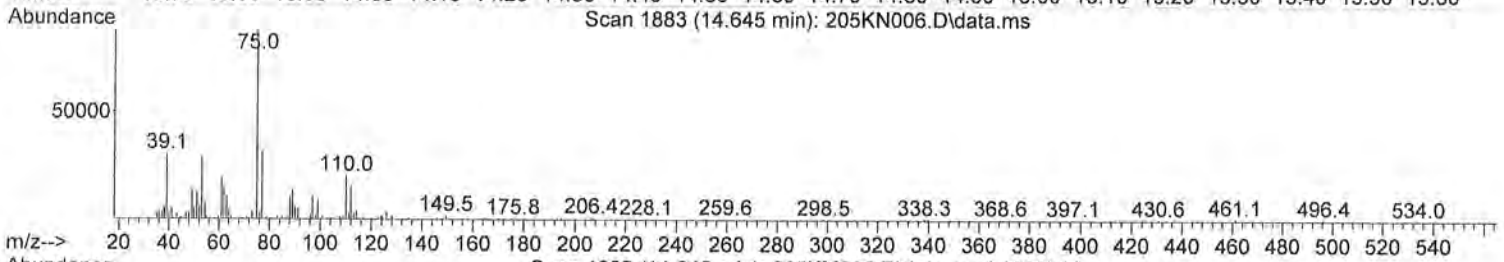
Select One:
[ ] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date 11/19/20
Review by/Date:

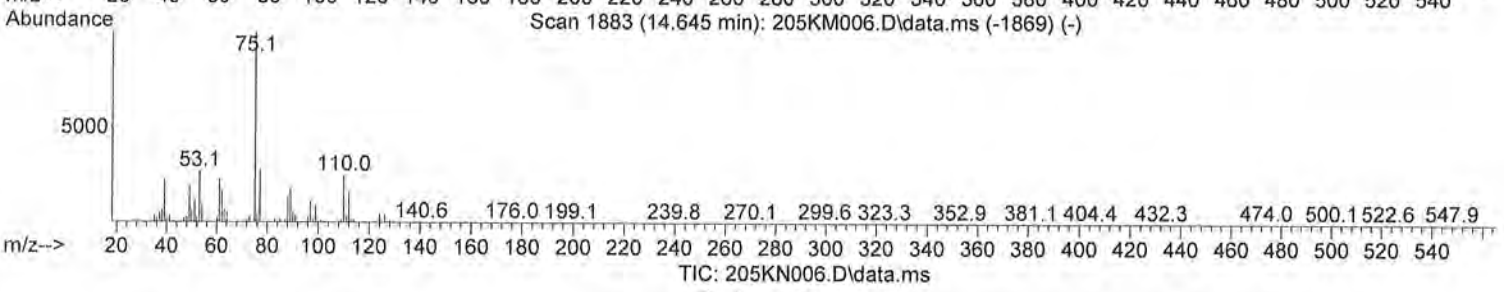
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN006.D
Acq On : 19 Nov 2020 10:18 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 19 12:13:19 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN006.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 4.92 ug/L

response 35588

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	115.40#
97.00	45.60	74.17#
0.00	0.00	0.00

Select One:

[ ] Manual Integration

[ ] Manual integration:

[ ] poor peak (peak tailing, baseline selection)

[ ] incorrect peak selection/Peak not found

[ ] Partial integration

[ ] Baseline drop for split peaks

[ ] IS/TD reintegration

[ ] Other:

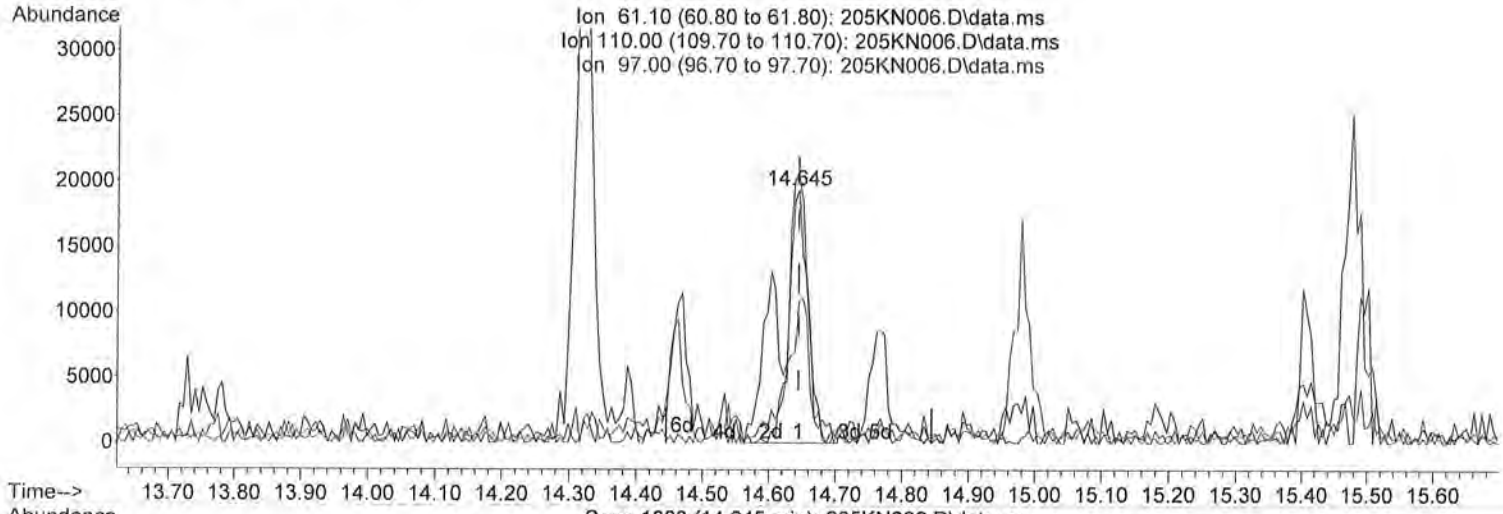
Review by/Date 11/23/20

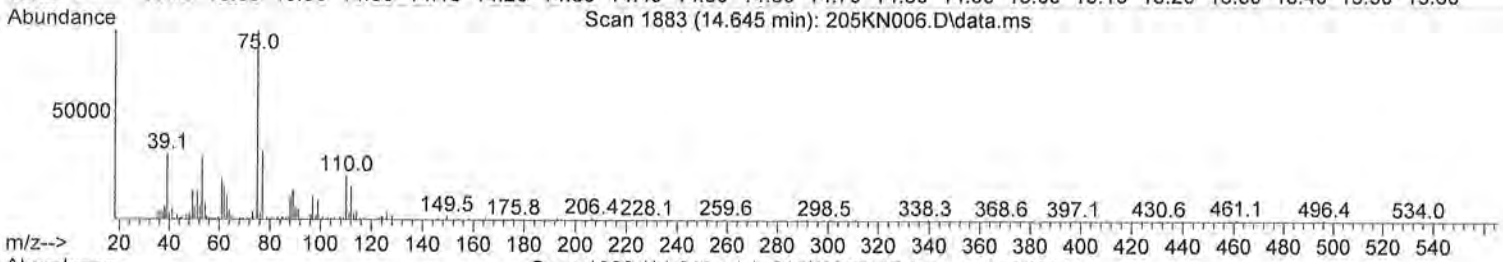
Review by/Date:

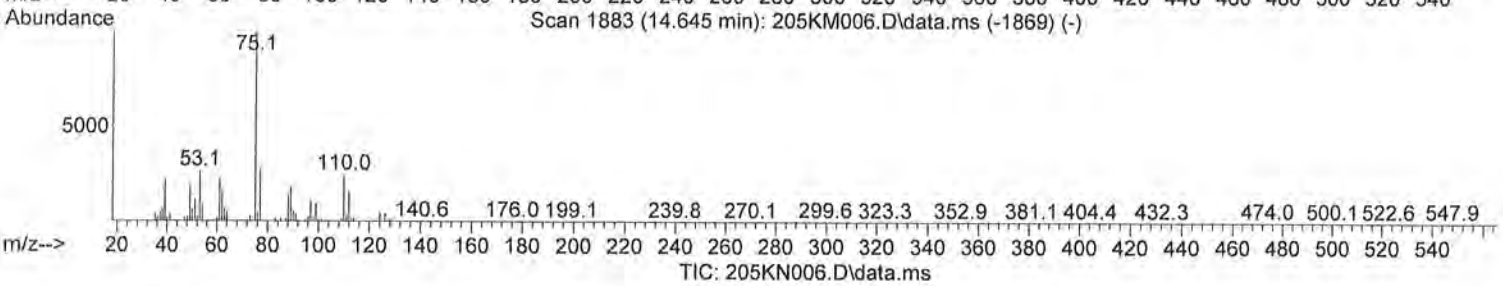
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN006.D
Acq On : 19 Nov 2020 10:18 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 19 12:13:19 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN006.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 8.20 ug/L m

response 59327

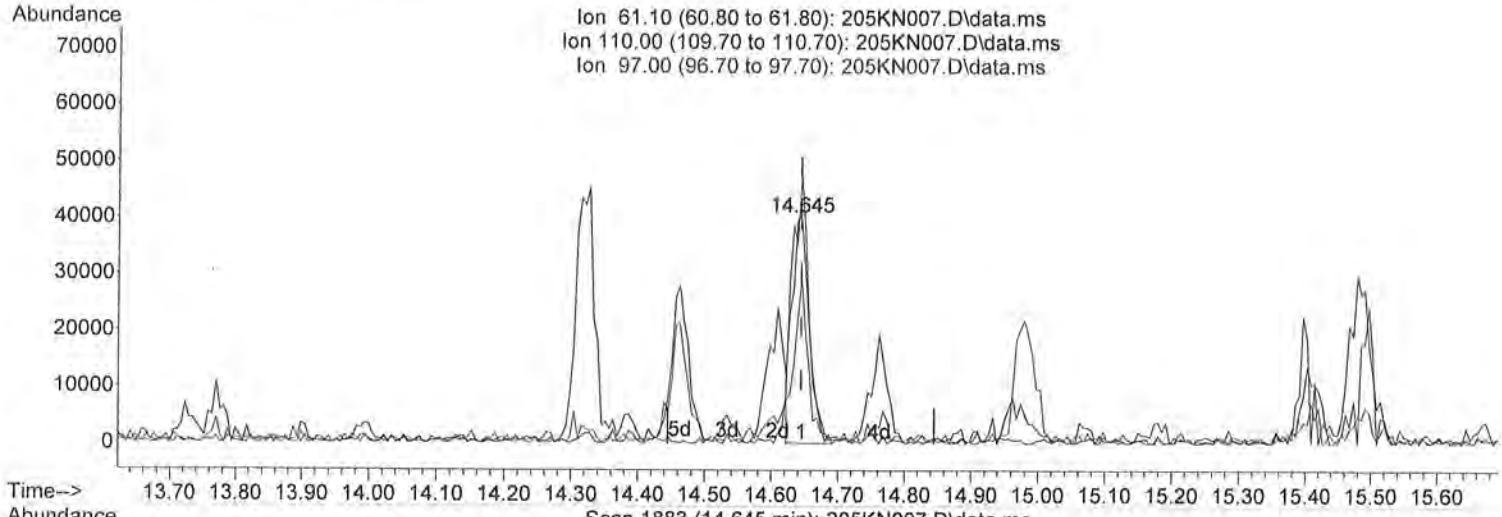
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	69.22
97.00	45.60	44.49
0.00	0.00	0.00

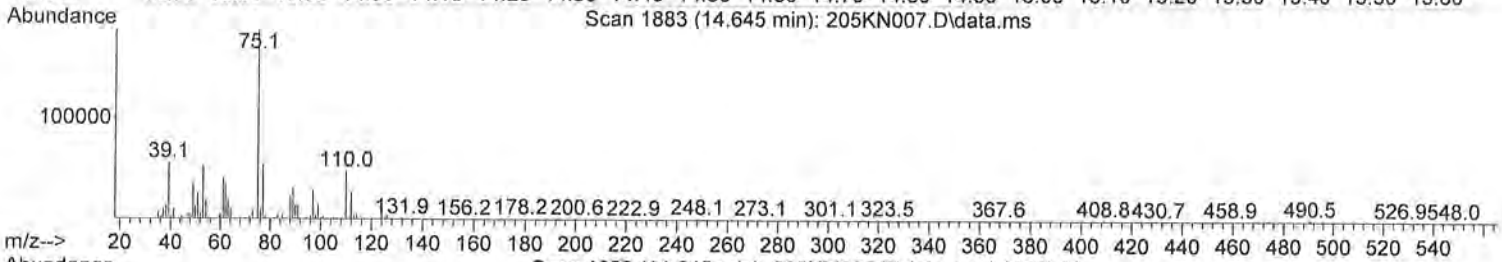
Select One:
[ ] Manual Integration
[ ] Integration:
[ ] Peak selection (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date 11/23/20
Review by/Date:

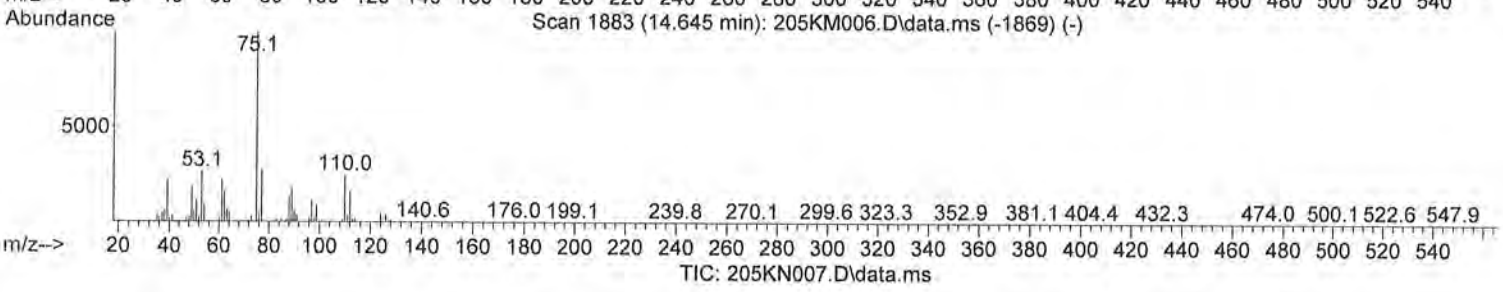
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN007.D
Acq On : 19 Nov 2020 10:49 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 19 12:13:23 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN007.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 9.98 ug/L

response 72138

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	122.36#
97.00	45.60	76.42#
0.00	0.00	0.00

Select One:

[ ] Manual Integration

[ ] Manual Integration:

[ ] Poor peak definition (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Co-elution

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

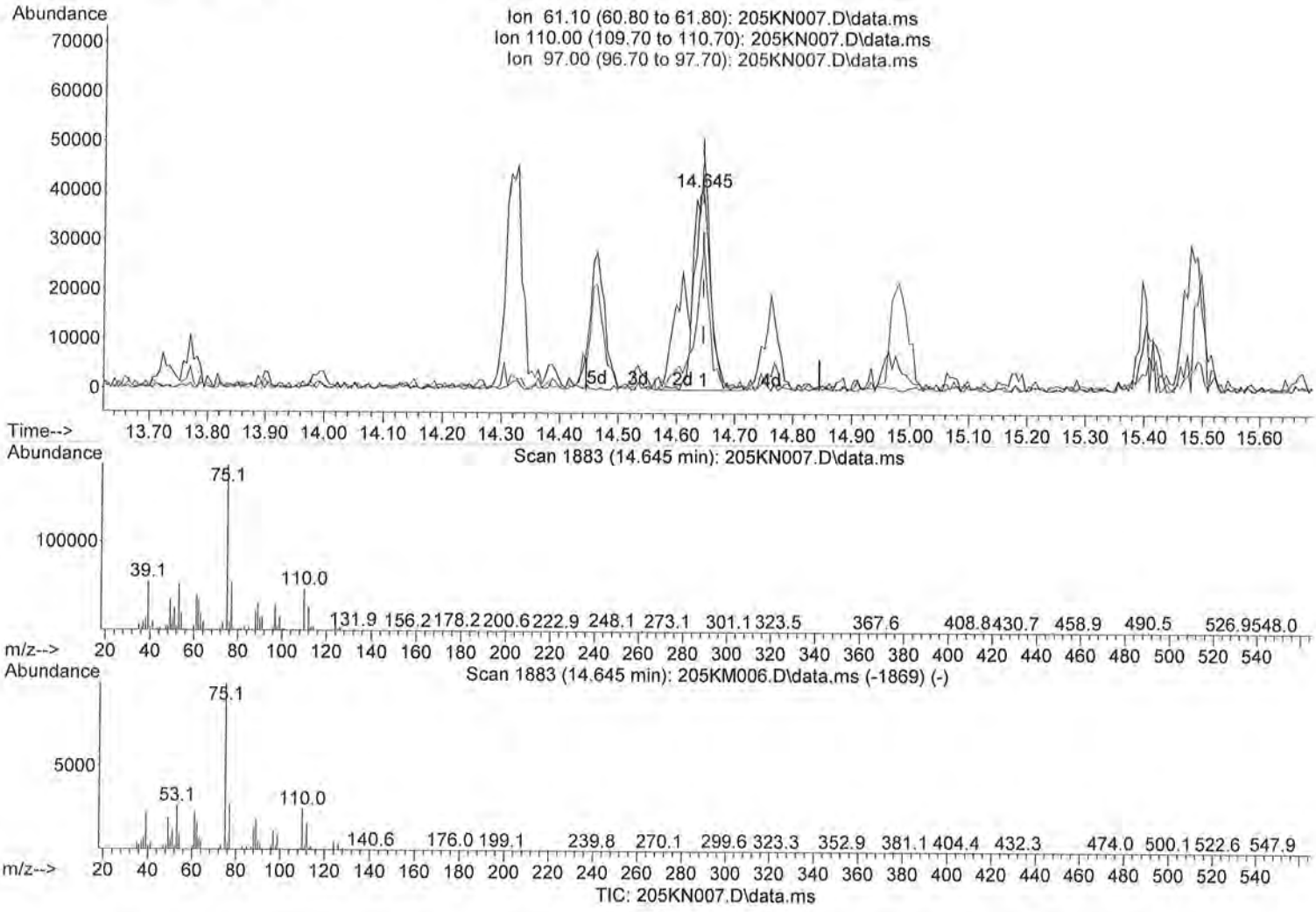
Review by/Date 11/20/20

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN007.D
Acq On : 19 Nov 2020 10:49 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 19 12:13:23 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 15.74 ug/L m

response 113773

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	77.58
97.00	45.60	48.45
0.00	0.00	0.00

Select One:

[ ] Manual Integration

[ ] Integration:

[ ] (peak tailing, baseline selection)

[ ] Peak not found

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

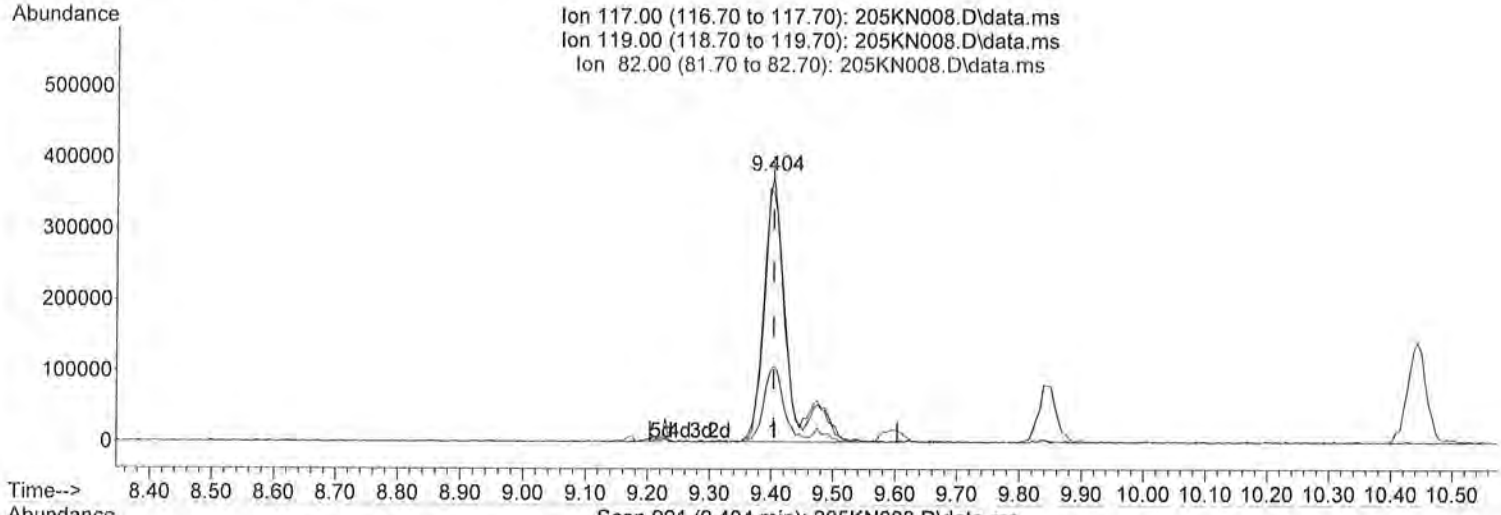
Review by/Date

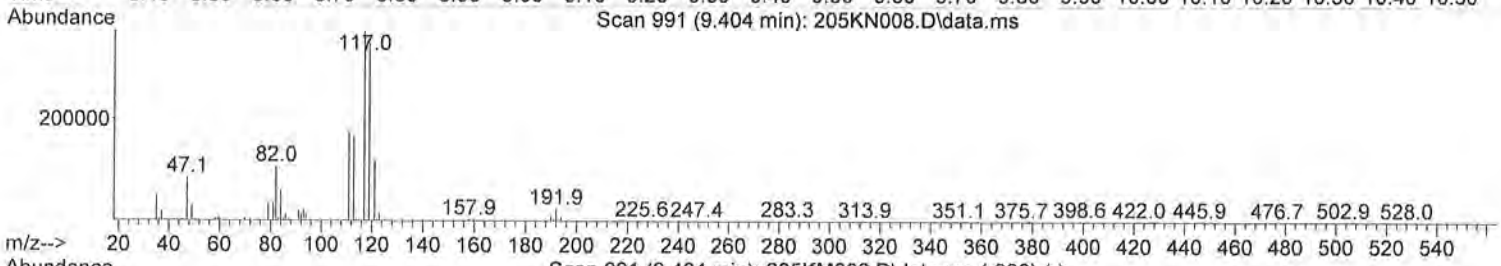
Review by/Date:

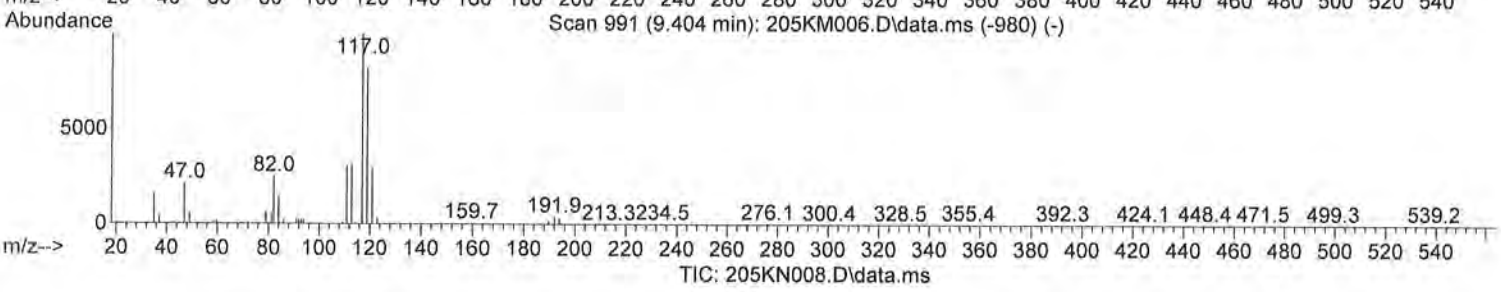
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN008.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 63.70 ug/L

response 983486

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	93.44
82.00	27.60	24.71
0.00	0.00	0.00

Select One:

[ ] Manual integration

[ ] Other:

[ ] Peak not found (, baseline selection)

[ ] Peak not found

[ ] Peak not found

[ ] Baseline drop for spot peaks

[ ] IS ID reintegration

[ ] Other:

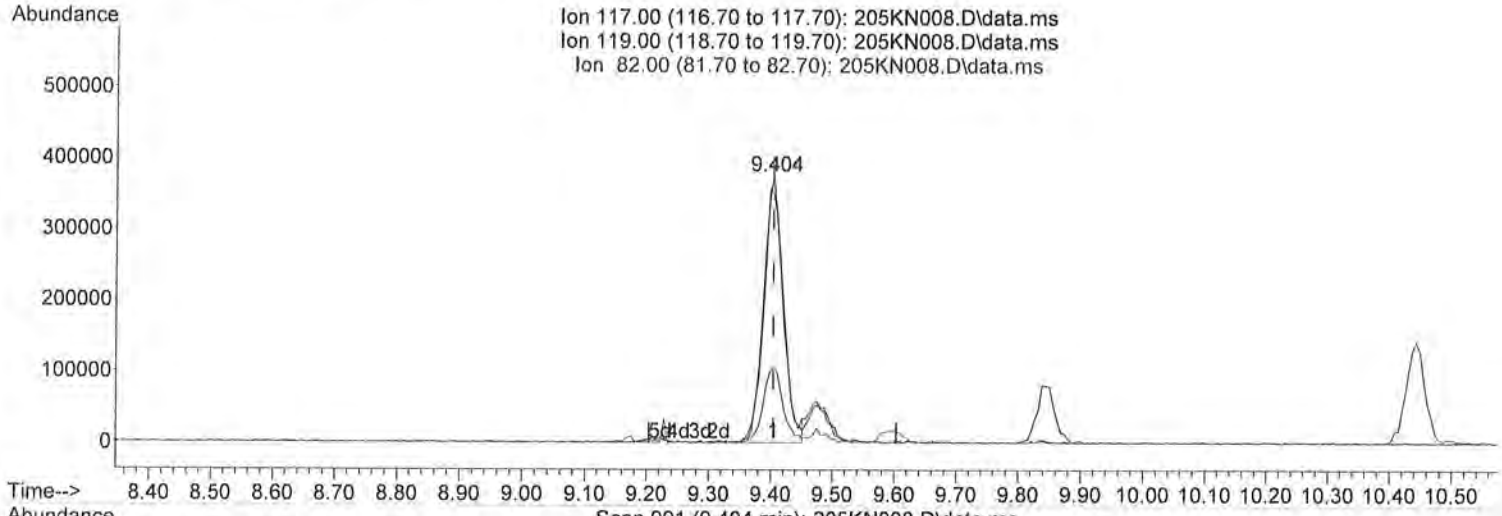
Review by/Date: KJ 11/19/20

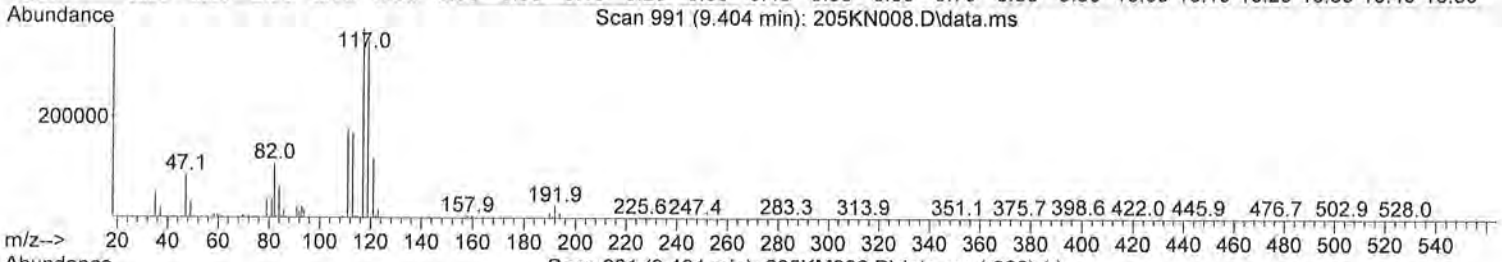
Review by/Date:

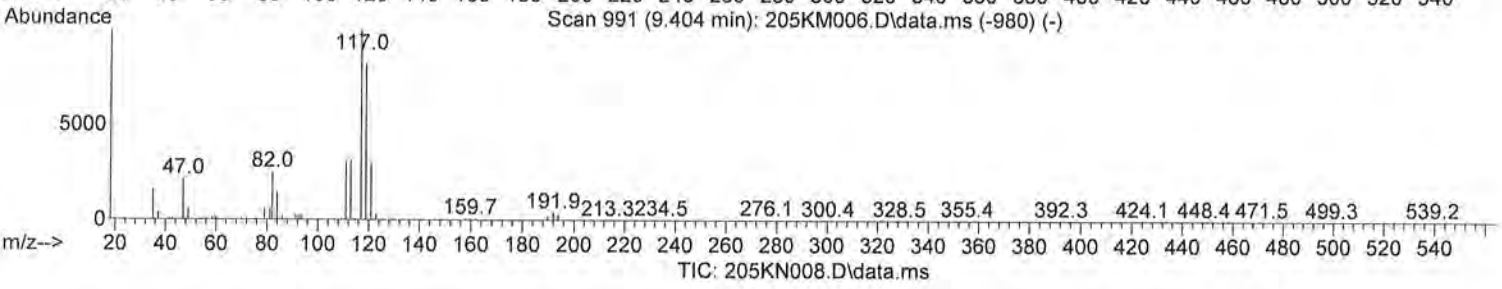
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN008.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 54.69 ug/L m

response 844268

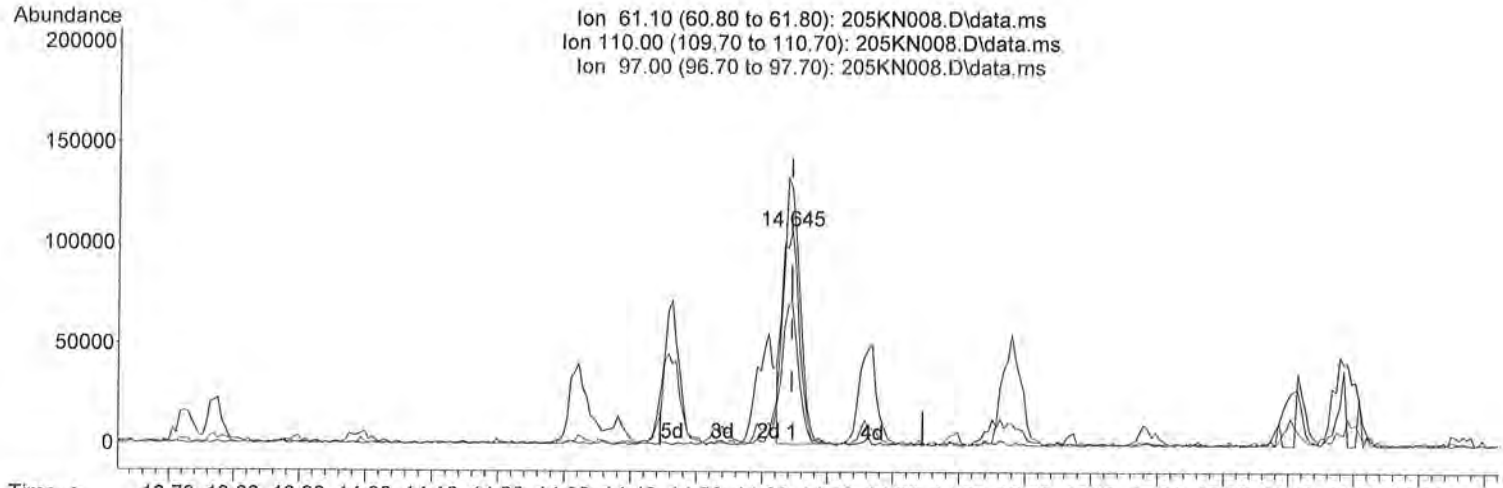
Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	108.85
82.00	27.60	28.79
0.00	0.00	0.00

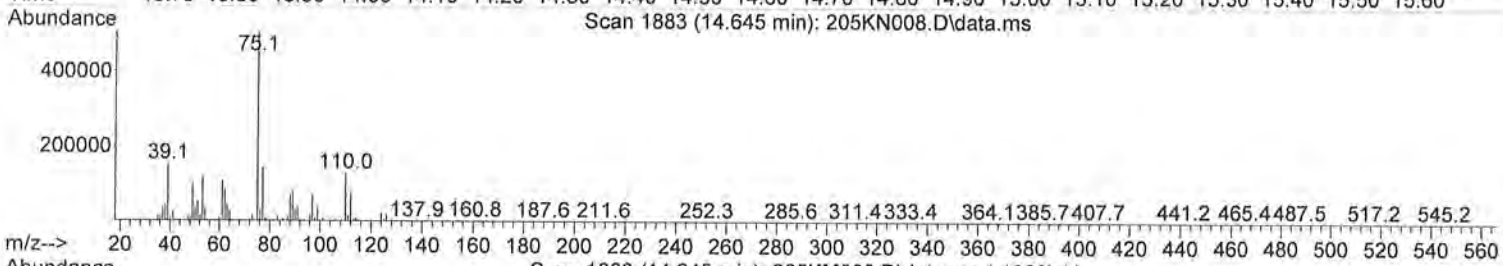
Select One:
[ ] Other integration (not manual integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 11/20/20
Review by/Data:

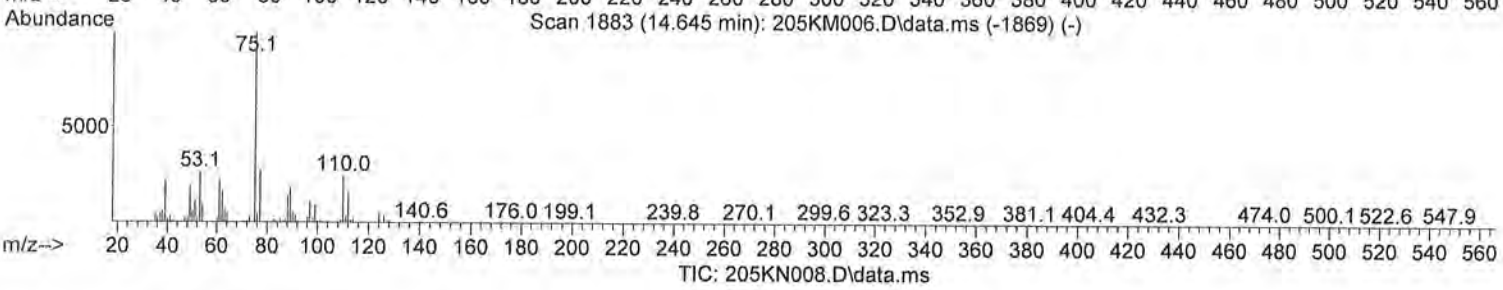
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN008.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 26.33 ug/L

response 194191

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	128.20#
97.00	45.60	76.22#
0.00	0.00	0.00

Select One:

[ ] Manual Integration

[ ] Other (peak selection/Peak not found

[ ] Valley integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

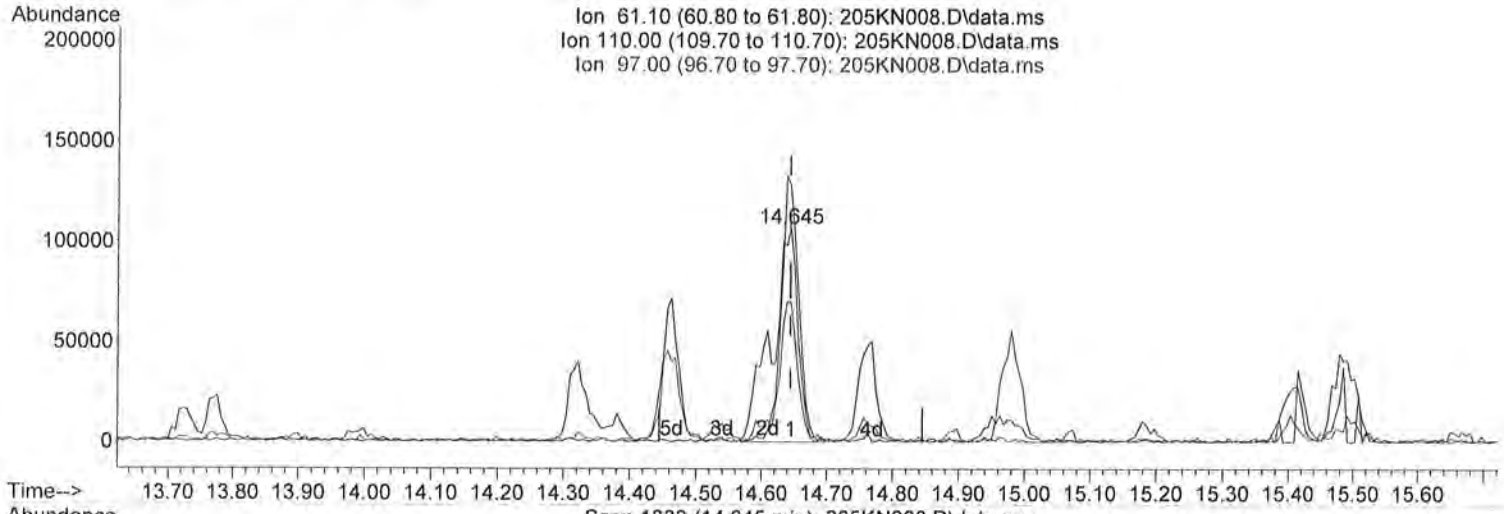
Review by/Date W 11/24/21

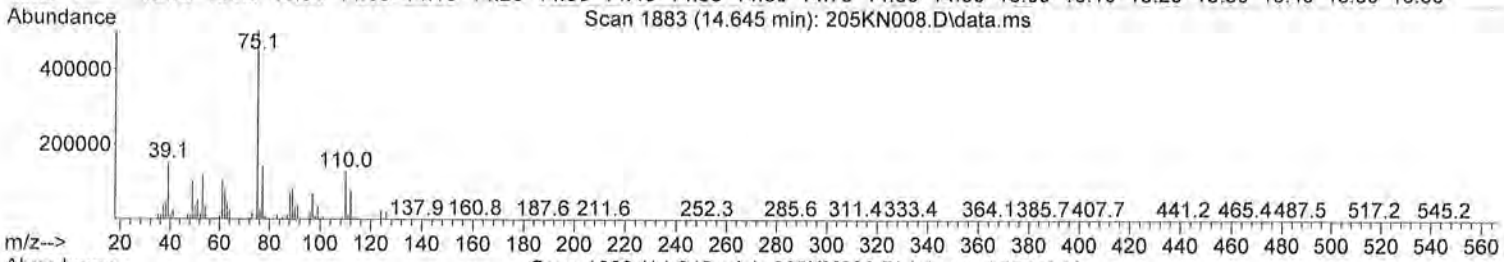
Review by/Date:

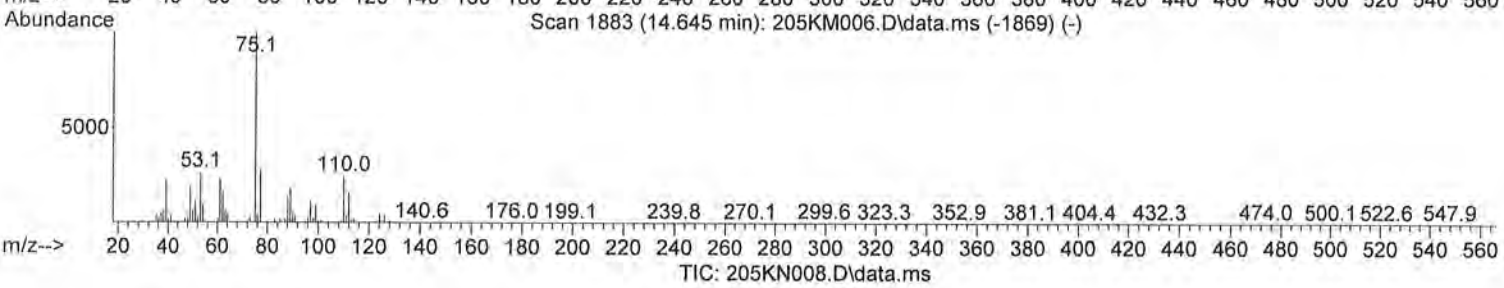
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN008.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 40.84 ug/L m

response 301262

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	82.64
97.00	45.60	49.13
0.00	0.00	0.00

Select Case:

[ ] Correct Integration / Manual Integration

[ ] Incorrect Integration (peak found, baseline selection)

[ ] Incorrect Integration/Peak not found

[ ] Wrong Integration

[ ] Baseline drop (or split peaks

[ ] ISTD reintegration

[ ] Other:

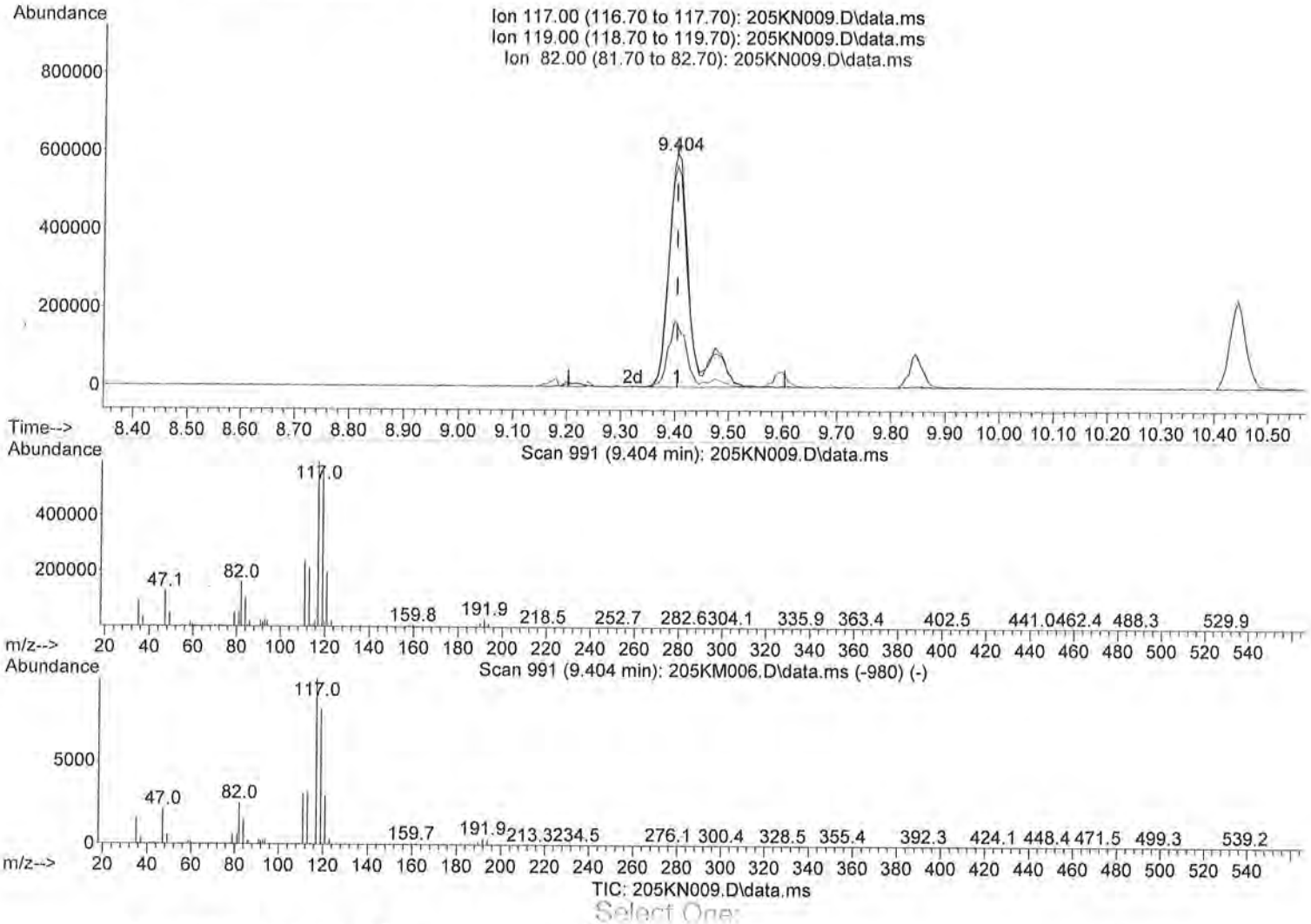
Review by/Date W 11/20/20

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



TIC: 205KN009.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 107.51 ug/L

response 1638930

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	81.21
82.00	27.60	26.61
0.00	0.00	0.00

Select One:

[ ] Other:

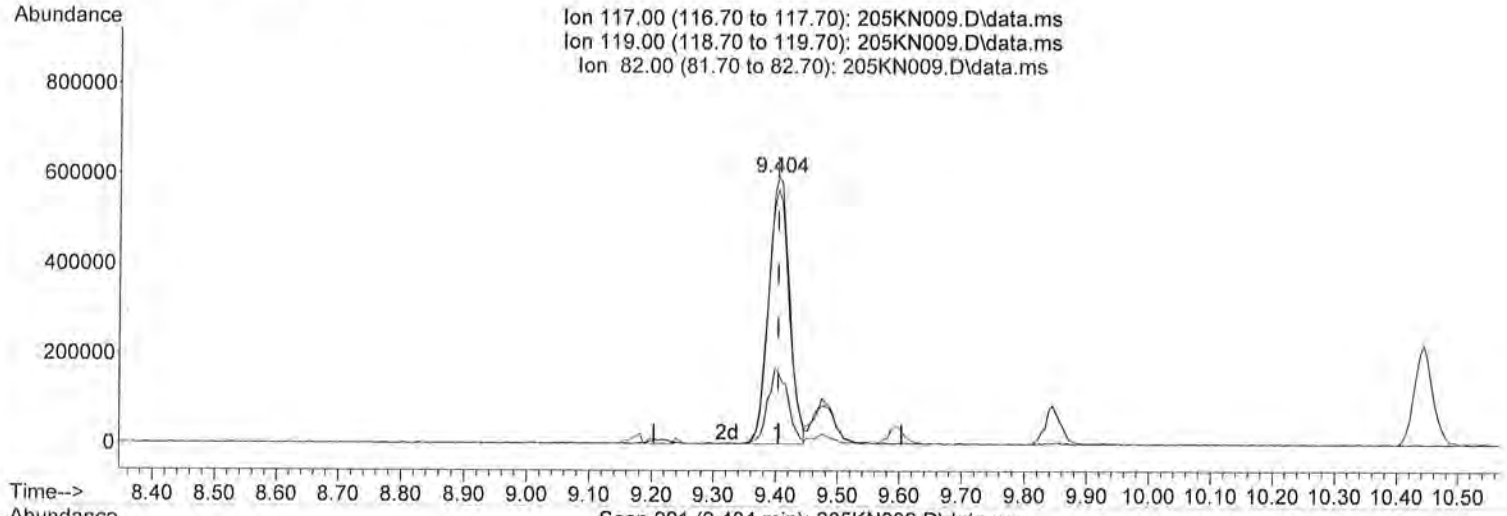
Review by/Date W 11/20/20

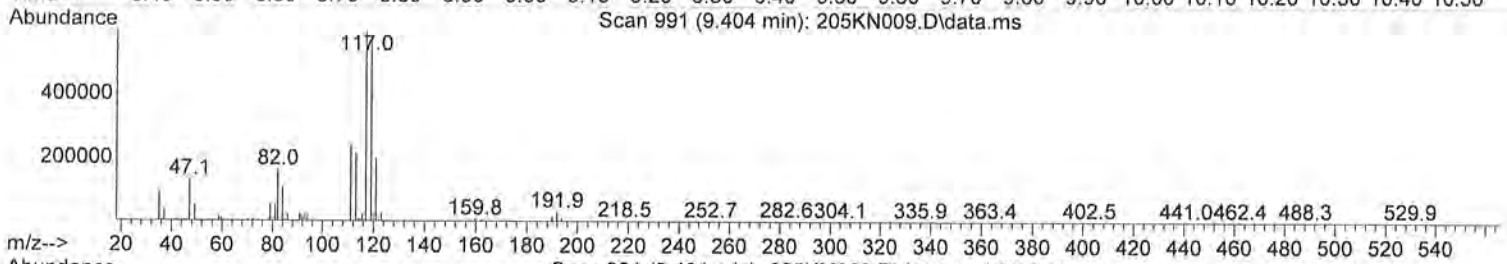
Review by/Date:

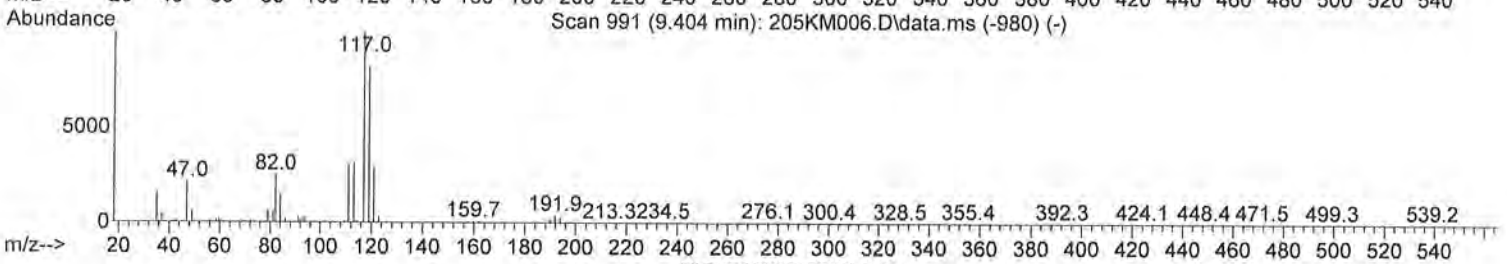
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN009.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 91.88 ug/L m

response 1400654

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	95.03
82.00	27.60	31.13
0.00	0.00	0.00

11/23/20

Select One:

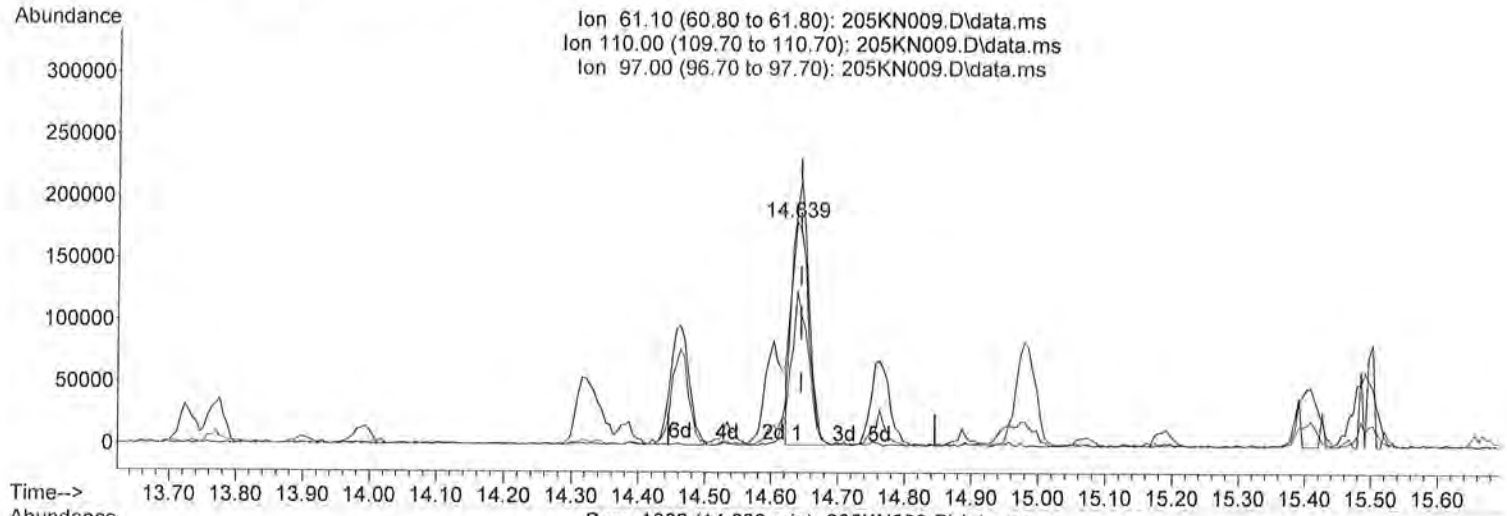
[ ] Manual Integration
[ ] Calibration
[ ] Peak Integration (baseline selection)
[ ] Peak not found
[ ] Compound not detected
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:

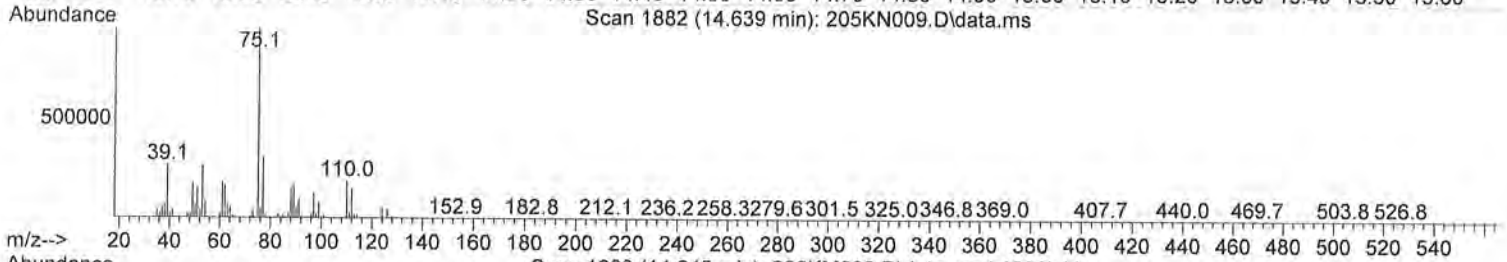
Review by/Date: 11/23/20
Review by/Date:

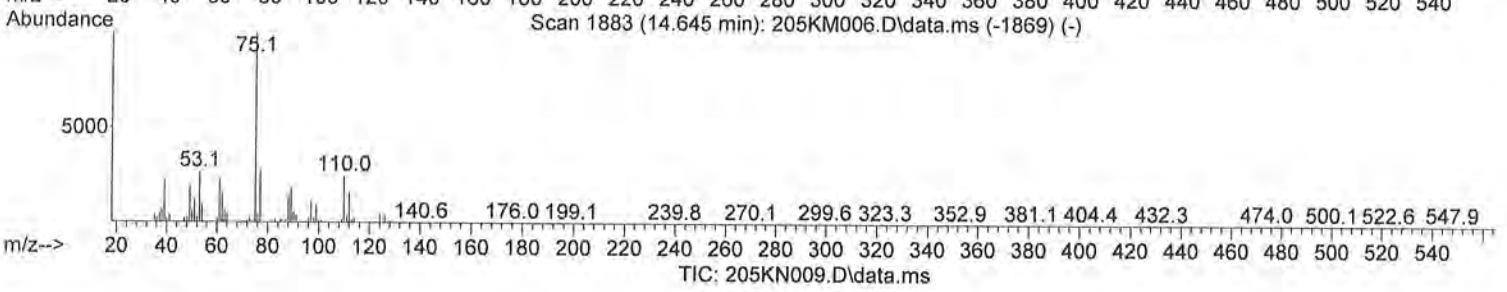
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN009.D\data.ms

(77) 1,2,3-Trichloropropane

14.639min (-0.006) 43.53 ug/L

response 321564

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	120.75#
97.00	45.60	76.71#
0.00	0.00	0.00

Select One:

X

X

[ ] Other:

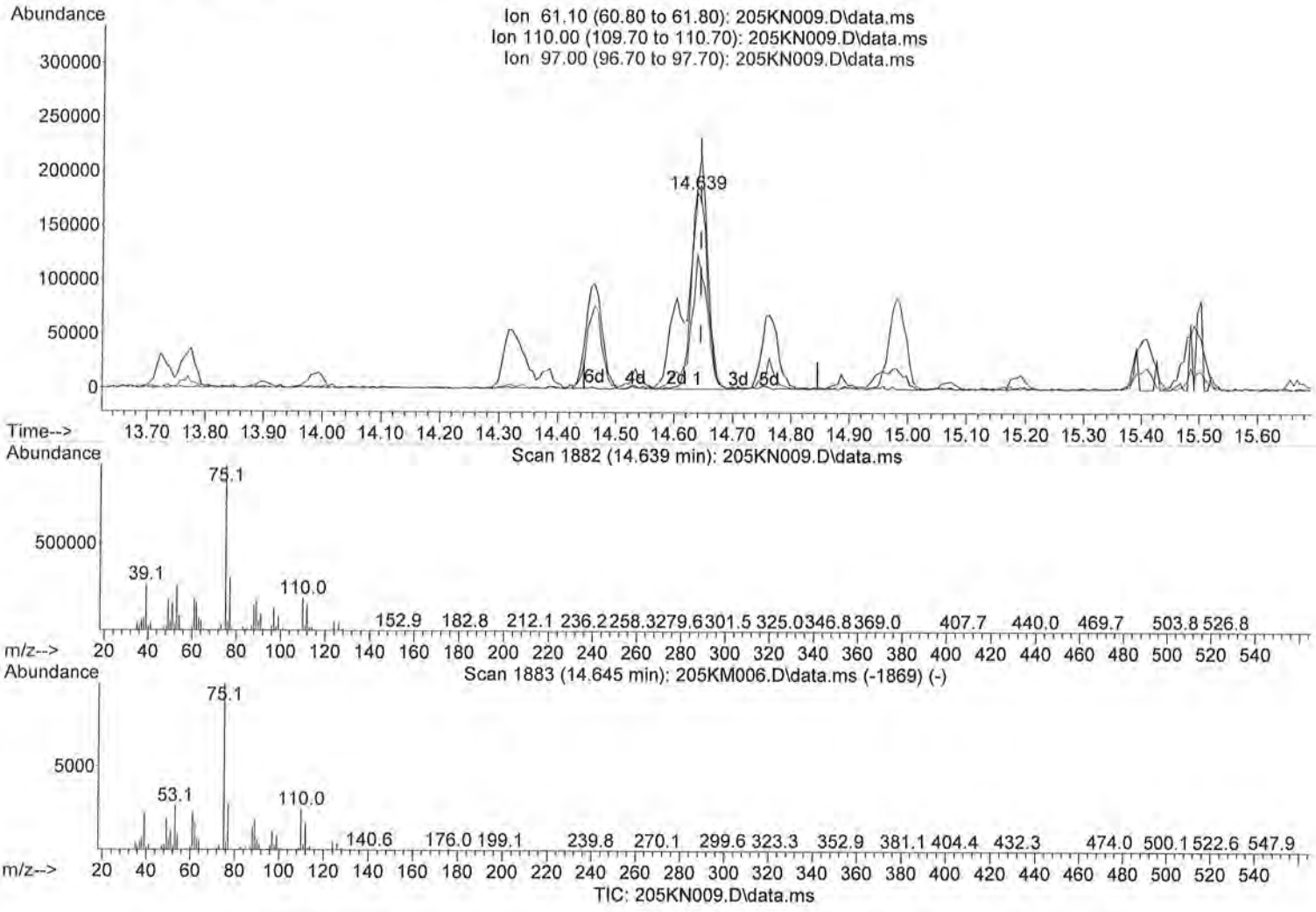
Review by/Date: W 11/20/20

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.639min (-0.006) 66.05 ug/L m

response 487875

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	79.59
97.00	45.60	50.56
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

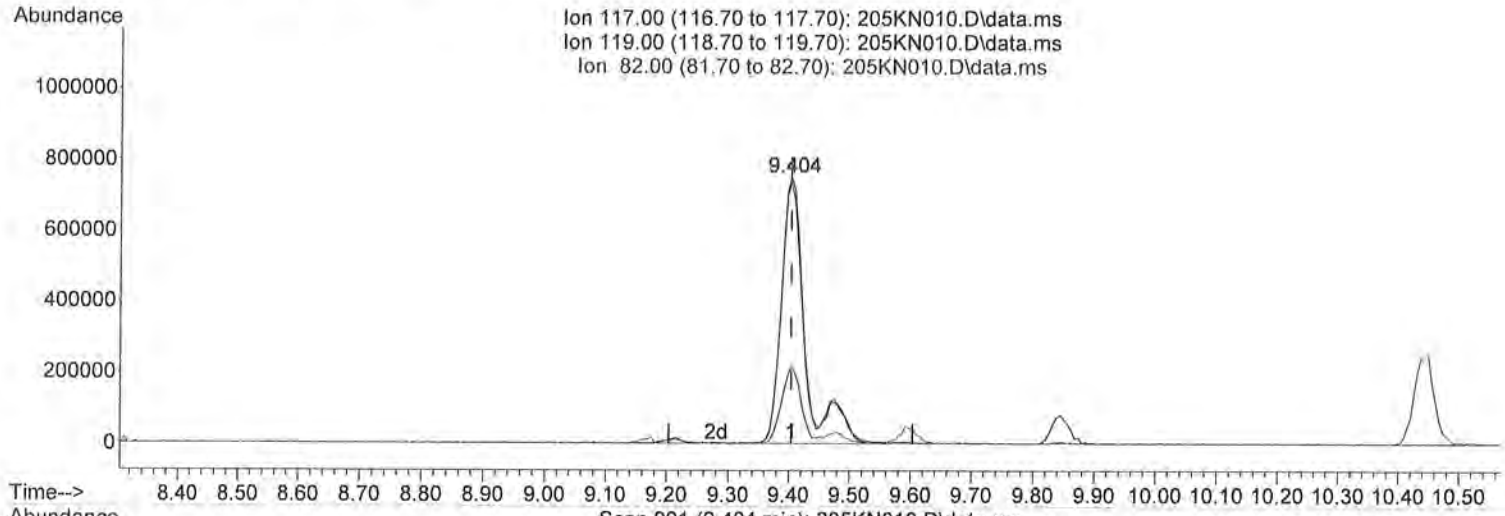
Review by/Date W 11/20/20

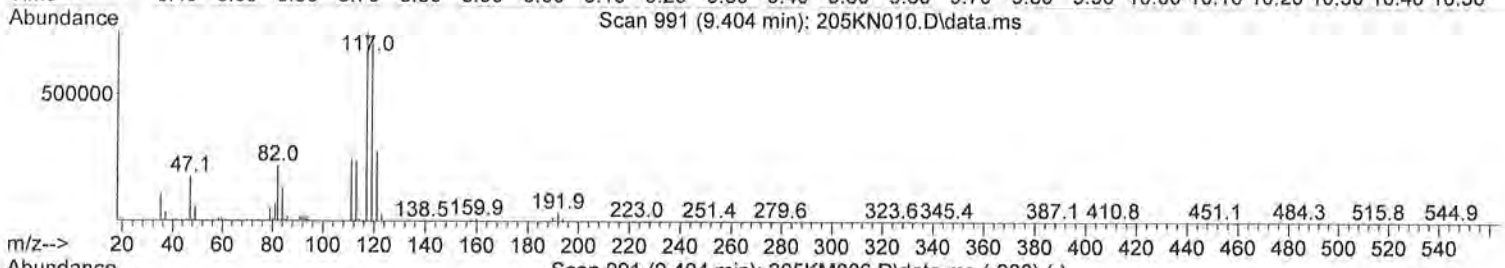
Review by/Date:

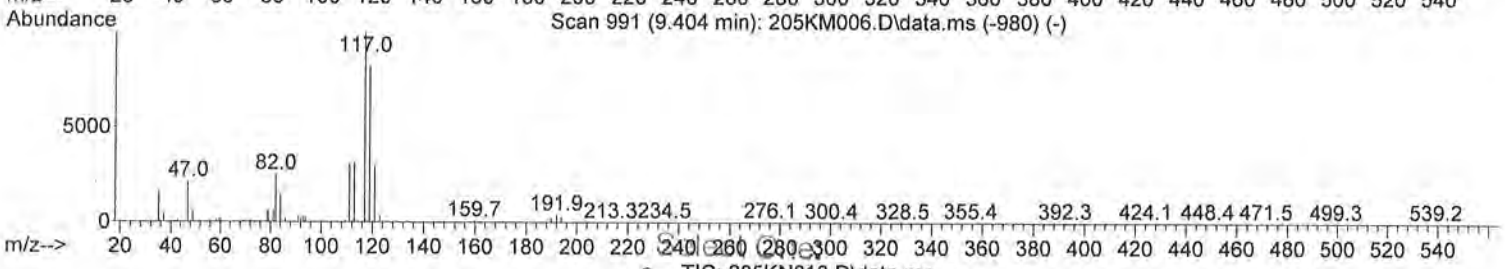
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN010.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 137.08 ug/L

response 2070325

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	95.53
82.00	27.60	26.74
0.00	0.00	0.00

[X] Original Integration [ ] Manual Integration

Select reason for manual integration

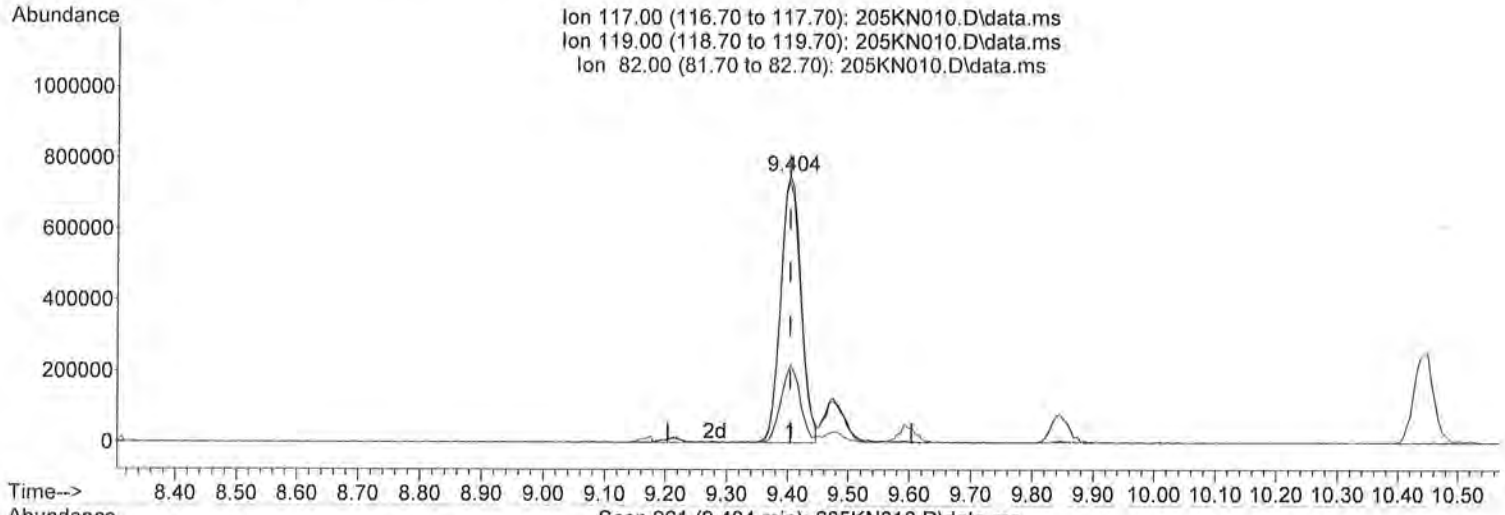
Review by/Date: 11/19/20

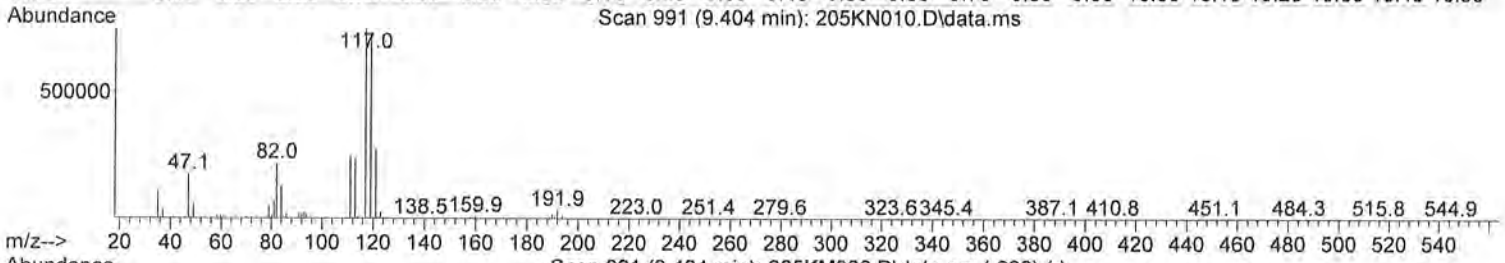
Review by/Date:

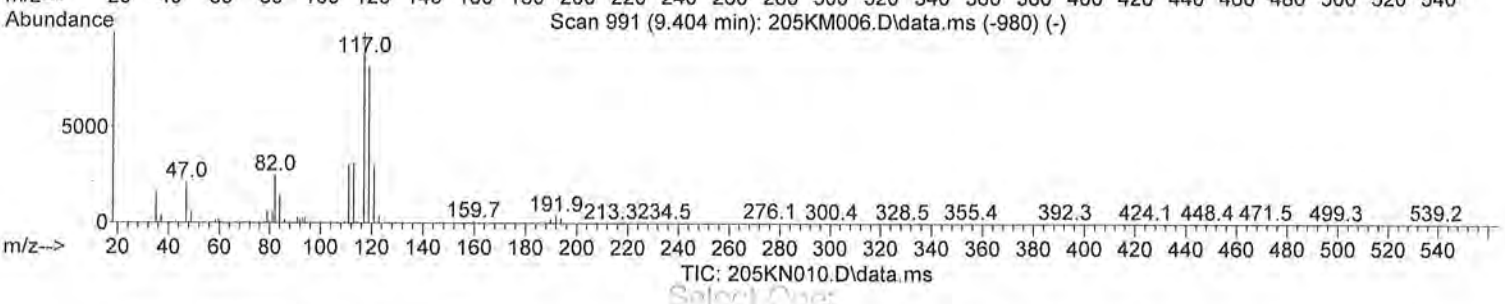
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration







TIC: 205KN010.D\data.ms

(40) Carbon Tetrachloride

9.404min (+ 0.000) 116.24 ug/L m

response 1755533

Ion	Exp%	Act%
117.00	100.00	100.00
119.00	93.20	112.66#
82.00	27.60	31.54
0.00	0.00	0.00

Select One:

[ ] Manual Integration

[ ] Manual integration:

[ ] Incorrect peak selection (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Reintegration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

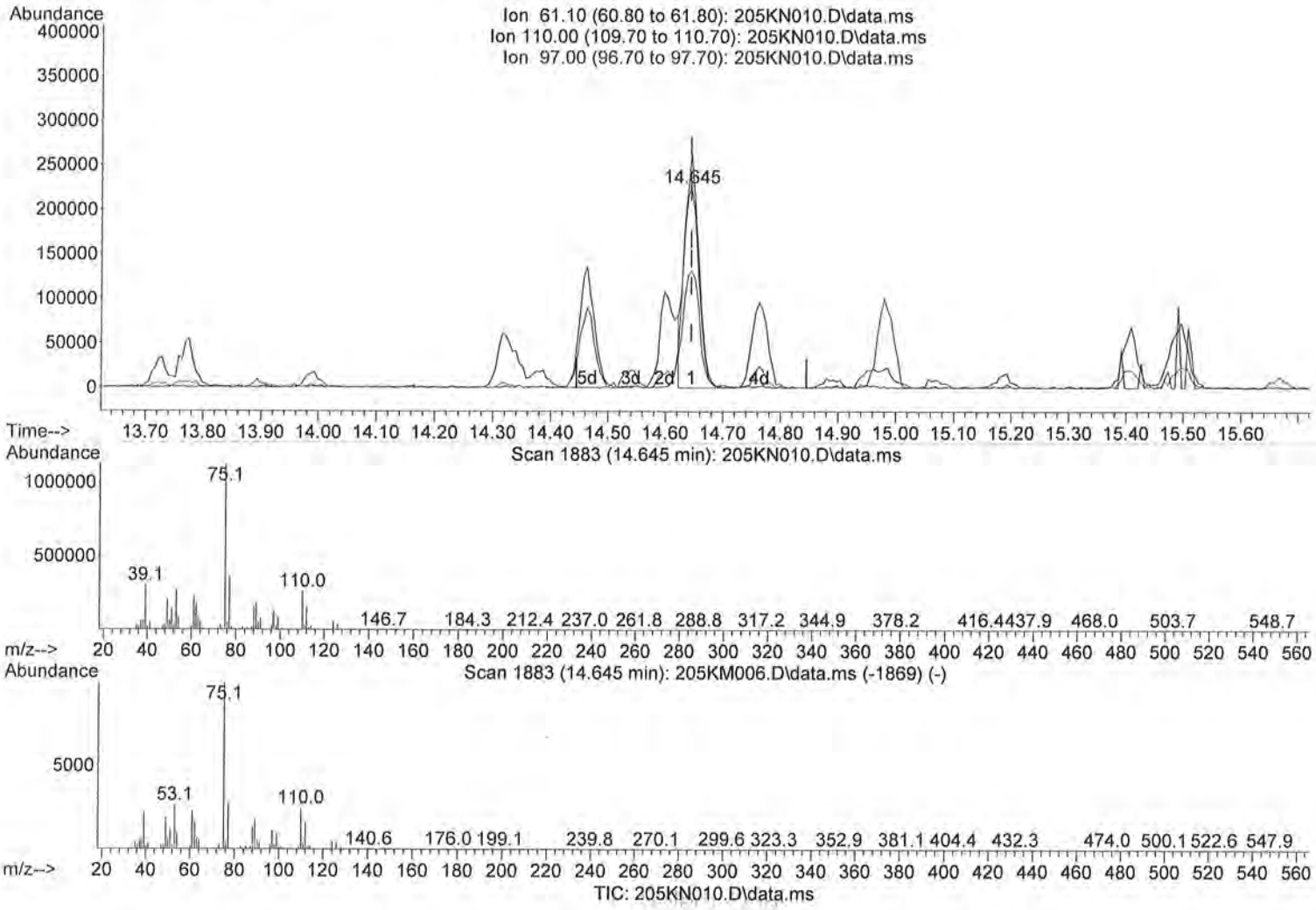
Review by/Date: W 11/23/20

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 54.53 ug/L

response 415382

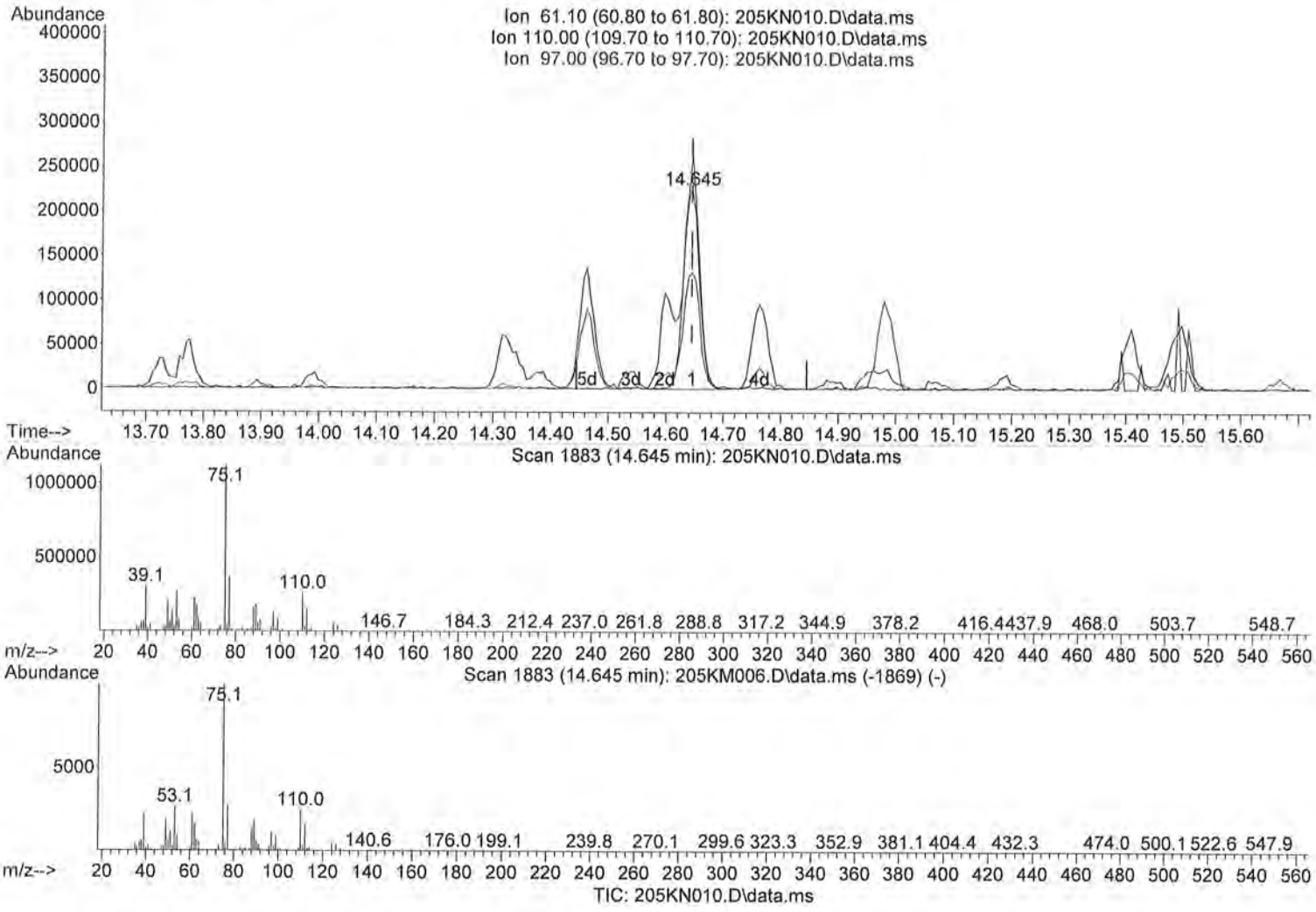
Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	115.68#
97.00	45.60	72.11#
0.00	0.00	0.00

[ ] Manual Integration
[ ] Reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 11/20/20
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 81.80 ug/L m

response 623122

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.80	77.12
97.00	45.60	48.07
0.00	0.00	0.00

Manual Integration

Peak not found

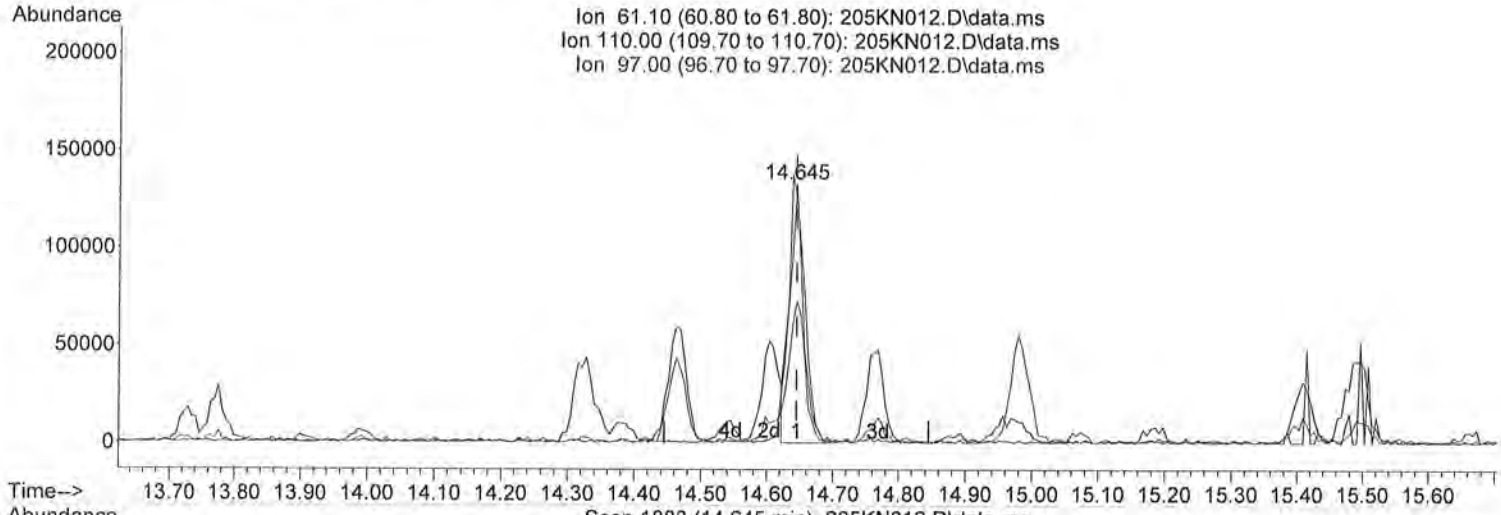
split peaks

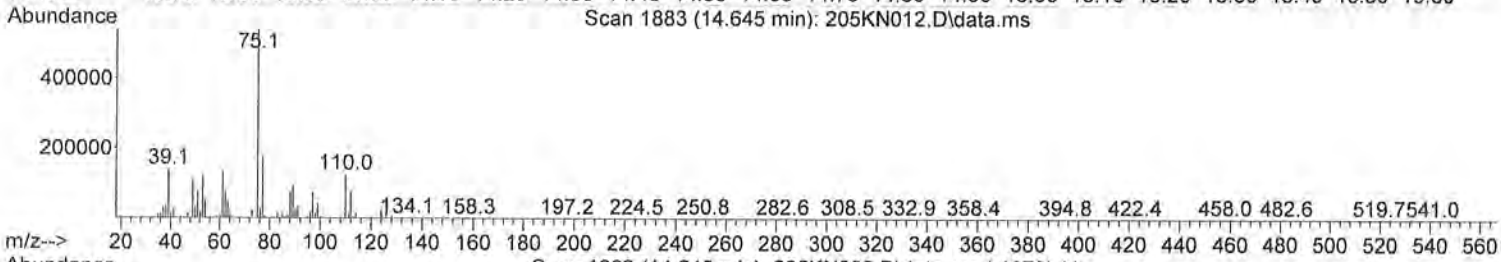
111920W.M Thu Nov 19 12:46:41 2020 Page: 1

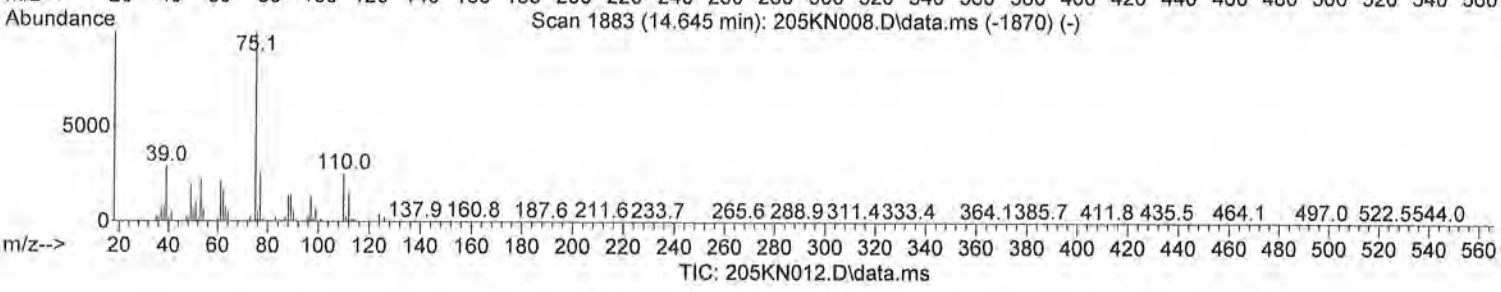
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN012.D
Acq On : 19 Nov 2020 1:24 pm
Operator : KKW
Sample : SCV
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:34:48 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 13:02:55 2020
Response via : Initial Calibration







TIC: 205KN012.D\data.ms

(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 31.90 ug/L

response 194193

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	122.25#
97.00	49.10	75.45#
0.00	0.00	0.00

Select One:

[ ] Other:

Review by/Date 11/20/20

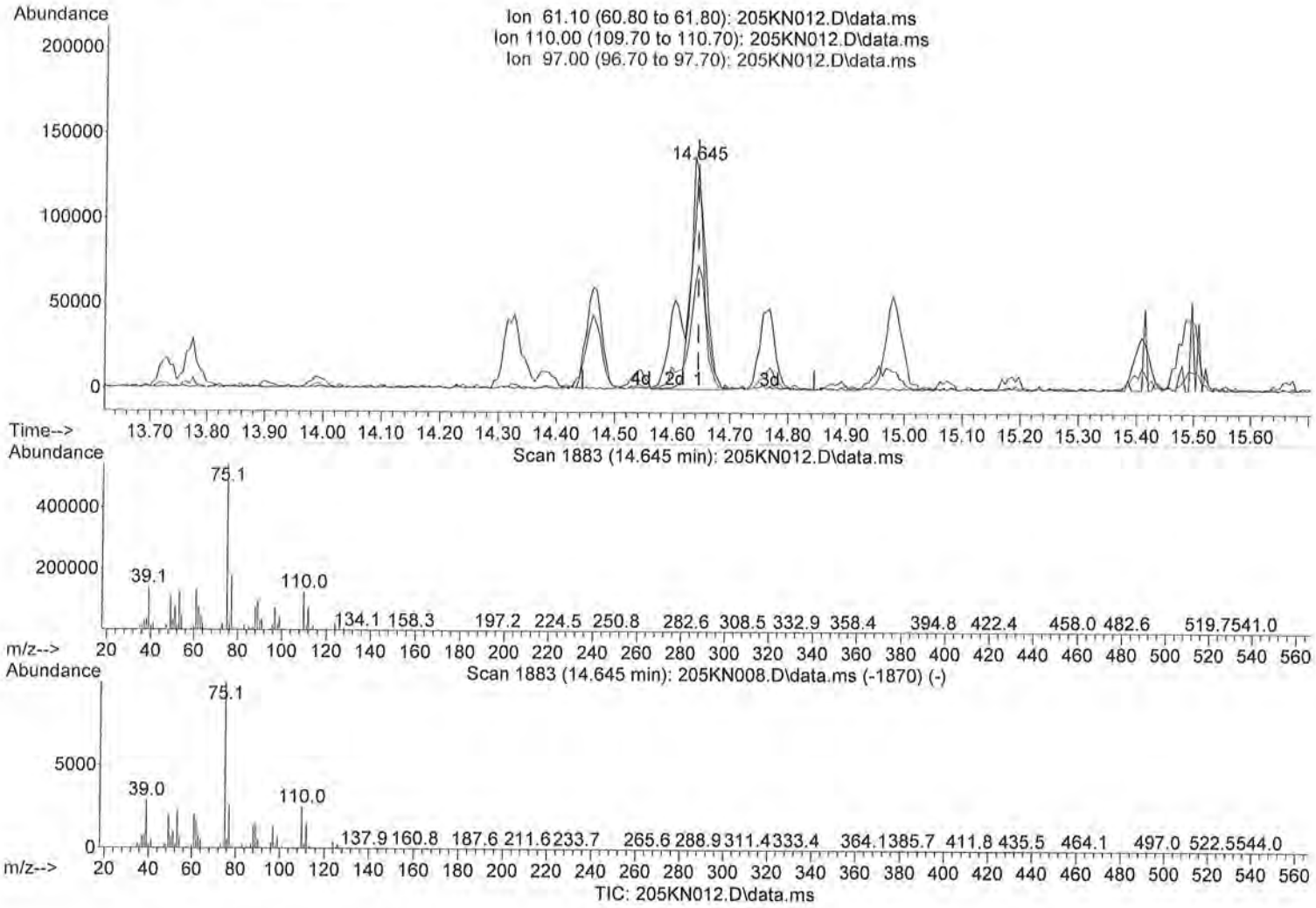
Review by/Date

111920W.M Fri Nov 20 07:37:08 2020 Page: 1

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN012.D
Acq On : 19 Nov 2020 1:24 pm
Operator : KKW
Sample : SCV
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:34:48 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 13:02:55 2020
Response via : Initial Calibration



(77) 1,2,3-Trichloropropane

14.645min (+ 0.000) 47.38 ug/L m

response 288427

Ion	Exp%	Act%
61.10	100.00	100.00
110.00	82.60	82.31
97.00	49.10	50.80
0.00	0.00	0.00

Select One:

[] Original Integration [X] Manual Integration

Select reason for manual integration

[X]

[] Other:

Review by/Date

Review by/Date:

Compound List Report OVGCMS5

Method Path : C:\msdchem\1\methods\
Method File : 111920W.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Thu Nov 19 13:02:55 2020
Response Via : Initial Calibration

Total Cpnds : 96

PK#	Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1 I	PENTAFLUOROBENZENE (IS)	168	9.845	1.000	A	3	A	B
2	Dichlorodifluoromethane	85	3.969	0.403	A	2	A	B
3 P	Chloromethane	50	4.392	0.446	A	1	A	B
4 C	Vinyl Chloride	62	4.574	0.465	A	1	A	B
5	Bromomethane	94	5.221	0.530	QO	2	A	B
6	Chloroethane	64	5.421	0.551	LO	2	A	B
7	Trichlorofluoromethane	101	5.679	0.577	A	2	A	B
8	Diethyl ether	59	6.173	0.627	A	2	A	B
9 C	1,1-Dichloroethene	96	6.519	0.662	A	2	A	B
10	Trichlorotrifluoroethane	151	6.543	0.665	A	2	A	B
11	Acrolein	56	7.007	0.712	A	1	A	B
12	Iodomethane	142	6.766	0.687	LO	2	A	B
13	Carbon Disulfide	76	6.613	0.672	A	2	A	B
14	3-chloropropene	41	7.183	0.730	LO	2	A	B
15	Acetone	43	7.389	0.751	LO	1	A	R
16	Methylene Chloride	84	7.330	0.745	LO	1	A	R
17	Methyl Acetate	43	7.512	0.763	LO	2	A	B
18	t-1,2-Dichloroethene	96	7.542	0.766	A	2	A	B
19	Methyl tert-butyl ether	73	7.624	0.774	A	2	A	B
20	Acetonitrile	41	8.006	0.813	LO	2	A	B
21	Isopropyl ether	45	8.047	0.817	A	2	A	B
22	Chloroprene	88	8.264	0.839	A	2	A	B
23 P	1,1-Dichloroethane	63	8.305	0.844	A	3	A	B
24	Acrylonitrile	53	8.376	0.851	A	2	A	B
25	Vinyl Acetate	43	8.529	0.866	A	1	A	B
26	c-1,2-Dichloroethene	96	8.940	0.908	A	2	A	B
27	2,2-Dichloropropane	77	9.063	0.921	QO	2	A	B
28	Bromochloromethane	128	9.175	0.932	A	1	A	B
29	Cyclohexane	56	9.181	0.933	LO	2	A	B
30 C	Chloroform	83	9.210	0.936	A	2	A	B
31 S	Dibromofluoromethane	113	9.416	0.956	A	2	A	B
32	Dibromofluoromethane	113	9.428	0.958	A	2	A	B
33	2-Butanone	72	9.539	0.969	QO	1	A	R
34	1,1,1-Trichloroethane	97	9.481	0.963	A	2	A	B
35	1,1-Dichloropropene	75	9.592	0.974	A	2	A	B
36	Propionitrile	54	9.892	1.005	A	2	A	B
37	Methacrylonitrile	41	9.904	1.006	A	1	A	R
38	Isobutyl Alcohol	43	9.898	1.005	A	2	A	B
39 I	1,4-DIFLUOROBENZENE (IS)	114	10.438	1.000	A	2	A	B
40	Carbon Tetrachloride	117	9.404	0.901	LO	2	A	B
41	Benzene	78	9.868	0.945	A	1	A	B
42	1,2-Dichloroethane	62	10.080	0.966	LO	2	A	B
43	Trichloroethene	130	10.444	1.001	A	2	A	B
44	Methyl cyclohexane	83	10.438	1.000	LO	2	A	B
45	Dibromomethane	93	10.891	1.043	A	2	A	B
46 C	1,2-Dichloropropane	63	10.973	1.051	QO	2	A	B
47	Bromodichloromethane	83	11.008	1.055	QO	2	A	B
48	Methyl Methacrylate	69	11.073	1.061	LO	2	A	B
49	1,4-Dioxane	88	11.190	1.072	LO	1	A	R
50	2-Chloroethyl vinyl ether	63	11.478	1.100	A	2	A	B
51	C-1,3-Dichloropropene	75	11.602	1.111	QO	2	A	B
52 S	D8-Toluene	98	11.772	1.128	A	2	A	B
53	D8-Toluene	98	11.778	1.128	A	2	A	B
54	4-Methyl-2-pentanone	100	12.125	1.162	LO	2	A	B

55	I	CHLOROBENZENE-D5 (IS)	82	13.217	1.000	A	2	A	B
56	C	Toluene	92	11.819	0.894	A	2	A	B
57		T-1,3-Dichloropropene	75	12.189	0.922	LO	2	A	B
58		Tetrachloroethene	164	12.201	0.923	LO	2	A	B
59		Ethyl methacrylate	69	12.236	0.926	LO	2	A	B
60		1,1,2-Trichloroethane	97	12.354	0.935	LO	2	A	B
61		Dibromochloromethane	129	12.542	0.949	QO	2	A	B
62		1,3-Dichloropropane	76	12.618	0.955	A	2	A	B
63		1,2-Dibromoethane	107	12.806	0.969	A	2	A	B
64		2-Hexanone	43	12.871	0.974	A	2	A	B
65	C	Ethylbenzene	106	13.200	0.999	LO	2	A	B
66	P	Chlorobenzene	112	13.235	1.001	A	1	A	B
67		1,1,1,2-Tetrachloroethane	131	13.270	1.004	A	2	A	B
68		m-xylene & p-xylene	106	13.317	1.008	A	1	A	B
69		o-xylene	106	13.729	1.039	A	1	A	B
70		Styrene	104	13.770	1.042	A	2	A	B
71	P	Bromoform	173	13.870	1.049	QO	1	A	B
72		Isopropylbenzene	105	13.987	1.058	A	2	A	B
73	S	Bromofluorobenzene	95	14.322	1.084	A	2	A	B
74		Bromofluorobenzene	95	14.322	1.084	A	2	A	B
75		n-Propylbenzene	91	14.381	1.088	A	2	A	B
76	P	1,1,2,2-Tetrachloroethane	83	14.463	1.094	A	3	A	B
77		1,2,3-Trichloropropane	61	14.645	1.108	A	2	A	B
78		T-1,4-Dichloro-2-Butene	53	14.346	1.085	LO	2	A	B
79	I	1,4-DICHLOROBENZENE-D4 (IS)	152	15.474	1.000	A	3	A	B
80		Bromobenzene	156	14.457	0.934	A	2	A	B
81		1,2,4-Trimethylbenzene	105	14.951	0.966	A	2	A	B
82		2-Chlorotoluene	91	14.604	0.944	A	2	A	R
83		4-Chlorotoluene	91	14.763	0.954	A	2	A	R
84		tert-Butylbenzene	119	14.892	0.962	A	2	A	B
85		1,3,5-Trimethylbenzene	105	14.539	0.940	A	2	A	B
86		p-Isopropyltoluene	119	15.186	0.981	A	2	A	B
87		s-Butylbenzene	105	15.068	0.974	A	2	A	B
88		1,3-Dichlorobenzene	146	15.409	0.996	A	2	A	R
89		1,4-Dichlorobenzene	146	15.497	1.002	A	2	A	R
90		n-Butylbenzene	91	15.668	1.013	A	2	A	B
91		1,2-Dichlorobenzene	146	16.014	1.035	A	2	A	B
92		DBCP	157	17.078	1.104	QO	1	A	B
93		Hexachlorobutadiene	225	17.965	1.161	QO	2	A	B
94		1,2,4-Trichlorobenzene	180	18.129	1.172	QO	2	A	B
95		Naphthalene	128	18.758	1.212	QO	2	A	B
96		1,2,3-Trichlorobenzene	180	19.146	1.237	QO	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

Compound Name Duplication Report

Quant Method: C:\msdchem\1\methods\111920W.M
Number of Compounds: 96

31 Dibromofluoromethane = 32 Dibromofluoromethane
52 D8-Toluene = 53 D8-Toluene
73 Bromofluorobenzene = 74 Bromofluorobenzene

3 Duplicate Names Detected!!!

111920W.M Fri Nov 20 09:31:15 2020

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN003.D
Acq On : 19 Nov 2020 8:46 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 19 12:13:03 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1250058	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2384669	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1608704	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1323293	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	623489	70.75	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 141.50%#				
52) D8-Toluene	11.778	98	2961300	71.07	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 142.14%#				
73) Bromofluorobenzene	14.322	95	1515651	80.75	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 161.50%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	18296	1.05	ug/L		92
3) Chloromethane	4.398	50	24090	1.04	ug/L	#	64
4) Vinyl Chloride	4.575	62	15975	0.86	ug/L	#	40
5) Bromomethane	5.227	94	13720	3.79	ug/L	#	85
6) Chloroethane	5.444	64	12739	1.59	ug/L	#	87
7) Trichlorofluoromethane	5.679	101	19911	1.01	ug/L	#	38
8) Diethyl ether	6.184	59	12948	0.98	ug/L	#	54
9) 1,1-Dichloroethene	6.525	96	13263	1.04	ug/L	#	87
10) Trichlorotrifluoroethane	6.543	151	6524	0.76	ug/L	#	61
11) Acrolein	7.025	56	25649	6.51	ug/L		99
12) Iodomethane	6.778	142	40512	4.66	ug/L	#	89
13) Carbon Disulfide	6.613	76	203203	8.96	ug/L		95
14) 3-chloropropene	7.189	41	29238	1.45	ug/L	#	78
15) Acetone	7.401	43	20512	4.24	ug/L	#	82
16) Methylene Chloride	7.336	84	23731	0.91	ug/L	#	70
17) Methyl Acetate	7.530	43	18811	1.38	ug/L	#	94
18) t-1,2-Dichloroethene	7.536	96	15808	1.14	ug/L	#	1
19) Methyl tert-butyl ether	7.618	73	30197	0.83	ug/L	#	76
20) Acetonitrile	8.047	41	33337	11.03	ug/L	#	68
21) Isopropyl ether	8.053	45	42345	0.90	ug/L	#	90
22) Chloroprene	8.276	88	12782	1.01	ug/L	#	75
23) 1,1-Dichloroethane	8.311	63	28756	1.00	ug/L	#	95
24) Acrylonitrile	8.388	53	42630	5.96	ug/L		91
25) Vinyl Acetate	8.546	43	138673	4.83	ug/L	#	100
26) c-1,2-Dichloroethene	8.946	96	13851	0.87	ug/L	#	82
27) 2,2-Dichloropropane	9.069	77	24680	1.13	ug/L	#	71
28) Bromochloromethane	9.193	128	4358	0.77	ug/L	#	5
29) Cyclohexane	9.181	56	36143	1.30	ug/L		91
30) Chloroform	9.234	83	25212	0.94	ug/L	#	77
32) Dibromofluoromethane	9.422	113	623489	70.75	ug/L	#	84
33) 2-Butanone	9.563	72	11859	5.48	ug/L	#	52
34) 1,1,1-Trichloroethane	9.481	97	22143	1.02	ug/L	#	85
35) 1,1-Dichloropropene	9.604	75	24888	1.18	ug/L	#	94
36) Propionitrile	9.898	54	18232	7.06	ug/L	#	47
37) Methacrylonitrile	9.904	41	99844	8.86	ug/L		98
38) Isobutyl Alcohol	9.898	43	19639	12.58	ug/L	#	67
40) Carbon Tetrachloride	9.398	117	16992	1.09	ug/L	#	63
41) Benzene	9.880	78	65290	1.05	ug/L	#	80
42) 1,2-Dichloroethane	10.098	62	25267	1.28	ug/L		93
43) Trichloroethene	10.444	130	11606	0.88	ug/L	#	1
44) Methyl cyclohexane	10.438	83	61837	1.83	ug/L	#	78
45) Dibromomethane	10.897	93	8357	0.94	ug/L		90
46) 1,2-Dichloropropane	10.979	63	19883	1.09	ug/L	#	86
47) Bromodichloromethane	11.014	83	16171	0.95	ug/L	#	84
48) Methyl Methacrylate	11.096	69	9981	0.78	ug/L	#	86
49) 1,4-Dioxane	11.191	88	2274	7.99	ug/L	#	1
50) 2-Chloroethyl vinyl ether	11.484	63	38992	4.48	ug/L	#	91
51) C-1,3-Dichloropropene	11.602	75	18485	0.77	ug/L	#	74

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN003.D
Acq On : 19 Nov 2020 8:46 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 19 12:13:03 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

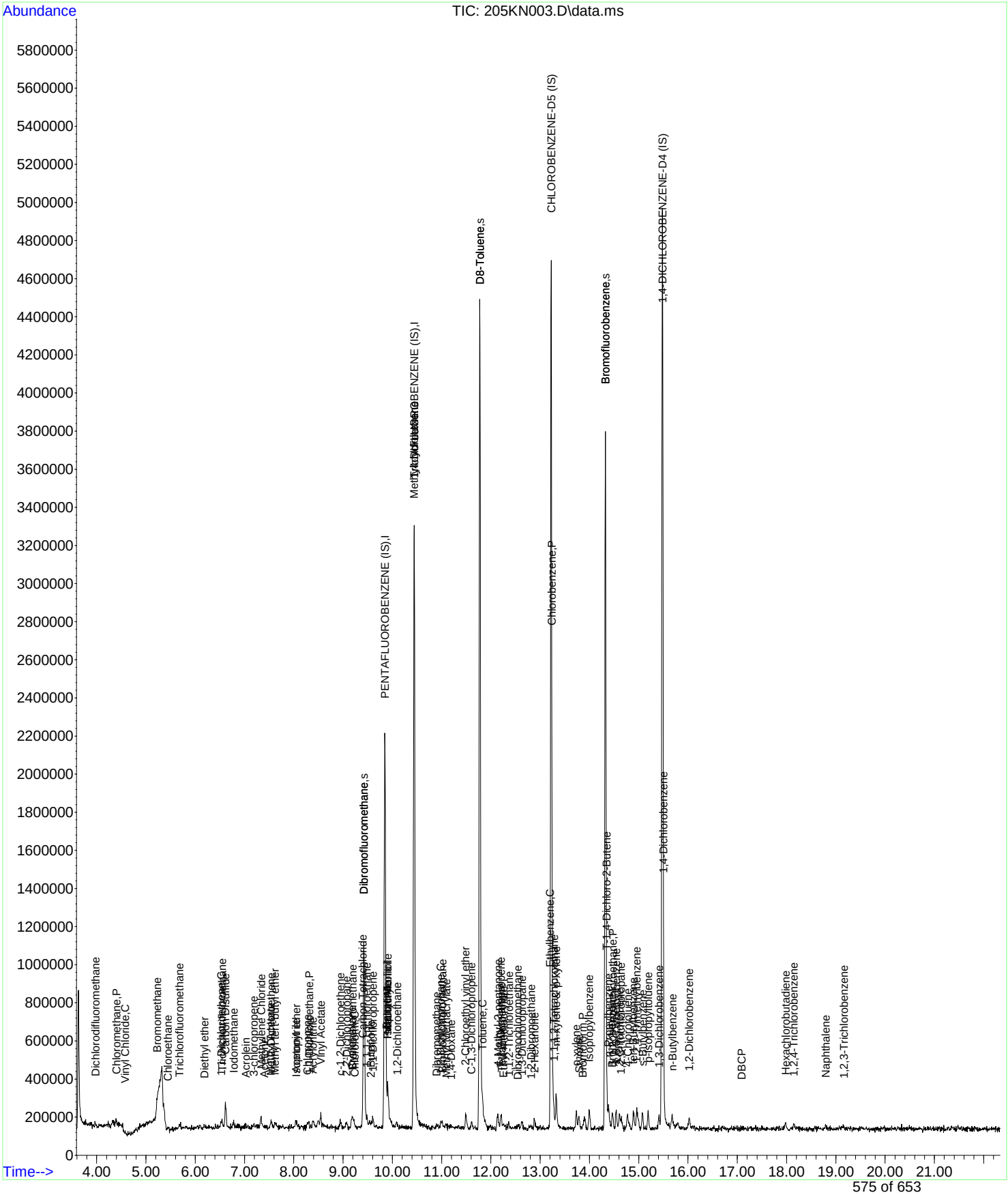
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2961300	71.07	ug/L		97
54) 4-Methyl-2-pentanone	12.142	100	12783	5.15	ug/L	#	58
56) Toluene	11.831	92	41866	0.91	ug/L	#	79
57) T-1,3-Dichloropropene	12.201	75	18604	0.81	ug/L	#	81
58) Tetrachloroethene	12.219	164	11415	1.09	ug/L		89
59) Ethyl methacrylate	12.248	69	25350	1.17	ug/L	#	83
60) 1,1,2-Trichloroethane	12.366	97	13702	0.99	ug/L	#	72
61) Dibromochloromethane	12.542	129	8416	0.76	ug/L	#	87
62) 1,3-Dichloropropane	12.630	76	25304	0.97	ug/L	#	82
63) 1,2-Dibromoethane	12.818	107	12150	0.91	ug/L	#	81
64) 2-Hexanone	12.883	43	45037	3.33	ug/L	#	97
65) Ethylbenzene	13.200	106	26930	1.14	ug/L	#	79
66) Chlorobenzene	13.235	112	39482	0.98	ug/L	#	42
67) 1,1,1,2-Tetrachloroethane	13.282	131	10455	0.84	ug/L	#	85
68) m-xylene & p-xylene	13.323	106	49610	1.75	ug/L		95
69) o-xylene	13.729	106	26619	0.91	ug/L		95
70) Styrene	13.793	104	38113	0.74	ug/L	#	77
71) Bromoform	13.864	173	7220	1.08	ug/L		96
72) Isopropylbenzene	13.993	105	68183	0.90	ug/L	#	96
74) Bromofluorobenzene	14.322	95	1515651	80.75	ug/L	#	82
75) n-Propylbenzene	14.387	91	89415	0.94	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.469	83	18496	0.88	ug/L	#	97
77) 1,2,3-Trichloropropane	14.639	61	7568	1.03	ug/L	#	59
78) T-1,4-Dichloro-2-Butene	14.346	53	3904	0.50	ug/L	#	25
80) Bromobenzene	14.457	156	12991	0.77	ug/L	#	62
81) 1,2,4-Trimethylbenzene	14.957	105	65688	1.02	ug/L		88
82) 2-Chlorotoluene	14.610	91	56094	1.00	ug/L		99
83) 4-Chlorotoluene	14.775	91	55670	0.96	ug/L	#	89
84) tert-Butylbenzene	14.886	119	50745	0.92	ug/L		95
85) 1,3,5-Trimethylbenzene	14.540	105	65899	1.02	ug/L	#	91
86) p-Isopropyltoluene	15.192	119	58999	0.89	ug/L	#	91
87) s-Butylbenzene	15.080	105	66592	0.81	ug/L	#	90
88) 1,3-Dichlorobenzene	15.415	146	28042	0.90	ug/L		91
89) 1,4-Dichlorobenzene	15.503	146	35527	1.06	ug/L	#	1
90) n-Butylbenzene	15.685	91	64987	0.95	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	29991	1.01	ug/L		95
92) DBCP	17.090	157	3870	1.12	ug/L	#	38
93) Hexachlorobutadiene	17.983	225	4733	0.53	ug/L	#	14
94) 1,2,4-Trichlorobenzene	18.141	180	11751	0.74	ug/L	#	59
95) Naphthalene	18.794	128	22751	0.55	ug/L	#	79
96) 1,2,3-Trichlorobenzene	19.164	180	6414	0.50	ug/L	#	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN003.D
Acq On : 19 Nov 2020 8:46 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Nov 19 12:13:03 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1204238	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2405138	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.217	82	1568806	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1312583	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	684693	80.65	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 161.30%#				
52) D8-Toluene	11.772	98	3225098	76.74	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 153.48%#				
73) Bromofluorobenzene	14.322	95	1548116	84.58	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 169.16%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.969	85	25586	1.52	ug/L	#	95
3) Chloromethane	4.392	50	36985	1.66	ug/L		96
4) Vinyl Chloride	4.574	62	23897	1.33	ug/L	#	72
5) Bromomethane	5.221	94	18964	5.44	ug/L	#	71
6) Chloroethane	5.432	64	16169	2.09	ug/L		91
7) Trichlorofluoromethane	5.685	101	29809	1.57	ug/L	#	77
8) Diethyl ether	6.173	59	17712	1.39	ug/L		89
9) 1,1-Dichloroethene	6.525	96	17932	1.46	ug/L		89
10) Trichlorotrifluoroethane	6.537	151	12736m	1.54	ug/L		
11) Acrolein	7.019	56	34067	8.97	ug/L		93
12) Iodomethane	6.772	142	74024	8.84	ug/L	#	86
13) Carbon Disulfide	6.613	76	308072	14.10	ug/L		96
14) 3-chloropropene	7.183	41	32217	1.66	ug/L	#	76
15) Acetone	7.401	43	18401	3.95	ug/L		92
16) Methylene Chloride	7.336	84	32753	1.31	ug/L	#	75
17) Methyl Acetate	7.530	43	17987	1.37	ug/L	#	63
18) t-1,2-Dichloroethene	7.553	96	20681	1.55	ug/L	#	1
19) Methyl tert-butyl ether	7.624	73	51397	1.46	ug/L	#	89
20) Acetonitrile	8.053	41	41973	14.42	ug/L	#	73
21) Isopropyl ether	8.047	45	72128	1.58	ug/L		98
22) Chloroprene	8.276	88	19106	1.56	ug/L	#	94
23) 1,1-Dichloroethane	8.305	63	35911	1.30	ug/L	#	93
24) Acrylonitrile	8.388	53	64927	9.43	ug/L	#	89
25) Vinyl Acetate	8.546	43	209163	7.56	ug/L	#	100
26) c-1,2-Dichloroethene	8.958	96	20443	1.33	ug/L		89
27) 2,2-Dichloropropane	9.069	77	27636	1.31	ug/L	#	82
28) Bromochloromethane	9.181	128	8462	1.55	ug/L	#	77
29) Cyclohexane	9.181	56	39303	1.47	ug/L		89
30) Chloroform	9.222	83	39382	1.52	ug/L	#	85
32) Dibromofluoromethane	9.422	113	684725	80.65	ug/L	#	87
33) 2-Butanone	9.545	72	6992	3.35	ug/L	#	1
34) 1,1,1-Trichloroethane	9.475	97	31237	1.49	ug/L		96
35) 1,1-Dichloropropene	9.598	75	33405	1.64	ug/L	#	83
36) Propionitrile	9.898	54	34088	13.71	ug/L	#	62
37) Methacrylonitrile	9.904	41	161695	14.89	ug/L		99
38) Isobutyl Alcohol	9.904	43	39900	26.53	ug/L	#	100
40) Carbon Tetrachloride	9.410	117	25567m	1.62	ug/L		
41) Benzene	9.874	78	86139	1.38	ug/L		94
42) 1,2-Dichloroethane	10.080	62	31232	1.56	ug/L	#	78
43) Trichloroethene	10.444	130	19889	1.49	ug/L	#	1
44) Methyl cyclohexane	10.444	83	73539	2.16	ug/L	#	76
45) Dibromomethane	10.897	93	12606	1.40	ug/L	#	86
46) 1,2-Dichloropropane	10.979	63	26377	1.43	ug/L	#	92
47) Bromodichloromethane	11.008	83	21020	1.23	ug/L	#	69
48) Methyl Methacrylate	11.090	69	11122m	0.86	ug/L		
49) 1,4-Dioxane	11.184	88	3651	12.73	ug/L	#	57
50) 2-Chloroethyl vinyl ether	11.490	63	63403	7.23	ug/L	#	90
51) C-1,3-Dichloropropene	11.602	75	32438	1.34	ug/L	#	82

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

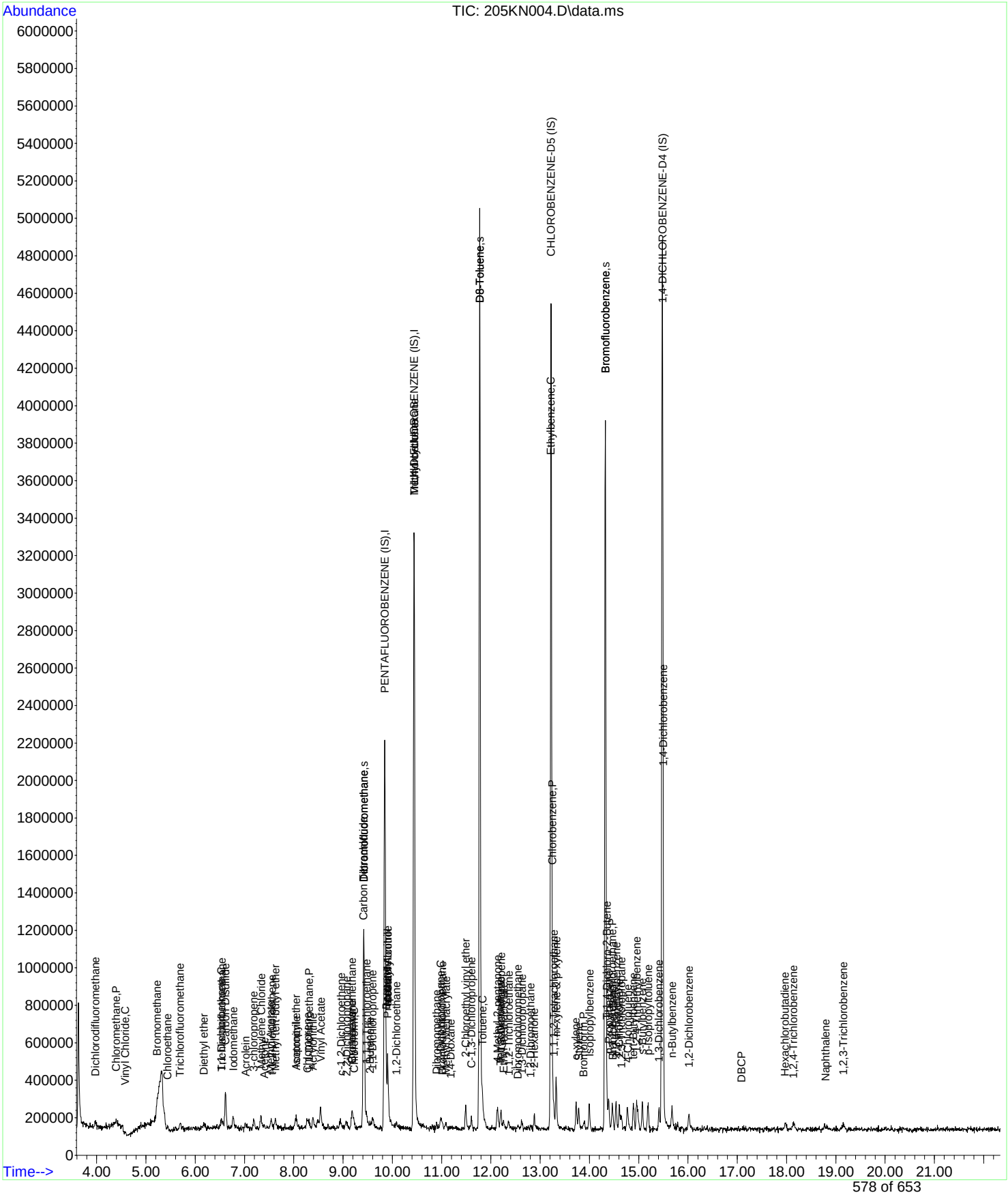
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.772	98	3225098	76.74	ug/L		98
54) 4-Methyl-2-pentanone	12.130	100	16767	6.70	ug/L		87
56) Toluene	11.831	92	50990	1.14	ug/L	#	83
57) T-1,3-Dichloropropene	12.207	75	24871	1.11	ug/L	#	82
58) Tetrachloroethene	12.195	164	13605	1.33	ug/L		97
59) Ethyl methacrylate	12.254	69	29880	1.41	ug/L		95
60) 1,1,2-Trichloroethane	12.360	97	16136m	1.20	ug/L		
61) Dibromochloromethane	12.542	129	12102	1.12	ug/L	#	88
62) 1,3-Dichloropropane	12.630	76	31210	1.23	ug/L	#	69
63) 1,2-Dibromoethane	12.800	107	17274	1.32	ug/L	#	85
64) 2-Hexanone	12.877	43	65549	4.97	ug/L	#	95
65) Ethylbenzene	13.212	106	31671	1.37	ug/L	#	83
66) Chlorobenzene	13.241	112	57651	1.47	ug/L	#	68
67) 1,1,1,2-Tetrachloroethane	13.276	131	16700	1.37	ug/L	#	82
68) m-xylene & p-xylene	13.329	106	79130	2.86	ug/L		91
69) o-xylene	13.723	106	34486	1.21	ug/L		73
70) Styrene	13.781	104	59534	1.18	ug/L	#	81
71) Bromoform	13.876	173	8315	1.27	ug/L	#	40
72) Isopropylbenzene	13.999	105	101194	1.37	ug/L		95
74) Bromofluorobenzene	14.322	95	1548116	84.58	ug/L		84
75) n-Propylbenzene	14.393	91	140081	1.51	ug/L	#	92
76) 1,1,2,2-Tetrachloroethane	14.463	83	26618	1.30	ug/L	#	88
77) 1,2,3-Trichloropropane	14.645	61	9189	1.28	ug/L		95
78) T-1,4-Dichloro-2-Butene	14.351	53	7999	1.05	ug/L	#	1
80) Bromobenzene	14.469	156	24323	1.46	ug/L		98
81) 1,2,4-Trimethylbenzene	14.957	105	93218	1.45	ug/L		98
82) 2-Chlorotoluene	14.604	91	84274	1.51	ug/L		92
83) 4-Chlorotoluene	14.774	91	90552	1.57	ug/L	#	94
84) tert-Butylbenzene	14.886	119	74805	1.37	ug/L		94
85) 1,3,5-Trimethylbenzene	14.545	105	88928	1.38	ug/L		92
86) p-Isopropyltoluene	15.192	119	88659	1.35	ug/L		94
87) s-Butylbenzene	15.074	105	111856	1.37	ug/L	#	92
88) 1,3-Dichlorobenzene	15.409	146	43620	1.41	ug/L	#	93
89) 1,4-Dichlorobenzene	15.497	146	49462	1.48	ug/L	#	1
90) n-Butylbenzene	15.673	91	86450	1.28	ug/L		93
91) 1,2-Dichlorobenzene	16.014	146	36400	1.23	ug/L	#	84
92) DBCP	17.084	157	1967	0.58	ug/L		97
93) Hexachlorobutadiene	17.965	225	9033	1.02	ug/L	#	80
94) 1,2,4-Trichlorobenzene	18.135	180	11315	0.72	ug/L	#	35
95) Naphthalene	18.787	128	32865	0.80	ug/L	#	83
96) 1,2,3-Trichlorobenzene	19.146	180	13123	1.04	ug/L	#	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN004.D
Acq On : 19 Nov 2020 9:16 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 19 12:13:09 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1203996	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2450219	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.217	82	1607155	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1325758	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	748431	88.17	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 176.34%#				
52) D8-Toluene	11.772	98	3472304	81.11	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 162.22%#				
73) Bromofluorobenzene	14.322	95	1649261	87.95	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 175.90%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	74605	4.45	ug/L	#	84
3) Chloromethane	4.392	50	90702	4.06	ug/L		95
4) Vinyl Chloride	4.580	62	71482	3.99	ug/L		96
5) Bromomethane	5.221	94	29725	8.53	ug/L	#	76
6) Chloroethane	5.421	64	32917	4.25	ug/L		99
7) Trichlorofluoromethane	5.685	101	82668	4.36	ug/L	#	96
8) Diethyl ether	6.173	59	46647	3.66	ug/L		94
9) 1,1-Dichloroethene	6.525	96	47209	3.83	ug/L		88
10) Trichlorotrifluoroethane	6.543	151	35223	4.26	ug/L		98
11) Acrolein	7.013	56	106122	27.96	ug/L		88
12) Iodomethane	6.772	142	223049	26.65	ug/L	#	86
13) Carbon Disulfide	6.613	76	853754	39.09	ug/L		98
14) 3-chloropropene	7.189	41	82112	4.23	ug/L	#	84
15) Acetone	7.395	43	68203	14.65	ug/L		93
16) Methylene Chloride	7.324	84	70431	2.81	ug/L		96
17) Methyl Acetate	7.524	43	41189	3.14	ug/L	#	75
18) t-1,2-Dichloroethene	7.542	96	53904	4.03	ug/L	#	1
19) Methyl tert-butyl ether	7.630	73	142206	4.05	ug/L		98
20) Acetonitrile	8.023	41	100254	34.44	ug/L		94
21) Isopropyl ether	8.053	45	190415	4.18	ug/L		97
22) Chloroprene	8.264	88	57323	4.68	ug/L		99
23) 1,1-Dichloroethane	8.300	63	129239	4.67	ug/L	#	91
24) Acrylonitrile	8.382	53	189148	27.46	ug/L		89
25) Vinyl Acetate	8.535	43	635408	22.98	ug/L	#	100
26) c-1,2-Dichloroethene	8.946	96	63131	4.10	ug/L		88
27) 2,2-Dichloropropane	9.069	77	87442	4.14	ug/L	#	95
28) Bromochloromethane	9.187	128	28669	5.26	ug/L		99
29) Cyclohexane	9.181	56	133857	5.00	ug/L		89
30) Chloroform	9.216	83	122395	4.72	ug/L		92
32) Dibromofluoromethane	9.422	113	748431	88.17	ug/L	#	89
33) 2-Butanone	9.539	72	36738	17.61	ug/L		70
34) 1,1,1-Trichloroethane	9.475	97	89627	4.28	ug/L		95
35) 1,1-Dichloropropene	9.592	75	96148	4.73	ug/L		93
36) Propionitrile	9.898	54	87631	35.25	ug/L	#	73
37) Methacrylonitrile	9.904	41	433810	39.95	ug/L		98
38) Isobutyl Alcohol	9.904	43	101382	67.43	ug/L	#	98
40) Carbon Tetrachloride	9.404	117	68664m	4.27	ug/L		
41) Benzene	9.874	78	248057	3.89	ug/L		97
42) 1,2-Dichloroethane	10.080	62	87269	4.29	ug/L	#	95
43) Trichloroethene	10.438	130	51268	3.78	ug/L	#	1
44) Methyl cyclohexane	10.444	83	159388	4.59	ug/L	#	83
45) Dibromomethane	10.897	93	40717	4.45	ug/L	#	84
46) 1,2-Dichloropropane	10.985	63	68338	3.64	ug/L		99
47) Bromodichloromethane	11.014	83	76839	4.42	ug/L		95
48) Methyl Methacrylate	11.079	69	42500	3.24	ug/L		96
49) 1,4-Dioxane	11.202	88	15649	53.54	ug/L		92
50) 2-Chloroethyl vinyl ether	11.484	63	180854	20.24	ug/L	#	97
51) C-1,3-Dichloropropene	11.608	75	97087	3.92	ug/L		98

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

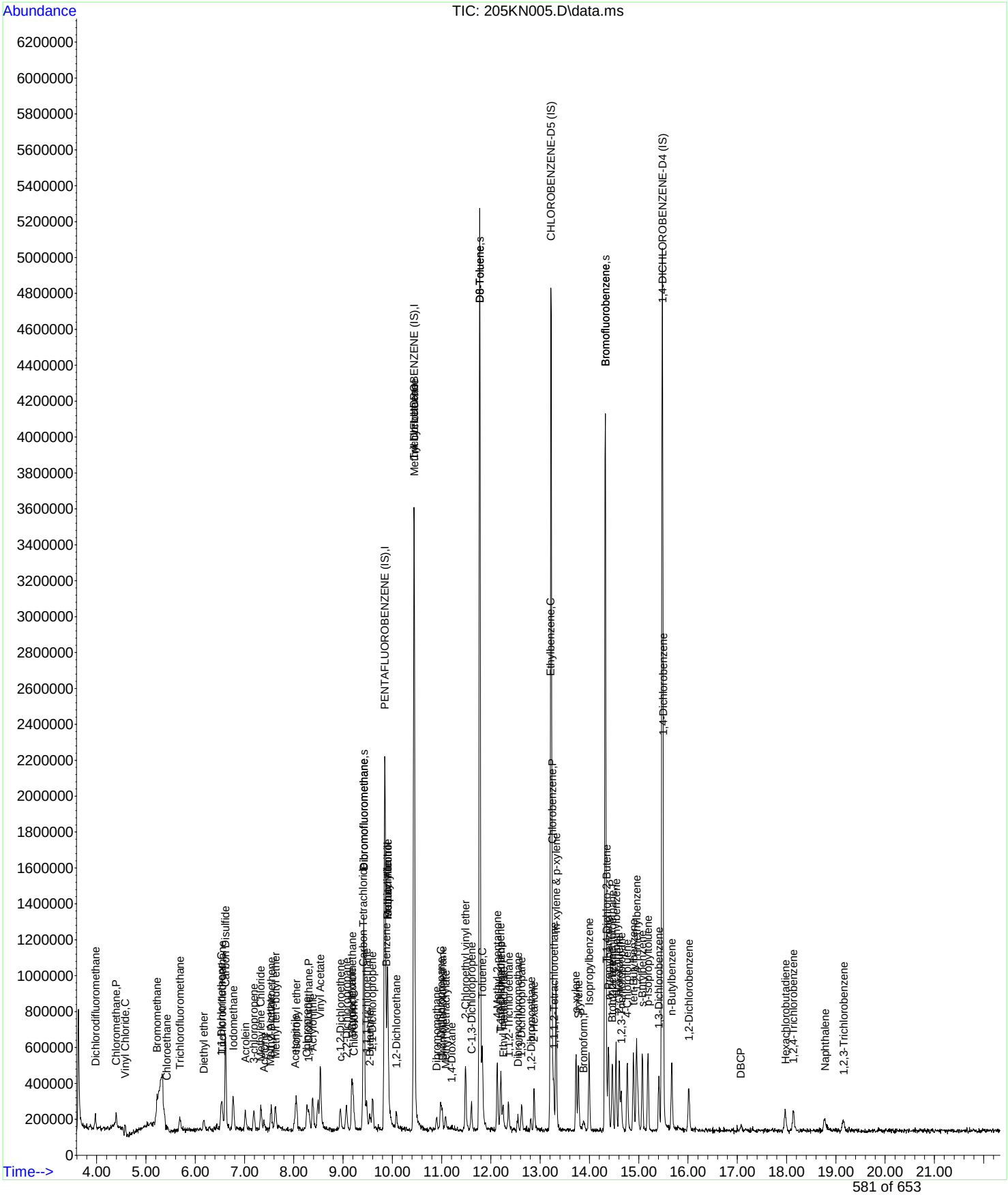
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.772	98	3472304	81.11	ug/L		98
54) 4-Methyl-2-pentanone	12.125	100	38753	15.19	ug/L		86
56) Toluene	11.825	92	165393	3.60	ug/L		98
57) T-1,3-Dichloropropene	12.195	75	86647	3.76	ug/L		92
58) Tetrachloroethene	12.207	164	39337	3.74	ug/L	#	86
59) Ethyl methacrylate	12.248	69	74987	3.46	ug/L	#	89
60) 1,1,2-Trichloroethane	12.360	97	49583	3.58	ug/L		91
61) Dibromochloromethane	12.548	129	35140	3.19	ug/L	#	91
62) 1,3-Dichloropropane	12.618	76	94212	3.62	ug/L	#	84
63) 1,2-Dibromoethane	12.812	107	49651	3.71	ug/L		94
64) 2-Hexanone	12.871	43	182740	13.52	ug/L	#	93
65) Ethylbenzene	13.206	106	86003	3.64	ug/L	#	80
66) Chlorobenzene	13.241	112	174992	4.36	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	47239	3.79	ug/L		98
68) m-xylene & p-xylene	13.323	106	241684	8.52	ug/L		97
69) o-xylene	13.723	106	128266	4.39	ug/L		94
70) Styrene	13.776	104	192498	3.74	ug/L		96
71) Bromoform	13.875	173	17891	2.67	ug/L	#	58
72) Isopropylbenzene	13.993	105	314697	4.15	ug/L		97
74) Bromofluorobenzene	14.322	95	1649261	87.95	ug/L	#	83
75) n-Propylbenzene	14.387	91	430878	4.54	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.463	83	75011	3.57	ug/L	#	97
77) 1,2,3-Trichloropropane	14.645	61	25913m	3.52	ug/L		
78) T-1,4-Dichloro-2-Butene	14.346	53	30582	3.90	ug/L	#	25
80) Bromobenzene	14.457	156	68481	4.07	ug/L		95
81) 1,2,4-Trimethylbenzene	14.957	105	312679	4.83	ug/L		96
82) 2-Chlorotoluene	14.604	91	254584	4.52	ug/L		98
83) 4-Chlorotoluene	14.763	91	269745	4.64	ug/L		96
84) tert-Butylbenzene	14.892	119	225427	4.10	ug/L		95
85) 1,3,5-Trimethylbenzene	14.539	105	298492	4.59	ug/L		97
86) p-Isopropyltoluene	15.186	119	288991	4.35	ug/L		97
87) s-Butylbenzene	15.074	105	358245	4.33	ug/L		99
88) 1,3-Dichlorobenzene	15.409	146	121305	3.89	ug/L	#	88
89) 1,4-Dichlorobenzene	15.497	146	130629	3.88	ug/L	#	1
90) n-Butylbenzene	15.668	91	270003	3.95	ug/L		94
91) 1,2-Dichlorobenzene	16.014	146	123325	4.13	ug/L		98
92) DBCP	17.072	157	4885	1.42	ug/L		94
93) Hexachlorobutadiene	17.977	225	28258	3.17	ug/L	#	73
94) 1,2,4-Trichlorobenzene	18.135	180	48590	3.06	ug/L	#	88
95) Naphthalene	18.782	128	90648	2.20	ug/L	#	76
96) 1,2,3-Trichlorobenzene	19.158	180	27107	2.12	ug/L	#	63

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN005.D
Acq On : 19 Nov 2020 9:47 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 19 12:13:14 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN006.D
Acq On : 19 Nov 2020 10:18 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 19 12:13:19 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1172592	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2346408	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1580434	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1299188	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	633611	76.64	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 153.28%#				
52) D8-Toluene	11.772	98	2967040	72.37	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 144.74%#				
73) Bromofluorobenzene	14.322	95	1486454	80.61	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 161.22%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.969	85	136642	8.36	ug/L	#	98
3) Chloromethane	4.392	50	150941	6.94	ug/L		98
4) Vinyl Chloride	4.574	62	121568	6.97	ug/L		97
5) Bromomethane	5.221	94	42104	12.41	ug/L	#	85
6) Chloroethane	5.438	64	61911	8.21	ug/L	#	92
7) Trichlorofluoromethane	5.685	101	165911	8.98	ug/L		92
8) Diethyl ether	6.173	59	84419	6.81	ug/L		94
9) 1,1-Dichloroethene	6.525	96	87918	7.33	ug/L		97
10) Trichlorotrifluoroethane	6.537	151	72300	8.97	ug/L		92
11) Acrolein	7.019	56	230022	62.23	ug/L		98
12) Iodomethane	6.766	142	506927	62.20	ug/L	#	91
13) Carbon Disulfide	6.613	76	1673298	78.66	ug/L		99
14) 3-chloropropene	7.183	41	167038	8.84	ug/L		98
15) Acetone	7.389	43	148978	32.85	ug/L		90
16) Methylene Chloride	7.324	84	116078	4.75	ug/L		95
17) Methyl Acetate	7.518	43	87612	6.86	ug/L	#	91
18) t-1,2-Dichloroethene	7.536	96	101037	7.76	ug/L	#	1
19) Methyl tert-butyl ether	7.630	73	287472	8.40	ug/L		95
20) Acetonitrile	8.012	41	217380	76.68	ug/L		97
21) Isopropyl ether	8.041	45	356646	8.05	ug/L		96
22) Chloroprene	8.270	88	101968	8.55	ug/L		94
23) 1,1-Dichloroethane	8.305	63	221157	8.21	ug/L		96
24) Acrylonitrile	8.382	53	395143	58.91	ug/L		97
25) Vinyl Acetate	8.535	43	1226867	45.56	ug/L	#	100
26) c-1,2-Dichloroethene	8.940	96	111210	7.41	ug/L		89
27) 2,2-Dichloropropane	9.058	77	149262	7.26	ug/L	#	92
28) Bromochloromethane	9.169	128	44116	8.31	ug/L		92
29) Cyclohexane	9.187	56	211253	8.10	ug/L		93
30) Chloroform	9.210	83	224502	8.89	ug/L		96
32) Dibromofluoromethane	9.422	113	633611	76.64	ug/L	#	91
33) 2-Butanone	9.551	72	52854	26.02	ug/L	#	56
34) 1,1,1-Trichloroethane	9.469	97	163488	8.02	ug/L		95
35) 1,1-Dichloropropene	9.592	75	169450	8.57	ug/L		95
36) Propionitrile	9.892	54	162895	67.28	ug/L	#	73
37) Methacrylonitrile	9.898	41	807949	76.39	ug/L		93
38) Isobutyl Alcohol	9.892	43	201685	137.74	ug/L	#	97
40) Carbon Tetrachloride	9.398	117	126351	8.21	ug/L	#	93
41) Benzene	9.868	78	478492	7.84	ug/L		98
42) 1,2-Dichloroethane	10.086	62	153491	7.87	ug/L		96
43) Trichloroethene	10.438	130	102612	7.91	ug/L	#	58
44) Methyl cyclohexane	10.444	83	233746	7.02	ug/L		94
45) Dibromomethane	10.897	93	68274	7.78	ug/L	#	90
46) 1,2-Dichloropropane	10.973	63	142560	7.94	ug/L		99
47) Bromodichloromethane	11.008	83	146577	8.80	ug/L		96
48) Methyl Methacrylate	11.073	69	84258	6.70	ug/L		99
49) 1,4-Dioxane	11.196	88	27005	96.48	ug/L		98
50) 2-Chloroethyl vinyl ether	11.484	63	363921	42.52	ug/L	#	99
51) C-1,3-Dichloropropene	11.602	75	181119	7.64	ug/L		91

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN006.D
Acq On : 19 Nov 2020 10:18 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

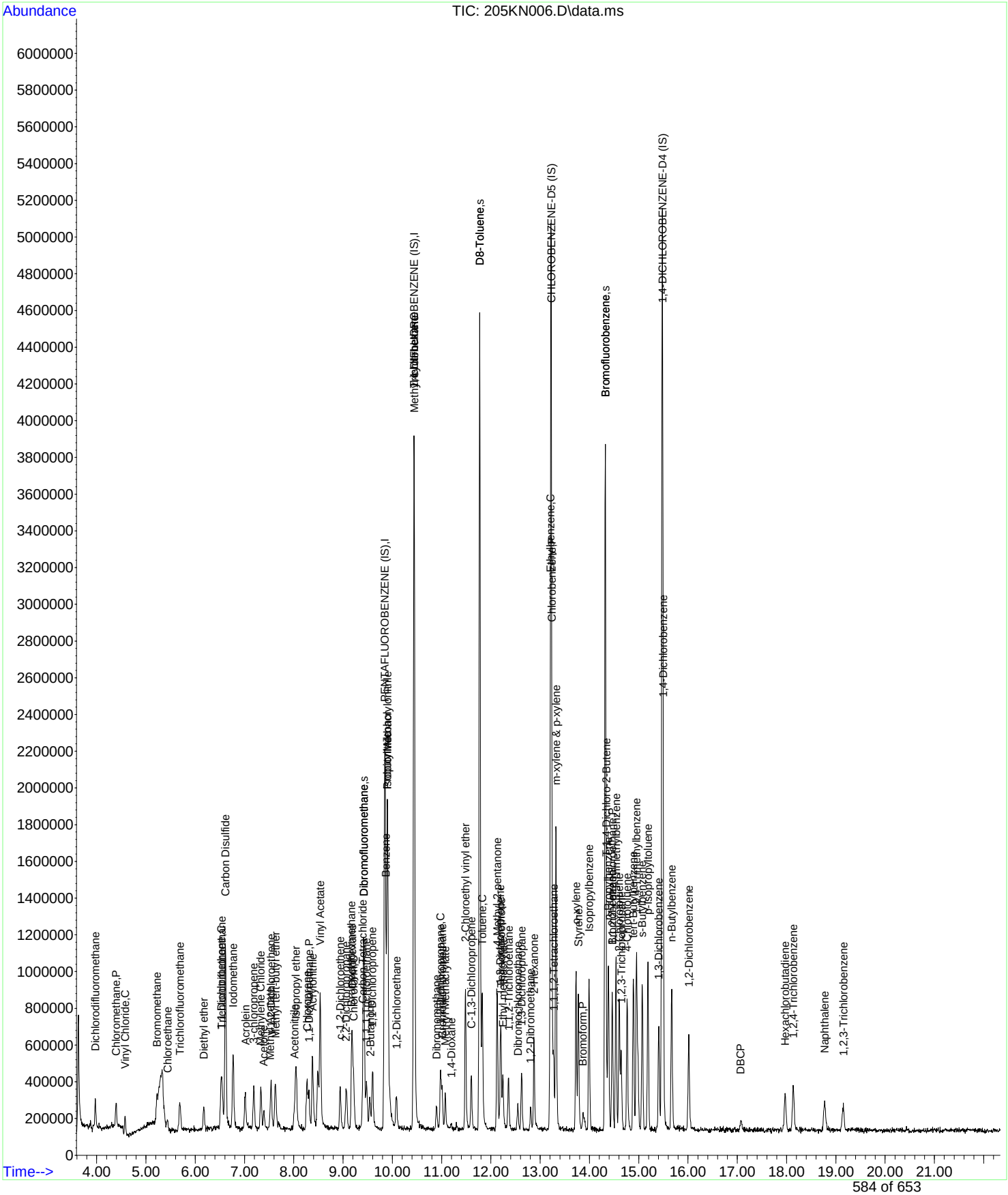
Quant Time: Nov 19 12:13:19 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.772	98	2967040	72.37	ug/L		98
54) 4-Methyl-2-pentanone	12.125	100	73800	30.21	ug/L		96
56) Toluene	11.825	92	299260	6.63	ug/L		94
57) T-1,3-Dichloropropene	12.189	75	162803	7.18	ug/L		97
58) Tetrachloroethene	12.207	164	82473	7.98	ug/L		91
59) Ethyl methacrylate	12.242	69	156564	7.34	ug/L		97
60) 1,1,2-Trichloroethane	12.360	97	99991	7.35	ug/L		95
61) Dibromochloromethane	12.548	129	73988	6.82	ug/L		96
62) 1,3-Dichloropropane	12.624	76	205100	8.00	ug/L		99
63) 1,2-Dibromoethane	12.800	107	91595	6.95	ug/L	#	97
64) 2-Hexanone	12.877	43	371113	27.92	ug/L		99
65) Ethylbenzene	13.206	106	183869	7.91	ug/L		93
66) Chlorobenzene	13.235	112	325558	8.26	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	84396	6.89	ug/L	#	91
68) m-xylene & p-xylene	13.323	106	459298	16.47	ug/L		100
69) o-xylene	13.729	106	226034	7.87	ug/L		98
70) Styrene	13.776	104	372814	7.36	ug/L		97
71) Bromoform	13.864	173	42258	6.41	ug/L		95
72) Isopropylbenzene	13.993	105	590842	7.93	ug/L		97
74) Bromofluorobenzene	14.322	95	1486454	80.61	ug/L	#	83
75) n-Propylbenzene	14.381	91	808182	8.66	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.463	83	147516	7.14	ug/L	#	98
77) 1,2,3-Trichloropropane	14.645	61	59327m	8.20	ug/L		
78) T-1,4-Dichloro-2-Butene	14.340	53	59486	7.72	ug/L	#	1
80) Bromobenzene	14.463	156	121209	7.35	ug/L		91
81) 1,2,4-Trimethylbenzene	14.951	105	594469	9.37	ug/L		98
82) 2-Chlorotoluene	14.604	91	469789	8.52	ug/L		97
83) 4-Chlorotoluene	14.763	91	498816	8.75	ug/L		98
84) tert-Butylbenzene	14.886	119	430271	7.98	ug/L		93
85) 1,3,5-Trimethylbenzene	14.539	105	564368	8.87	ug/L		98
86) p-Isopropyltoluene	15.186	119	548845	8.44	ug/L		99
87) s-Butylbenzene	15.068	105	648219	7.99	ug/L		99
88) 1,3-Dichlorobenzene	15.403	146	240604	7.88	ug/L	#	89
89) 1,4-Dichlorobenzene	15.497	146	253916	7.69	ug/L	#	36
90) n-Butylbenzene	15.668	91	564995	8.44	ug/L		99
91) 1,2-Dichlorobenzene	16.014	146	229022	7.83	ug/L		99
92) DBCP	17.066	157	17355	5.14	ug/L		92
93) Hexachlorobutadiene	17.971	225	48211	5.52	ug/L	#	93
94) 1,2,4-Trichlorobenzene	18.135	180	95682	6.14	ug/L		98
95) Naphthalene	18.770	128	206620	5.11	ug/L	#	91
96) 1,2,3-Trichlorobenzene	19.152	180	60810	4.85	ug/L	#	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN006.D
Acq On : 19 Nov 2020 10:18 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 19 12:13:19 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN007.D
Acq On : 19 Nov 2020 10:49 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 19 12:13:23 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1203065	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2330356	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.217	82	1579586	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1295652	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	785195	92.57	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 185.14%#				
52) D8-Toluene	11.772	98	3631138	89.18	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 178.36%#				
73) Bromofluorobenzene	14.322	95	1784745	96.84	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 193.68%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	302749	18.06	ug/L	#	96
3) Chloromethane	4.392	50	320743	14.37	ug/L		100
4) Vinyl Chloride	4.574	62	293406	16.39	ug/L		96
5) Bromomethane	5.221	94	73935	21.23	ug/L	#	91
6) Chloroethane	5.438	64	142983	18.49	ug/L	#	91
7) Trichlorofluoromethane	5.685	101	364707	19.24	ug/L		95
8) Diethyl ether	6.179	59	186506	14.66	ug/L		96
9) 1,1-Dichloroethene	6.525	96	198942	16.17	ug/L		97
10) Trichlorotrifluoroethane	6.549	151	125657	15.20	ug/L		88
11) Acrolein	7.007	56	200300	52.81	ug/L		96
12) Iodomethane	6.766	142	1096522	131.13	ug/L	#	92
13) Carbon Disulfide	6.613	76	3494366	160.10	ug/L		99
14) 3-chloropropene	7.183	41	372388	19.21	ug/L		94
15) Acetone	7.389	43	259911	55.85	ug/L		99
16) Methylene Chloride	7.336	84	230585	9.20	ug/L		94
17) Methyl Acetate	7.518	43	159405	12.17	ug/L	#	93
18) t-1,2-Dichloroethene	7.542	96	228051	17.07	ug/L	#	1
19) Methyl tert-butyl ether	7.624	73	586463	16.71	ug/L		96
20) Acetonitrile	8.006	41	398425	136.97	ug/L	#	60
21) Isopropyl ether	8.047	45	769298	16.92	ug/L		98
22) Chloroprene	8.270	88	238292	19.47	ug/L		93
23) 1,1-Dichloroethane	8.306	63	474217	17.17	ug/L		98
24) Acrylonitrile	8.376	53	397768	57.80	ug/L		94
25) Vinyl Acetate	8.535	43	2559621	92.65	ug/L	#	100
26) c-1,2-Dichloroethene	8.940	96	252680	16.41	ug/L		97
27) 2,2-Dichloropropane	9.069	77	358578	17.00	ug/L		99
28) Bromochloromethane	9.169	128	91814	16.86	ug/L		100
29) Cyclohexane	9.187	56	486603	18.19	ug/L		97
30) Chloroform	9.210	83	454400	17.54	ug/L		99
32) Dibromofluoromethane	9.422	113	785195	92.57	ug/L	#	89
33) 2-Butanone	9.539	72	109766	52.66	ug/L		72
34) 1,1,1-Trichloroethane	9.481	97	386747	18.48	ug/L		99
35) 1,1-Dichloropropene	9.598	75	374086	18.43	ug/L		100
36) Propionitrile	9.886	54	337913	136.04	ug/L	#	79
37) Methacrylonitrile	9.898	41	1621006	149.38	ug/L		94
38) Isobutyl Alcohol	9.898	43	378850	252.19	ug/L	#	97
40) Carbon Tetrachloride	9.404	117	288935	18.91	ug/L	#	94
41) Benzene	9.868	78	1081865	17.84	ug/L		100
42) 1,2-Dichloroethane	10.080	62	354638	18.31	ug/L		95
43) Trichloroethene	10.444	130	207547	16.10	ug/L	#	78
44) Methyl cyclohexane	10.444	83	512091	15.49	ug/L		96
45) Dibromomethane	10.903	93	150740	17.31	ug/L		88
46) 1,2-Dichloropropane	10.979	63	294721	16.53	ug/L		98
47) Bromodichloromethane	11.008	83	308117	18.62	ug/L		98
48) Methyl Methacrylate	11.067	69	177753	14.23	ug/L		98
49) 1,4-Dioxane	11.190	88	54003	194.27	ug/L		93
50) 2-Chloroethyl vinyl ether	11.484	63	766428	90.17	ug/L		99
51) C-1,3-Dichloropropene	11.602	75	413509	17.57	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN007.D
Acq On : 19 Nov 2020 10:49 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 19 12:13:23 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

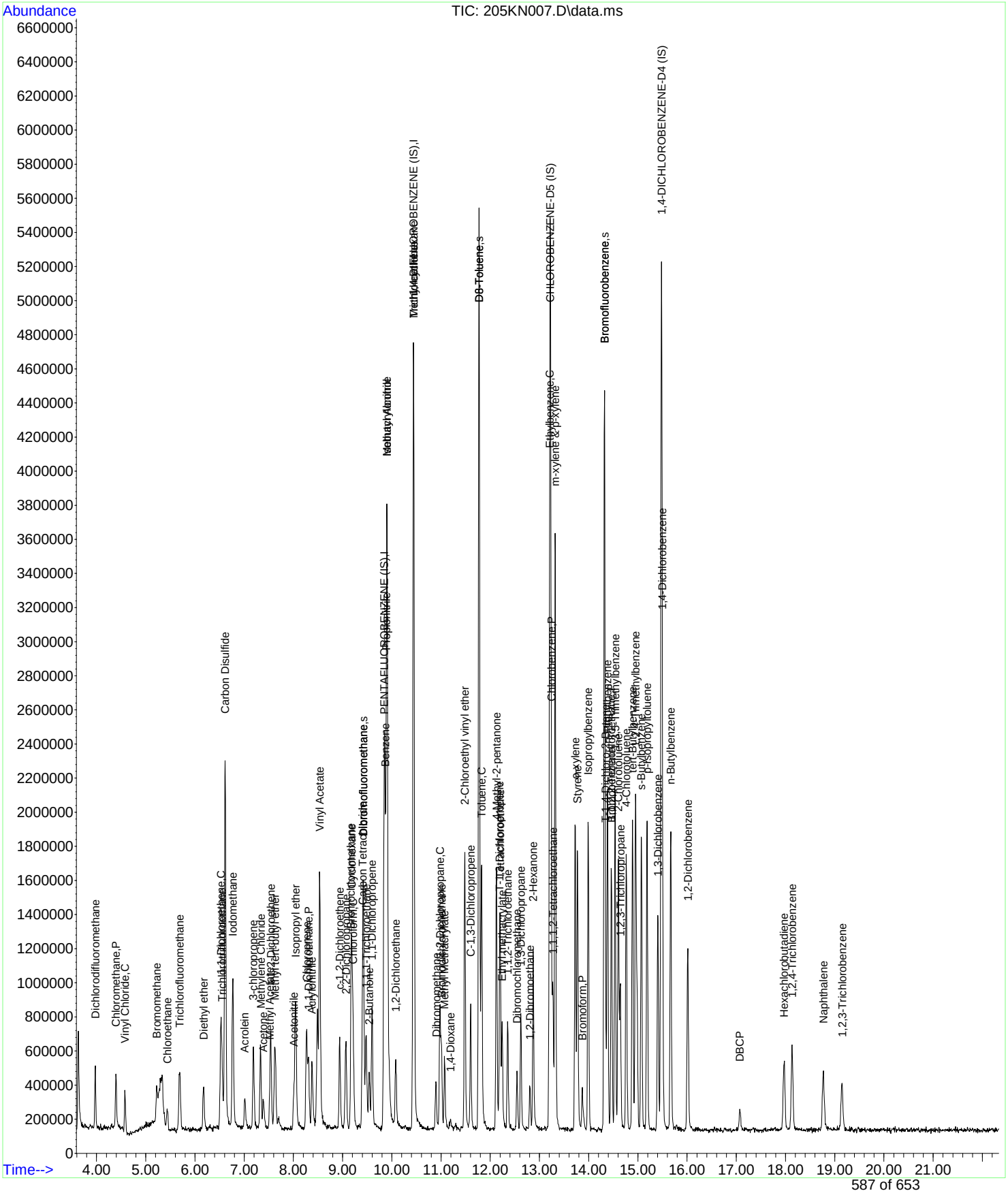
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.772	98	3630051	89.15 ug/L	97
54) 4-Methyl-2-pentanone	12.125	100	151280	62.35 ug/L	93
56) Toluene	11.825	92	673431	14.93 ug/L	98
57) T-1,3-Dichloropropene	12.189	75	352662	15.56 ug/L	98
58) Tetrachloroethene	12.201	164	182474	17.67 ug/L	95
59) Ethyl methacrylate	12.236	69	326927	15.34 ug/L	99
60) 1,1,2-Trichloroethane	12.354	97	209734	15.43 ug/L	98
61) Dibromochloromethane	12.542	129	171344	15.80 ug/L	95
62) 1,3-Dichloropropane	12.624	76	420496	16.42 ug/L	94
63) 1,2-Dibromoethane	12.806	107	205658	15.62 ug/L #	97
64) 2-Hexanone	12.871	43	754731	56.82 ug/L	96
65) Ethylbenzene	13.206	106	384105	16.52 ug/L	95
66) Chlorobenzene	13.241	112	650080	16.50 ug/L	96
67) 1,1,1,2-Tetrachloroethane	13.276	131	201298	16.44 ug/L	98
68) m-xylene & p-xylene	13.317	106	987588	35.44 ug/L	99
69) o-xylene	13.729	106	478796	16.67 ug/L	93
70) Styrene	13.770	104	839743	16.59 ug/L	99
71) Bromoform	13.870	173	95673	14.53 ug/L	99
72) Isopropylbenzene	13.987	105	1298038	17.44 ug/L	97
74) Bromofluorobenzene	14.322	95	1784745	96.84 ug/L #	80
75) n-Propylbenzene	14.381	91	1709278	18.32 ug/L	98
76) 1,1,2,2-Tetrachloroethane	14.457	83	309106	14.97 ug/L	98
77) 1,2,3-Trichloropropane	14.645	61	113773m	15.74 ug/L	
78) T-1,4-Dichloro-2-Butene	14.340	53	120576	15.65 ug/L #	52
80) Bromobenzene	14.463	156	265636	16.16 ug/L	94
81) 1,2,4-Trimethylbenzene	14.951	105	1242925	19.64 ug/L	97
82) 2-Chlorotoluene	14.604	91	1047191	19.04 ug/L	98
83) 4-Chlorotoluene	14.763	91	1083494	19.06 ug/L	99
84) tert-Butylbenzene	14.892	119	947987	17.64 ug/L	97
85) 1,3,5-Trimethylbenzene	14.539	105	1187445	18.70 ug/L	99
86) p-Isopropyltoluene	15.186	119	1166109	17.97 ug/L	100
87) s-Butylbenzene	15.068	105	1428842	17.67 ug/L	98
88) 1,3-Dichlorobenzene	15.409	146	521603	17.12 ug/L	90
89) 1,4-Dichlorobenzene	15.497	146	543117	16.49 ug/L #	70
90) n-Butylbenzene	15.668	91	1248886	18.71 ug/L	97
91) 1,2-Dichlorobenzene	16.014	146	464540	15.93 ug/L	89
92) DBCP	17.072	157	34505	10.24 ug/L	98
93) Hexachlorobutadiene	17.971	225	103201	11.85 ug/L	95
94) 1,2,4-Trichlorobenzene	18.135	180	203777	13.12 ug/L #	94
95) Naphthalene	18.770	128	436068	10.81 ug/L	100
96) 1,2,3-Trichlorobenzene	19.152	180	123784	9.90 ug/L #	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN007.D
Acq On : 19 Nov 2020 10:49 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 19 12:13:23 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1217120	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2353990	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.217	82	1612072	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.474	152	1366836	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.416	113	678489	79.07	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 158.14%#				
52) D8-Toluene	11.772	98	3101508	75.41	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 150.82%#				
73) Bromofluorobenzene	14.322	95	1494289	79.44	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 158.88%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.969	85	836993	49.35	ug/L		99
3) Chloromethane	4.392	50	805584	35.67	ug/L		97
4) Vinyl Chloride	4.574	62	752003	41.53	ug/L		98
5) Bromomethane	5.221	94	219770	62.38	ug/L		90
6) Chloroethane	5.421	64	316629	40.47	ug/L		96
7) Trichlorofluoromethane	5.679	101	965285	50.35	ug/L		99
8) Diethyl ether	6.173	59	522992	40.63	ug/L		98
9) 1,1-Dichloroethene	6.519	96	546417	43.90	ug/L		95
10) Trichlorotrifluoroethane	6.543	151	372819	44.57	ug/L		94
11) Acrolein	7.007	56	1204139	313.84	ug/L		99
12) Iodomethane	6.766	142	2879969	340.42	ug/L	#	90
13) Carbon Disulfide	6.613	76	8649511	391.72	ug/L		99
14) 3-chloropropene	7.183	41	1037538	52.90	ug/L		97
15) Acetone	7.389	43	709256	150.65	ug/L		98
16) Methylene Chloride	7.330	84	640448	25.25	ug/L		100
17) Methyl Acetate	7.512	43	441064	33.30	ug/L	#	96
18) t-1,2-Dichloroethene	7.542	96	633261	46.87	ug/L	#	1
19) Methyl tert-butyl ether	7.624	73	1725407	48.58	ug/L		96
20) Acetonitrile	8.006	41	1168765	397.17	ug/L		98
21) Isopropyl ether	8.047	45	2215010	48.14	ug/L		99
22) Chloroprene	8.264	88	614319	49.62	ug/L		97
23) 1,1-Dichloroethane	8.305	63	1349675	48.29	ug/L		100
24) Acrylonitrile	8.376	53	2151787	309.07	ug/L		99
25) Vinyl Acetate	8.529	43	6808531	243.61	ug/L	#	100
26) c-1,2-Dichloroethene	8.940	96	700871	44.98	ug/L		95
27) 2,2-Dichloropropane	9.063	77	1076528	50.46	ug/L		98
28) Bromochloromethane	9.175	128	235594	42.76	ug/L		95
29) Cyclohexane	9.181	56	1386813	51.24	ug/L		96
30) Chloroform	9.210	83	1255758	47.91	ug/L		99
32) Dibromofluoromethane	9.416	113	678489	79.07	ug/L	#	89
33) 2-Butanone	9.539	72	353229	167.51	ug/L		95
34) 1,1,1-Trichloroethane	9.481	97	1088150	51.41	ug/L		99
35) 1,1-Dichloropropene	9.592	75	1057919	51.52	ug/L		98
36) Propionitrile	9.892	54	847412	337.21	ug/L	#	73
37) Methacrylonitrile	9.904	41	4240505	386.26	ug/L		95
38) Isobutyl Alcohol	9.898	43	1088288	716.08	ug/L	#	89
40) Carbon Tetrachloride	9.404	117	844268m	54.69	ug/L		
41) Benzene	9.868	78	2829189	46.19	ug/L		99
42) 1,2-Dichloroethane	10.080	62	930071	47.54	ug/L		96
43) Trichloroethene	10.444	130	575171	44.17	ug/L		95
44) Methyl cyclohexane	10.438	83	1343230	40.23	ug/L		98
45) Dibromomethane	10.891	93	399997	45.46	ug/L		91
46) 1,2-Dichloropropane	10.973	63	793038	44.02	ug/L		97
47) Bromodichloromethane	11.008	83	887527	53.08	ug/L		99
48) Methyl Methacrylate	11.073	69	486732	38.58	ug/L		99
49) 1,4-Dioxane	11.190	88	137914	491.15	ug/L		95
50) 2-Chloroethyl vinyl ether	11.478	63	2074511	241.63	ug/L		99
51) C-1,3-Dichloropropene	11.602	75	1213246	51.02	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

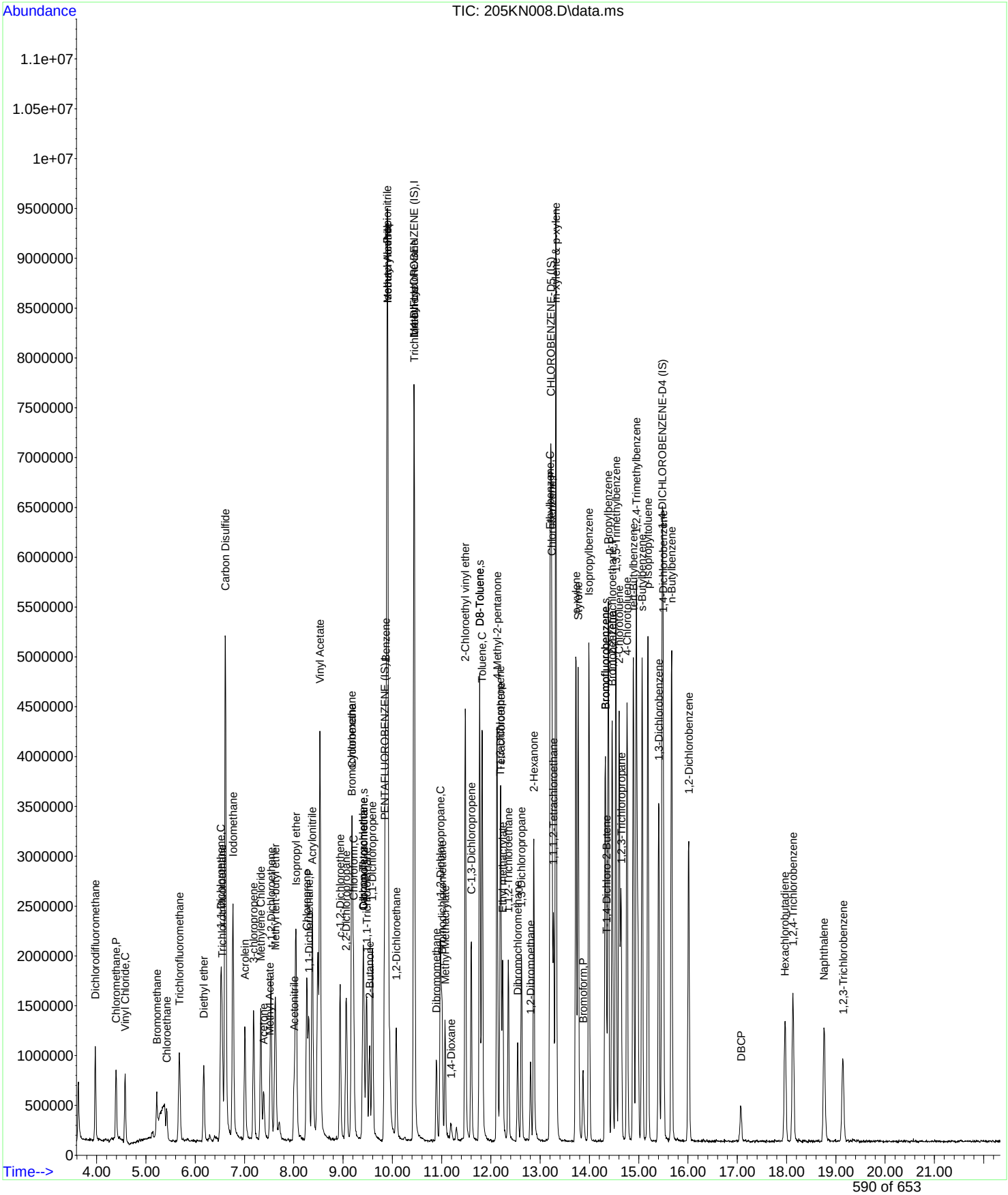
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.772	98	3099476	75.36	ug/L		99
54) 4-Methyl-2-pentanone	12.125	100	395380	161.32	ug/L		95
56) Toluene	11.819	92	1814837	39.43	ug/L		99
57) T-1,3-Dichloropropene	12.189	75	980489	42.40	ug/L		96
58) Tetrachloroethene	12.201	164	452738	42.95	ug/L		97
59) Ethyl methacrylate	12.236	69	923118	42.43	ug/L		99
60) 1,1,2-Trichloroethane	12.354	97	571249	41.17	ug/L		98
61) Dibromochloromethane	12.542	129	522815	47.25	ug/L		99
62) 1,3-Dichloropropane	12.618	76	1122001	42.93	ug/L		95
63) 1,2-Dibromoethane	12.806	107	593930	44.20	ug/L		96
64) 2-Hexanone	12.871	43	2057085	151.75	ug/L		96
65) Ethylbenzene	13.200	106	1029541	43.40	ug/L		98
66) Chlorobenzene	13.235	112	1747854	43.46	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.270	131	572785	45.85	ug/L		99
68) m-xylene & p-xylene	13.317	106	2555424	89.85	ug/L		99
69) o-xylene	13.729	106	1356099	46.27	ug/L		98
70) Styrene	13.770	104	2212182	42.81	ug/L		98
71) Bromoform	13.870	173	319258	47.50	ug/L		100
72) Isopropylbenzene	13.987	105	3552836	46.76	ug/L		97
74) Bromofluorobenzene	14.322	95	1494289	79.44	ug/L	#	83
75) n-Propylbenzene	14.381	91	4650659	48.83	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.463	83	853912	40.52	ug/L		98
77) 1,2,3-Trichloropropane	14.645	61	301262m	40.84	ug/L		
78) T-1,4-Dichloro-2-Butene	14.346	53	303268	38.58	ug/L	#	82
80) Bromobenzene	14.457	156	703749	40.57	ug/L		93
81) 1,2,4-Trimethylbenzene	14.951	105	3364816	50.40	ug/L		99
82) 2-Chlorotoluene	14.604	91	2804184	48.32	ug/L		98
83) 4-Chlorotoluene	14.763	91	2961213	49.37	ug/L		99
84) tert-Butylbenzene	14.892	119	2540489	44.80	ug/L		94
85) 1,3,5-Trimethylbenzene	14.539	105	3288125	49.10	ug/L		99
86) p-Isopropyltoluene	15.186	119	3248592	47.46	ug/L		97
87) s-Butylbenzene	15.068	105	3950643	46.31	ug/L		99
88) 1,3-Dichlorobenzene	15.409	146	1470644	45.76	ug/L		94
89) 1,4-Dichlorobenzene	15.497	146	1490431	42.91	ug/L		92
90) n-Butylbenzene	15.668	91	3454884	49.07	ug/L		100
91) 1,2-Dichlorobenzene	16.014	146	1370743	44.57	ug/L		97
92) DBCP	17.078	157	106714	30.01	ug/L		97
93) Hexachlorobutadiene	17.965	225	314949	34.28	ug/L		97
94) 1,2,4-Trichlorobenzene	18.129	180	657865	40.15	ug/L		97
95) Naphthalene	18.758	128	1383722	32.51	ug/L		99
96) 1,2,3-Trichlorobenzene	19.146	180	388718	29.46	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN008.D
Acq On : 19 Nov 2020 11:20 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 19 12:13:26 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1208553	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2324329	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.217	82	1614423	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1389872	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.416	113	859067	100.82	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 201.64%#				
52) D8-Toluene	11.772	98	3914979	96.40	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 192.80%#				
73) Bromofluorobenzene	14.322	95	1962092	104.16	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 208.32%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.969	85	1371350	81.43	ug/L		100
3) Chloromethane	4.392	50	1458184	65.02	ug/L		98
4) Vinyl Chloride	4.574	62	1327646	73.85	ug/L		97
5) Bromomethane	5.215	94	396760	113.42	ug/L		97
6) Chloroethane	5.421	64	338272	43.55	ug/L		97
7) Trichlorofluoromethane	5.667	101	1605213	84.32	ug/L		99
8) Diethyl ether	6.173	59	882717	69.07	ug/L		99
9) 1,1-Dichloroethene	6.519	96	899184	72.75	ug/L		96
10) Trichlorotrifluoroethane	6.543	151	605807	72.94	ug/L		94
11) Acrolein	7.007	56	1957408	513.78	ug/L		98
12) Iodomethane	6.766	142	4503159	536.06	ug/L	#	90
13) Carbon Disulfide	6.607	76	13463864	614.08	ug/L		99
14) 3-chloropropene	7.183	41	1631725	83.79	ug/L		98
15) Acetone	7.389	43	1177504	251.89	ug/L		97
16) Methylene Chloride	7.330	84	1040221	41.30	ug/L		99
17) Methyl Acetate	7.512	43	745030	56.64	ug/L		98
18) t-1,2-Dichloroethene	7.536	96	1051524	78.37	ug/L	#	1
19) Methyl tert-butyl ether	7.624	73	2822105	80.03	ug/L		95
20) Acetonitrile	8.006	41	1944065	665.32	ug/L		98
21) Isopropyl ether	8.047	45	3700268	81.00	ug/L		99
22) Chloroprene	8.258	88	983163	79.98	ug/L		98
23) 1,1-Dichloroethane	8.305	63	2193522	79.05	ug/L		99
24) Acrylonitrile	8.376	53	3548204	513.26	ug/L		99
25) Vinyl Acetate	8.529	43	10869613	391.68	ug/L	#	100
26) c-1,2-Dichloroethene	8.940	96	1163928	75.23	ug/L		96
27) 2,2-Dichloropropane	9.063	77	1802386	85.09	ug/L		98
28) Bromochloromethane	9.175	128	336411	61.49	ug/L		86
29) Cyclohexane	9.181	56	2224726	82.79	ug/L		96
30) Chloroform	9.210	83	2084702	80.10	ug/L		99
32) Dibromofluoromethane	9.416	113	859067	100.82	ug/L	#	89
33) 2-Butanone	9.533	72	589997	281.78	ug/L		98
34) 1,1,1-Trichloroethane	9.475	97	1804040	85.83	ug/L		98
35) 1,1-Dichloropropene	9.592	75	1731510	84.93	ug/L		98
36) Propionitrile	9.886	54	1385608	555.28	ug/L	#	78
37) Methacrylonitrile	9.904	41	6602548	605.68	ug/L		98
38) Isobutyl Alcohol	9.898	43	1741977	1154.32	ug/L	#	92
40) Carbon Tetrachloride	9.404	117	1400654m	91.88	ug/L		
41) Benzene	9.868	78	4588735	75.86	ug/L		100
42) 1,2-Dichloroethane	10.080	62	1583942	82.00	ug/L		96
43) Trichloroethene	10.444	130	922489	71.75	ug/L		98
44) Methyl cyclohexane	10.444	83	2157736	65.44	ug/L		97
45) Dibromomethane	10.897	93	662363	76.24	ug/L		94
46) 1,2-Dichloropropane	10.979	63	1365225	76.75	ug/L		98
47) Bromodichloromethane	11.008	83	1507069	91.29	ug/L		98
48) Methyl Methacrylate	11.073	69	784575	62.98	ug/L		97
49) 1,4-Dioxane	11.196	88	226181	815.78	ug/L		90
50) 2-Chloroethyl vinyl ether	11.484	63	3267574	385.45	ug/L		98
51) C-1,3-Dichloropropene	11.602	75	2042491	87.00	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

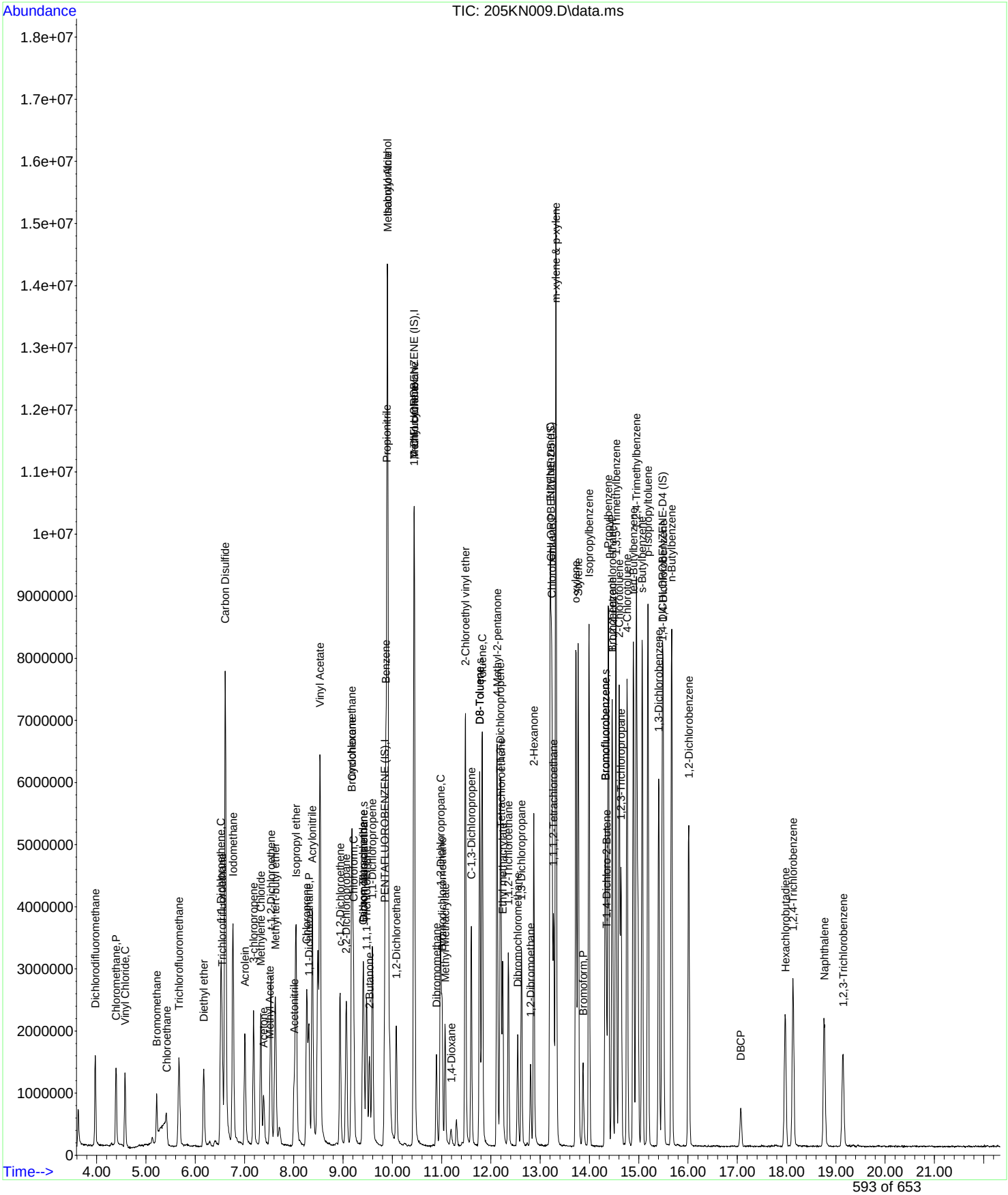
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.772	98	3914979	96.40	ug/L		98
54) 4-Methyl-2-pentanone	12.125	100	642904	265.66	ug/L		98
56) Toluene	11.825	92	2957735	64.17	ug/L		99
57) T-1,3-Dichloropropene	12.189	75	1705784	73.65	ug/L		99
58) Tetrachloroethene	12.207	164	766005	72.57	ug/L		98
59) Ethyl methacrylate	12.236	69	1505263	69.09	ug/L		99
60) 1,1,2-Trichloroethane	12.354	97	953126	68.60	ug/L		99
61) Dibromochloromethane	12.542	129	973442	87.85	ug/L		98
62) 1,3-Dichloropropane	12.618	76	1926010	73.59	ug/L		96
63) 1,2-Dibromoethane	12.806	107	977066	72.60	ug/L		100
64) 2-Hexanone	12.871	43	3425404	252.32	ug/L		98
65) Ethylbenzene	13.206	106	1705057	71.77	ug/L		99
66) Chlorobenzene	13.235	112	2931384	72.78	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.270	131	967791	77.35	ug/L		98
68) m-xylene & p-xylene	13.317	106	4131704	145.06	ug/L		98
69) o-xylene	13.723	106	2228011	75.92	ug/L		96
70) Styrene	13.770	104	3788012	73.20	ug/L		98
71) Bromoform	13.870	173	558705	83.00	ug/L		95
72) Isopropylbenzene	13.993	105	5873794	77.19	ug/L		97
74) Bromofluorobenzene	14.322	95	1962092	104.16	ug/L	#	83
75) n-Propylbenzene	14.381	91	7786988	81.65	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.463	83	1447067	68.57	ug/L		96
77) 1,2,3-Trichloropropane	14.639	61	487875m	66.05	ug/L		
78) T-1,4-Dichloro-2-Butene	14.346	53	531782	67.54	ug/L		93
80) Bromobenzene	14.463	156	1203554	68.24	ug/L		93
81) 1,2,4-Trimethylbenzene	14.951	105	5665226	83.44	ug/L		99
82) 2-Chlorotoluene	14.604	91	4821335	81.71	ug/L		98
83) 4-Chlorotoluene	14.763	91	5008377	82.12	ug/L		98
84) tert-Butylbenzene	14.892	119	4383506	76.02	ug/L		97
85) 1,3,5-Trimethylbenzene	14.539	105	5448477	80.00	ug/L		99
86) p-Isopropyltoluene	15.186	119	5524575	79.38	ug/L		98
87) s-Butylbenzene	15.068	105	6633423	76.47	ug/L		99
88) 1,3-Dichlorobenzene	15.403	146	2520522	77.12	ug/L		92
89) 1,4-Dichlorobenzene	15.497	146	2541465	71.95	ug/L		97
90) n-Butylbenzene	15.668	91	5860785	81.86	ug/L		99
91) 1,2-Dichlorobenzene	16.014	146	2382455	76.18	ug/L		97
92) DBCP	17.072	157	190666	52.73	ug/L		100
93) Hexachlorobutadiene	17.977	225	565022	60.48	ug/L		98
94) 1,2,4-Trichlorobenzene	18.129	180	1164591	69.90	ug/L		97
95) Naphthalene	18.764	128	2466369	56.99	ug/L	#	85
96) 1,2,3-Trichlorobenzene	19.146	180	710050	52.92	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN009.D
Acq On : 19 Nov 2020 11:51 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 19 12:26:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.845	168	1285587	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.438	114	2302813	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.218	82	1664856	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1435917	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	933861	103.03	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 206.06%#				
52) D8-Toluene	11.772	98	4337450	107.80	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 215.60%#				
73) Bromofluorobenzene	14.322	95	2108455	108.54	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 217.08%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.969	85	1729312	96.53	ug/L		99
3) Chloromethane	4.392	50	1884981	79.02	ug/L		99
4) Vinyl Chloride	4.575	62	1709609	89.39	ug/L		97
5) Bromomethane	5.221	94	562300	151.12	ug/L		92
6) Chloroethane	5.427	64	330195	39.96	ug/L		93
7) Trichlorofluoromethane	5.667	101	2094954	103.45	ug/L		99
8) Diethyl ether	6.173	59	1111643	81.77	ug/L		100
9) 1,1-Dichloroethene	6.519	96	1173403	89.25	ug/L		99
10) Trichlorotrifluoroethane	6.543	151	786588	89.03	ug/L		98
11) Acrolein	7.007	56	2396965	591.46	ug/L		98
12) Iodomethane	6.766	142	5907666	661.12	ug/L	#	93
13) Carbon Disulfide	6.608	76	16659424	714.30	ug/L		99
14) 3-chloropropene	7.183	41	2222281	107.28	ug/L		97
15) Acetone	7.389	43	1481571	297.94	ug/L		96
16) Methylene Chloride	7.330	84	1324748	49.44	ug/L		99
17) Methyl Acetate	7.512	43	920388	65.78	ug/L	#	94
18) t-1,2-Dichloroethene	7.536	96	1331120	93.26	ug/L	#	1
19) Methyl tert-butyl ether	7.624	73	3435059	91.57	ug/L		95
20) Acetonitrile	8.012	41	2370312	762.58	ug/L		99
21) Isopropyl ether	8.041	45	4624660	95.17	ug/L		99
22) Chloroprene	8.259	88	1285297	98.29	ug/L		99
23) 1,1-Dichloroethane	8.306	63	2773122	93.94	ug/L		99
24) Acrylonitrile	8.376	53	4303032	585.15	ug/L		98
25) Vinyl Acetate	8.529	43	13302716	450.63	ug/L	#	100
26) c-1,2-Dichloroethene	8.940	96	1421324	86.36	ug/L		92
27) 2,2-Dichloropropane	9.064	77	2243269	99.55	ug/L		98
28) Bromochloromethane	9.175	128	412367	70.85	ug/L		94
29) Cyclohexane	9.181	56	2822334	98.73	ug/L		96
30) Chloroform	9.210	83	2558648	92.42	ug/L		100
32) Dibromofluoromethane	9.422	113	933861	103.03	ug/L	#	90
33) 2-Butanone	9.534	72	741450	332.90	ug/L		97
34) 1,1,1-Trichloroethane	9.475	97	2246059	100.46	ug/L		98
35) 1,1-Dichloropropene	9.598	75	2161746	99.68	ug/L		97
36) Propionitrile	9.892	54	1676766	631.70	ug/L	#	75
37) Methacrylonitrile	9.904	41	8006829	690.49	ug/L		97
38) Isobutyl Alcohol	9.898	43	2112005	1315.66	ug/L	#	92
40) Carbon Tetrachloride	9.404	117	1755533m	116.24	ug/L		
41) Benzene	9.868	78	5766714	96.23	ug/L		99
42) 1,2-Dichloroethane	10.080	62	1930831	100.90	ug/L		98
43) Trichloroethene	10.444	130	1169448	91.81	ug/L		97
44) Methyl cyclohexane	10.444	83	2631438	80.56	ug/L		97
45) Dibromomethane	10.891	93	789742	91.75	ug/L		93
46) 1,2-Dichloropropane	10.979	63	1695005	96.18	ug/L		99
47) Bromodichloromethane	11.008	83	1894020	115.80	ug/L		99
48) Methyl Methacrylate	11.067	69	994020	80.53	ug/L		98
49) 1,4-Dioxane	11.191	88	257887	938.82	ug/L		96
50) 2-Chloroethyl vinyl ether	11.484	63	4011514	477.62	ug/L		100
51) C-1,3-Dichloropropene	11.602	75	2565944	110.31	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration

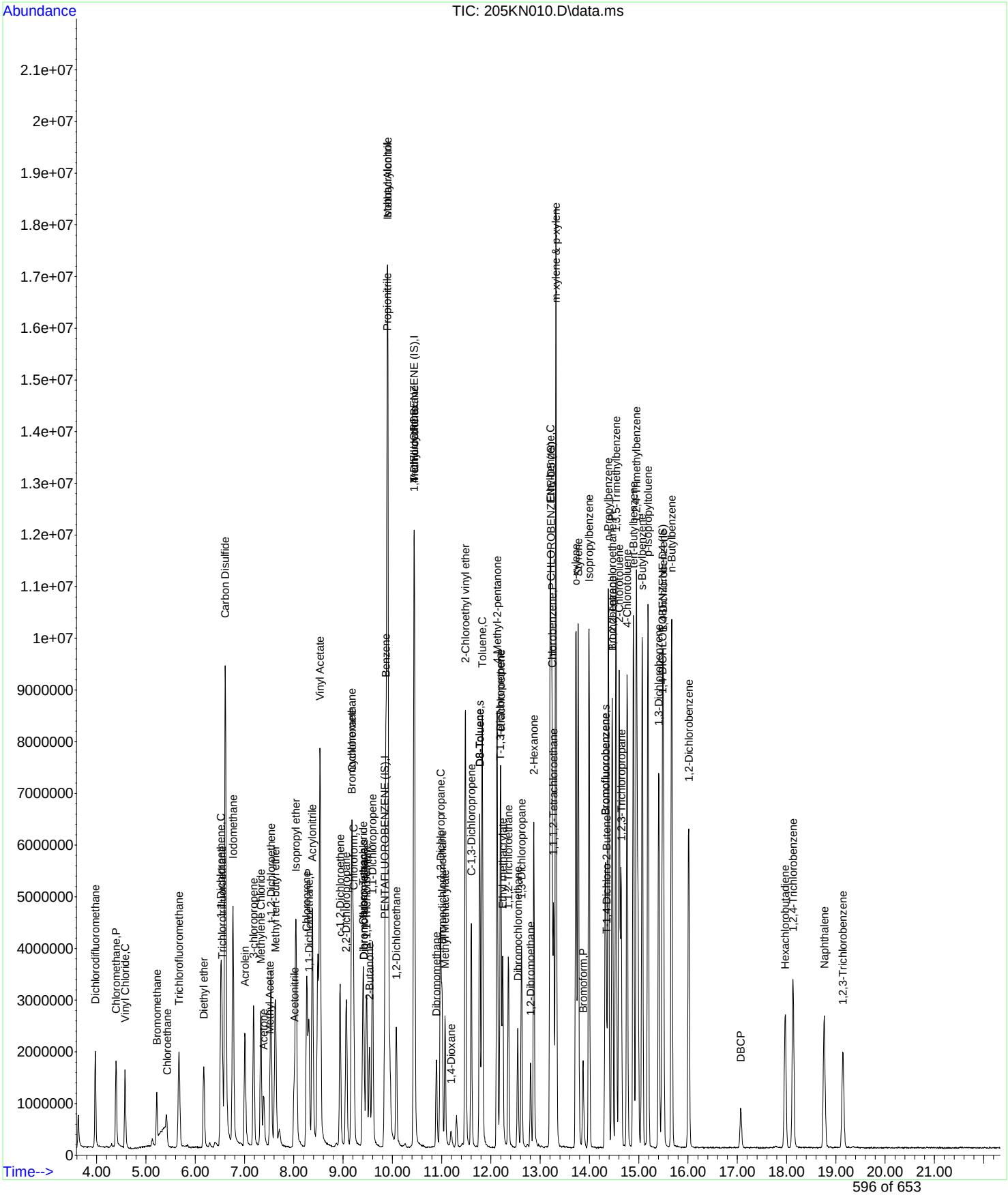
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.772	98	4337573	107.80 ug/L	98
54) 4-Methyl-2-pentanone	12.125	100	775468	323.43 ug/L	93
56) Toluene	11.825	92	3691514	77.66 ug/L	99
57) T-1,3-Dichloropropene	12.189	75	2097211	87.81 ug/L	98
58) Tetrachloroethene	12.201	164	983418	90.35 ug/L	97
59) Ethyl methacrylate	12.236	69	1865494	83.03 ug/L	98
60) 1,1,2-Trichloroethane	12.354	97	1193110	83.27 ug/L	98
61) Dibromochloromethane	12.548	129	1209740	105.87 ug/L	99
62) 1,3-Dichloropropane	12.624	76	2375424	88.01 ug/L	98
63) 1,2-Dibromoethane	12.806	107	1199542	86.44 ug/L	99
64) 2-Hexanone	12.871	43	4248110	303.44 ug/L	98
65) Ethylbenzene	13.206	106	2150547	87.78 ug/L	100
66) Chlorobenzene	13.241	112	3615945	87.06 ug/L	100
67) 1,1,1,2-Tetrachloroethane	13.270	131	1239896	96.10 ug/L	99
68) m-xylene & p-xylene	13.317	106	5107094	173.87 ug/L	95
69) o-xylene	13.723	106	2739594	90.52 ug/L	96
70) Styrene	13.770	104	4673554	87.58 ug/L	98
71) Bromoform	13.870	173	749514	107.97 ug/L	99
72) Isopropylbenzene	13.993	105	7193576	91.67 ug/L	98
74) Bromofluorobenzene	14.322	95	2108455	108.54 ug/L	84
75) n-Propylbenzene	14.381	91	9558022	97.18 ug/L	99
76) 1,1,2,2-Tetrachloroethane	14.463	83	1725499	79.29 ug/L	97
77) 1,2,3-Trichloropropane	14.645	61	623122m	81.80 ug/L	
78) T-1,4-Dichloro-2-Butene	14.346	53	657623	81.00 ug/L #	91
80) Bromobenzene	14.463	156	1499222	82.28 ug/L	95
81) 1,2,4-Trimethylbenzene	14.951	105	6937425	98.90 ug/L	99
82) 2-Chlorotoluene	14.604	91	5882946	96.50 ug/L	99
83) 4-Chlorotoluene	14.763	91	6159101	97.75 ug/L	99
84) tert-Butylbenzene	14.892	119	5367420	90.10 ug/L	96
85) 1,3,5-Trimethylbenzene	14.540	105	6856962	97.46 ug/L	99
86) p-Isopropyltoluene	15.186	119	6748507	93.85 ug/L	98
87) s-Butylbenzene	15.068	105	8074381	90.10 ug/L	99
88) 1,3-Dichlorobenzene	15.403	146	3220656	95.38 ug/L	96
89) 1,4-Dichlorobenzene	15.497	146	3220603	88.26 ug/L	97
90) n-Butylbenzene	15.668	91	7147393	96.63 ug/L	100
91) 1,2-Dichlorobenzene	16.014	146	2892946	89.54 ug/L	97
92) DBCP	17.072	157	236625	63.35 ug/L	99
93) Hexachlorobutadiene	17.971	225	722622	74.88 ug/L	98
94) 1,2,4-Trichlorobenzene	18.130	180	1395430	81.07 ug/L	96
95) Naphthalene	18.764	128	2976771	66.58 ug/L #	89
96) 1,2,3-Trichlorobenzene	19.140	180	880580	63.53 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN010.D
Acq On : 19 Nov 2020 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 19 12:45:16 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 10:41:27 2020
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN012.D
Acq On : 19 Nov 2020 1:24 pm
Operator : KKW
Sample : SCV
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:34:48 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 13:02:55 2020
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1335071	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2438645	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1652574	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.480	152	1403353	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	685210	49.76	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.52%				
52) D8-Toluene	11.772	98	3142816	52.18	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.36%				
73) Bromofluorobenzene	14.322	95	1543298	52.29	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.58%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	354802	20.59	ug/L		99
3) Chloromethane	4.392	50	396453	19.98	ug/L		99
4) Vinyl Chloride	4.574	62	333797	20.72	ug/L		99
5) Bromomethane	5.221	94	110552	24.95	ug/L	#	94
6) Chloroethane	5.432	64	153751	21.69	ug/L		99
7) Trichlorofluoromethane	5.685	101	412512	20.58	ug/L		98
8) Diethyl ether	6.173	59	554603	49.76	ug/L		97
9) 1,1-Dichloroethene	6.525	96	564914	49.01	ug/L		93
10) Trichlorotrifluoroethane	6.549	151	394789	51.14	ug/L		94
11) Acrolein	7.007	56	547444	236.15	ug/L		99
12) Iodomethane	6.772	142	594142	48.06	ug/L		94
13) Carbon Disulfide	6.613	76	1963334	52.00	ug/L		98
14) 3-chloropropene	7.189	41	1102445	48.40	ug/L		95
15) Acetone	7.389	43	750521	239.27	ug/L		97
16) Methylene Chloride	7.336	84	659865	47.21	ug/L		98
17) Methyl Acetate	7.518	43	372876	38.04	ug/L		94
18) t-1,2-Dichloroethene	7.542	96	638351	47.86	ug/L		99
19) Methyl tert-butyl ether	7.630	73	1657107	49.09	ug/L		99
20) Acetonitrile	8.041	41	785041	308.73	ug/L	#	90
21) Isopropyl ether	8.047	45	2283591	50.97	ug/L		98
22) Chloroprene	8.264	88	634995	49.71	ug/L		93
23) 1,1-Dichloroethane	8.311	63	1308548	47.70	ug/L		99
24) Acrylonitrile	8.376	53	249323	60.18	ug/L	#	99
25) Vinyl Acetate	8.535	43	1300608	46.27	ug/L		100
26) c-1,2-Dichloroethene	8.940	96	705586	49.95	ug/L		96
27) 2,2-Dichloropropane	9.063	77	1095632	46.78	ug/L		99
28) Bromochloromethane	9.175	128	266834	53.48	ug/L		96
29) Cyclohexane	9.181	56	1373332	46.02	ug/L		96
30) Chloroform	9.216	83	1281179	48.90	ug/L		100
32) Dibromofluoromethane	9.422	113	685210	49.76	ug/L	#	91
33) 2-Butanone	9.533	72	375785	245.67	ug/L		89
34) 1,1,1-Trichloroethane	9.481	97	1094873	50.62	ug/L		99
35) 1,1-Dichloropropene	9.598	75	1049130	47.68	ug/L		99
36) Propionitrile	9.898	54	103230	54.97	ug/L	#	1
37) Methacrylonitrile	9.904	41	623847	67.28	ug/L	#	82
38) Isobutyl Alcohol	9.898	43	631905	563.50	ug/L	#	72
40) Carbon Tetrachloride	9.410	117	1013178	55.46	ug/L		87
41) Benzene	9.868	78	2985915	53.56	ug/L		99
42) 1,2-Dichloroethane	10.080	62	932453	45.85	ug/L		96
43) Trichloroethene	10.444	130	605829	53.80	ug/L		95
44) Methyl cyclohexane	10.444	83	1328496	47.49	ug/L		98
45) Dibromomethane	10.897	93	387497	48.92	ug/L		94
46) 1,2-Dichloropropane	10.979	63	828991	49.81	ug/L		96
47) Bromodichloromethane	11.008	83	913394	49.93	ug/L		99
48) Methyl Methacrylate	11.073	69	508778	49.14	ug/L		96
49) 1,4-Dioxane	11.190	88	124499	880.66	ug/L		100
50) 2-Chloroethyl vinyl ether	11.484	63	2098051	267.05	ug/L		99
51) C-1,3-Dichloropropene	11.602	75	1207357	48.81	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN012.D
Acq On : 19 Nov 2020 1:24 pm
Operator : KKW
Sample : SCV
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 20 07:34:48 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 13:02:55 2020
Response via : Initial Calibration

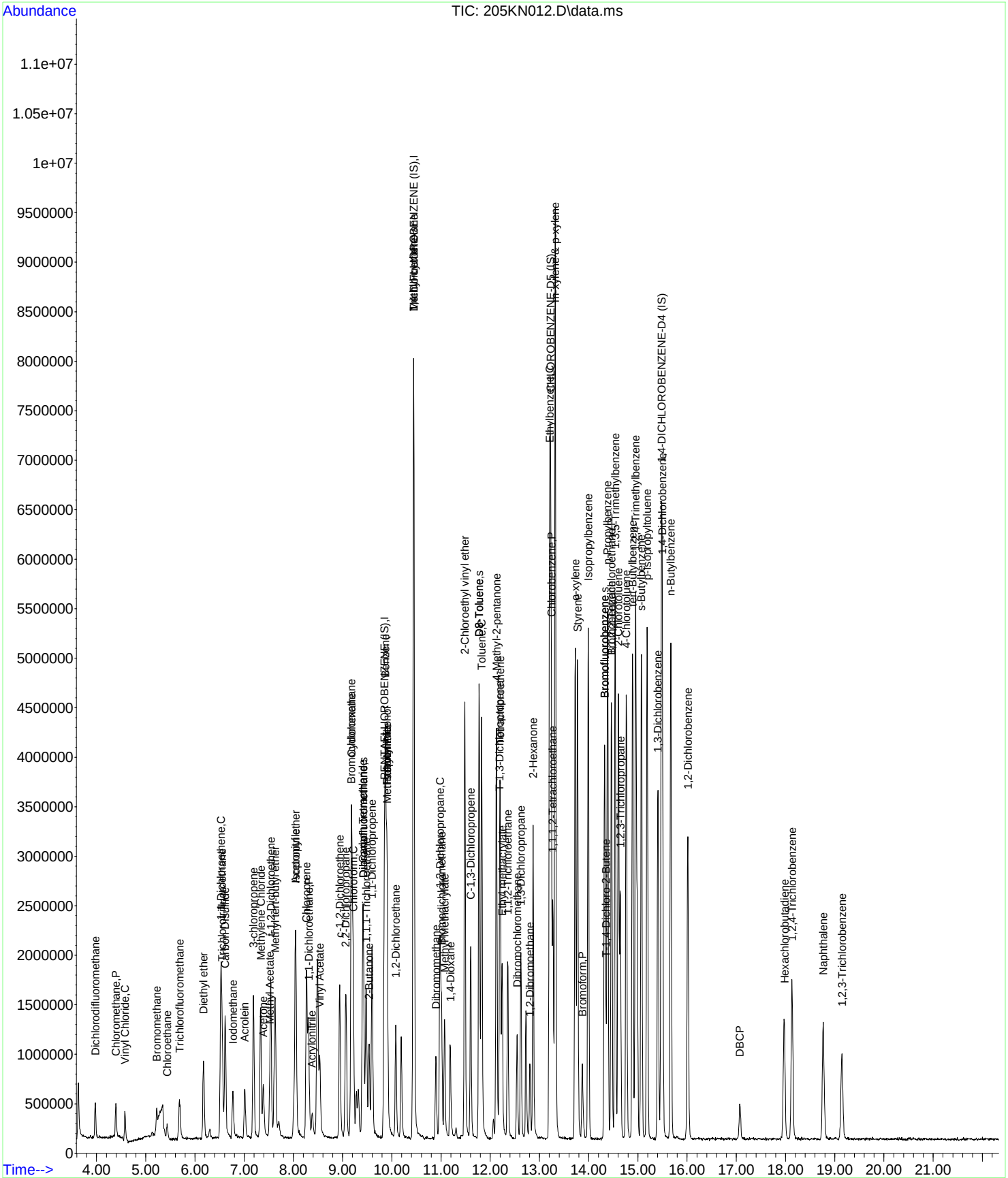
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.772	98	3142816	52.18	ug/L		97
54) 4-Methyl-2-pentanone	12.125	100	383259	231.64	ug/L		95
56) Toluene	11.825	92	1866440	52.93	ug/L		98
57) T-1,3-Dichloropropene	12.189	75	1033154	49.24	ug/L		99
58) Tetrachloroethene	12.201	164	470073	48.46	ug/L		97
59) Ethyl methacrylate	12.242	69	931908	49.65	ug/L		99
60) 1,1,2-Trichloroethane	12.354	97	593568	49.82	ug/L		99
61) Dibromochloromethane	12.548	129	570220	51.92	ug/L		99
62) 1,3-Dichloropropane	12.624	76	1136370	51.51	ug/L		97
63) 1,2-Dibromoethane	12.806	107	573185	51.69	ug/L		93
64) 2-Hexanone	12.871	43	2041750	251.42	ug/L		100
65) Ethylbenzene	13.206	106	1045939	48.81	ug/L		98
66) Chlorobenzene	13.241	112	1837265	51.72	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.270	131	607147	57.12	ug/L		98
68) m-xylene & p-xylene	13.317	106	2627132	105.62	ug/L		99
69) o-xylene	13.729	106	1344899	52.72	ug/L		99
70) Styrene	13.776	104	2296941	55.15	ug/L		99
71) Bromoform	13.870	173	332797	51.92	ug/L		100
72) Isopropylbenzene	13.993	105	3652042	54.39	ug/L		99
74) Bromofluorobenzene	14.322	95	1543298	52.29	ug/L		85
75) n-Propylbenzene	14.381	91	4786801	53.33	ug/L		100
76) 1,1,2,2-Tetrachloroethane	14.463	83	859359	51.62	ug/L		98
77) 1,2,3-Trichloropropane	14.645	61	288427m	47.38	ug/L		
78) T-1,4-Dichloro-2-Butene	14.351	53	318781	48.51	ug/L		95
80) Bromobenzene	14.463	156	749613	53.05	ug/L		96
81) 1,2,4-Trimethylbenzene	14.951	105	3477379	52.93	ug/L		99
82) 2-Chlorotoluene	14.604	91	2933062	53.11	ug/L		99
83) 4-Chlorotoluene	14.763	91	3049254	52.88	ug/L		99
84) tert-Butylbenzene	14.892	119	2595739	52.01	ug/L		96
85) 1,3,5-Trimethylbenzene	14.539	105	3405478	53.50	ug/L		100
86) p-Isopropyltoluene	15.186	119	3361992	54.23	ug/L		98
87) s-Butylbenzene	15.068	105	4051789	54.26	ug/L		99
88) 1,3-Dichlorobenzene	15.403	146	1547832	54.68	ug/L		99
89) 1,4-Dichlorobenzene	15.497	146	1537044	50.65	ug/L		98
90) n-Butylbenzene	15.668	91	3443258	53.41	ug/L		99
91) 1,2-Dichlorobenzene	16.014	146	1386436	51.89	ug/L		98
92) DBCP	17.072	157	121400	54.71	ug/L		84
93) Hexachlorobutadiene	17.983	225	335097	51.35	ug/L		98
94) 1,2,4-Trichlorobenzene	18.135	180	663064	49.00	ug/L		98
95) Naphthalene	18.764	128	1360689	47.72	ug/L	#	88
96) 1,2,3-Trichlorobenzene	19.146	180	408536	50.47	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\111920\
Data File : 205KN012.D
Acq On : 19 Nov 2020 1:24 pm
Operator : KKW
Sample : SCV
Misc :
ALS Vial : 11 Sample Multiplier: 1

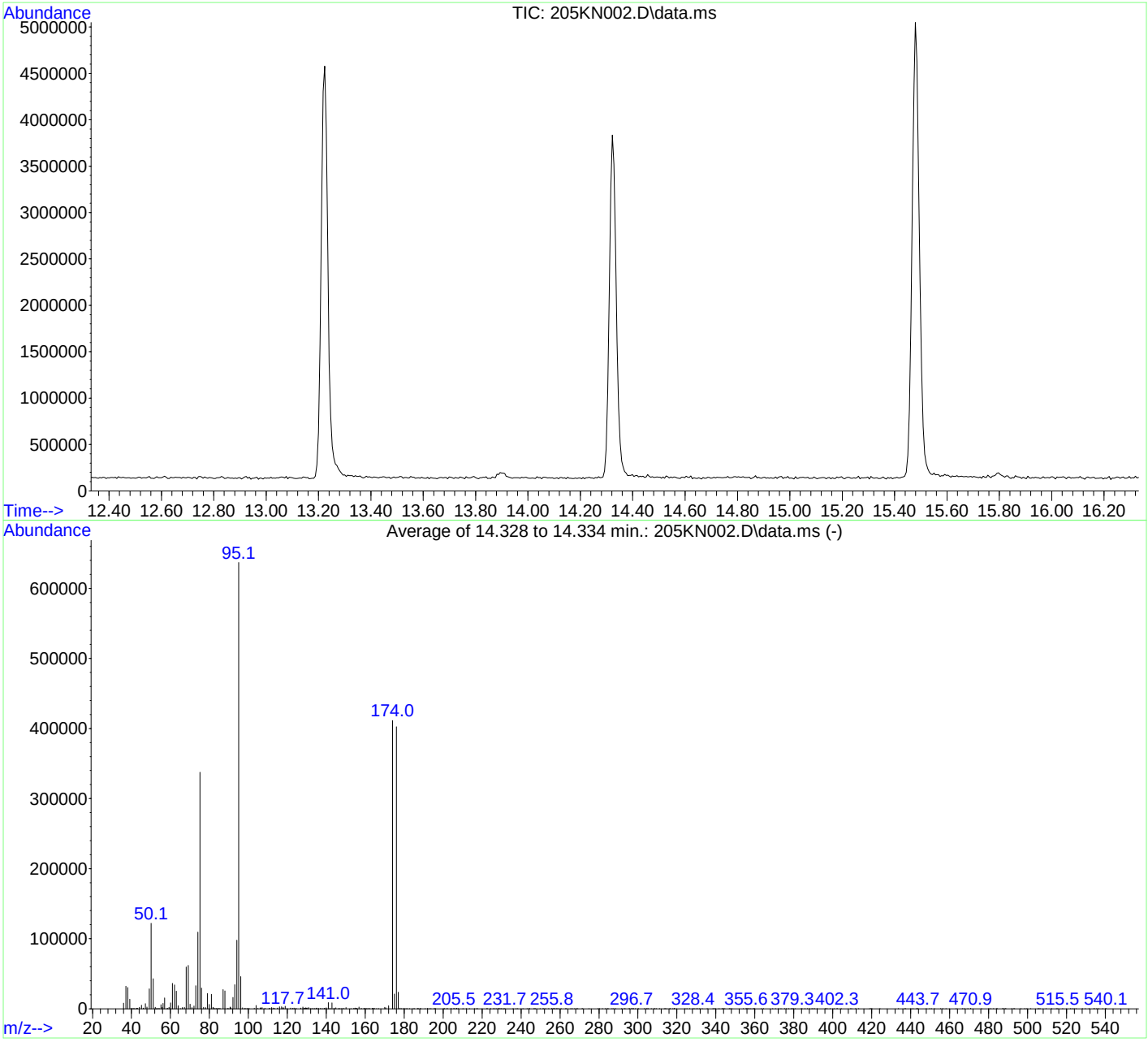
Quant Time: Nov 20 07:34:48 2020
Quant Method : C:\msdchem\1\methods\111920W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Thu Nov 19 13:02:55 2020
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\111920\
Data File : 205KN002.D
Acq On : 19 Nov 2020 8:07 am
Operator : KKW
Sample : TUN1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\111920W.M
Title : ENCO SOP VGCMS05; Element Cal 2011113
Last Update : Fri Nov 20 09:50:30 2020



Spectrum Information: Average of 14.328 to 14.334 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	154.9	636951	PASS
96	95	5	9	7.2	46014	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	64.6	411328	PASS
175	174	5	9	5.1	21111	PASS
176	174	95	105	97.9	402612	PASS
177	176	5	10	5.8	23424	PASS

ANALYSIS SEQUENCE

AA64808

Instrument: OVGCMS2

Calibration ID: 2102033

Printed: 2/5/2021 10:36:34AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA64808-TUN1	QC		1		A0I0903			
AA64808-CAL1	QC		2		A1B0650	A0K0862		
AA64808-CAL2	QC		3		A1B0651	A0K0862		
AA64808-CAL3	QC		4		A1B0652	A0K0862		
AA64808-CAL4	QC		5		A1B0653	A0K0862		
AA64808-CAL5	QC		6		A1B0654	A0K0862		
AA64808-CAL6	QC		7		A1B0655	A0K0862		
AA64808-CAL7	QC		8		A1B0656	A0K0862		
AA64808-CAL8	QC		9		A1B0657	A0K0862		
AA64808-SCV1	QC		10		A1B0663	A0K0862		

Samples Loaded By Date

Data Processed By Date

Sequence Name: C:\HPCHEM\1\SEQUENCE\212B4.S
Comment:
Operator: nmc
Data Path: C:\HPchem\1\DATA\020421\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Calibration 2102033

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212B4001	8260S	AA64808-tun1
2	Sample	2	212B4002	8260S	AA64808-cal1
3	Sample	3	212B4003	8260S	AA64808-cal2
4	Sample	4	212B4004	8260S	AA64808-cal3
5	Sample	5	212B4005	8260S	AA64808-cal4
6	Sample	6	212B4006	8260S	AA64808-cal5
7	Sample	7	212B4007	8260S	AA64808-cal6
8	Sample	8	212B4008	8260S	AA64808-cal7
9	Sample	9	212B4009	8260S	AA64808-cal8
10	Sample	10	212B4010	8260S	rinse
11	Sample	11	212B4011	8260S	rinse
12	Sample	12	212B4012	8260S	aa64808-SCV1
13	Sample	13	212B4013	8260S	1b04039-bs1
14	Sample	14	212B4014	8260S	1b04039-ms1
15	Sample	14	212B4015	8260S	1b04039-msd1
16	Sample	15	212B4016	8260S	RINSE
17	Sample	16	212B4017	8260S	RINSE
18	Sample	17	212B4018	8260S	RINSE
19	Sample	18	212B4019	8260S	1B04039-BLK1
20	Sample	19	212B4020	8260S	AE00782-09
21	Sample	20	212B4021	8260S	AE00782-01
22	Sample	21	212B4022	8260S	AE00782-02
23	Sample	22	212B4023	8260S	AE00782-03@200x
24	Sample	23	212B4024	8260S	AE00782-04@5x overdiluted, rrr@ 1x MH 2/5/21
25	Sample	24	212B4025	8260S	AE00782-05
26	Sample	25	212B4026	8260S	AE00782-06
27	Sample	26	212B4027	8260S	AE00782-07
28	Sample	27	212B4028	8260S	AE00782-08

Compound List Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
Total Cpnds : 96

PK#	Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1 I	Pentafluorobenzene(IS)	168	11.47	1.000	A	2	A	B
2	Dichlorodifluoromethane	85	5.91	0.515	LO	3	A	B
3 **	Chloromethane	50	6.38	0.556	A	2	A	B
4 *	Vinyl Chloride	62	6.57	0.573	A	2	A	B
5	Bromomethane	96	7.22	0.629	LO	2	A	B
6	Chloroethane	64	7.46	0.650	LO	2	A	R
7	Trichlorofluoromethane	101	7.72	0.673	A	2	A	B
8	Trichlorotrifluoroethane	101	8.54	0.744	A	1	A	B
9	acrolein	56	8.90	0.776	A	1	A	B
10	Acetone	43	9.25	0.807	LO	1	A	B
11 *m	1,1-Dichloroethene	96	8.50	0.741	LO	2	A	B
12	3-Chloropropene	76	9.09	0.793	LO	1	A	B
13	Acetonitrile	41	9.79	0.853	A	2	A	B
14	Iodomethane	142	8.73	0.761	QO	2	A	B
15	Carbon disulfide	76	8.62	0.752	A	1	A	B
16	Methylene Chloride	84	9.21	0.804	LO	3	A	B
17	Methyl tert-butyl ether	73	9.53	0.831	A	2	A	B
18	Acrylonitrile	53	10.11	0.882	A	2	A	B
19	T-1,2-Dichloroethene	96	9.44	0.823	A	2	A	B
20	Isopropyl Ether	45	9.90	0.863	A	1	A	B
21	C-1,2-Dichloroethene	96	10.68	0.931	A	2	A	B
22 **	1,1-Dichloroethane	63	10.11	0.882	A	3	A	B
23	Vinyl Acetate	43	10.30	0.898	A	1	A	B
24	Chloroprene	88	10.10	0.881	A	2	A	B
25	2-Butanone	72	11.17	0.974	LO	2	A	B
26	Propionitrile	54	11.45	0.999	A	0	A	B
27	2,2-Dichloropropane	77	10.80	0.942	A	1	A	B
28	Methacrylonitrile	67	11.49	1.002	A	1	A	B
29 *	Chloroform	83	10.90	0.950	A	2	A	B
30 S	Dibromofluoromethane	113	11.07	0.966	A	0	A	B
31	Dibromofluoromethane	113	11.10	0.968	A	0	A	B
32	Bromochloromethane	128	10.87	0.948	A	2	A	B
33	1,1,1-Trichloroethane	97	11.18	0.975	A	2	A	B
34	1,1-Dichloropropene	75	11.29	0.985	A	2	A	B
35	Diethyl Ether	59	8.13	0.709	LO	2	A	B
36	Methyl Acetate	74	9.39	0.819	LO	2	A	B
37	Cyclohexane	56	10.96	0.956	A	2	A	B
38 I	1,4-Difluorobenzene(IS)	114	12.02	1.000	A	2	A	B
39	Methyl Cyclohexane	55	12.07	1.005	A	2	A	B
40	Carbon Tetrachloride	117	11.15	0.928	A	2	A	B
41	1,2-Dichloroethane	62	11.67	0.971	A	2	A	B
42 m	Benzene	78	11.53	0.959	A	2	A	B
43	Isobutyl Alcohol	43	11.54	0.961	A	2	A	B
44 m	Trichloroethene	130	12.04	1.002	A	3	A	B
45 *	1,2-Dichloropropane	63	12.49	1.039	LO	2	A	B
46	Methyl Methacrylate	100	12.57	1.046	A	1	A	B
47	1,4-Dioxane	88	12.70	1.056	LO	1	A	B
48	Bromodichloromethane	83	12.50	1.040	LO	2	A	B
49	Dibromomethane	93	12.41	1.033	LO	2	A	B
50	4-Methyl-2-Pentanone	100	13.51	1.124	LO	3	A	B
51	2-Chloroethyl vinyl ether	63	12.92	1.075	A	2	A	B
52	2-Hexanone	43	14.21	1.182	LO	3	A	B
53	C-1,3-Dichloropropene	75	13.05	1.086	A	2	A	B
54 S	D8-Toluene	98	13.23	1.101	A	2	A	B
55	D8-Toluene	98	13.27	1.104	A	2	A	B
56 I	Chlorobenzene-d5(IS)	82	14.61	1.000	A	2	A	B
57 m*	Toluene	92	13.28	0.909	A	2	A	B
58	Ethyl Methacrylate	69	13.62	0.932	A	3	A	B
59	T-1,3-Dichloropropene	75	13.57	0.929	A	2	A	B
60	1,1,2-Trichloroethane	97	13.73	0.940	A	3	A	B
61	1,3-Dichloropropane	76	13.98	0.957	A	1	A	B
62	Tetrachloroethene	164	13.66	0.935	A	3	A	B
63	Dibromochloromethane	129	13.92	0.953	A	2	A	B
64	1,2-Dibromoethane	107	14.18	0.971	A	2	A	B
65 **m	Chlorobenzene	112	14.63	1.001	A	2	A	B

66		1,1,1,2-Tetrachloroethane	131	14.65	1.003	A	2	A	B
67	*	Ethylbenzene	106	14.59	0.999	A	1	A	B
68		m-xylene & p-xylene	106	14.70	1.006	A	1	A	B
69		O-Xylene	106	15.12	1.035	A	1	A	B
70	**	Bromoform	173	15.25	1.044	A	3	A	B
71		Styrene	104	15.16	1.038	LO	2	A	B
72		Isopropylbenzene	105	15.39	1.053	A	1	A	B
73		1,2,3-Trichloropropane	75	16.02	1.097	LO	1	A	B
74	**	1,1,2,2-Tetrachloroethane	83	15.82	1.083	LO	3	A	B
75	S	Bromofluorobenzene	95	15.73	1.077	A	2	A	B
76		Bromofluorobenzene	95	15.71	1.075	A	2	A	B
77		T-1,4-dichloro-2-butene	53	16.01	1.096	LO	2	A	B
78		N-Propylbenzene	91	15.79	1.081	LO	1	A	B
79	I	1,4-Dichlorobenzene-d4(IS)	152	16.97	1.000	A	2	A	B
80		Bromobenzene	156	15.89	0.936	A	2	A	B
81		1,3,5-Trimethylbenzene	105	15.95	0.940	A	1	A	B
82		2-Chlorotoluene	91	16.04	0.945	A	1	A	B
83		4-Chlorotoluene	91	16.20	0.955	A	1	A	B
84		1,2,4-Trimethylbenzene	105	16.40	0.966	A	1	A	B
85		s-Butylbenzene	105	16.53	0.974	A	1	A	B
86		tert-Butylbenzene	119	16.34	0.963	A	2	A	B
87		p-Isopropyltoluene	119	16.65	0.981	A	2	A	B
88		1,3-Dichlorobenzene	146	16.90	0.996	A	2	A	B
89		1,4-Dichlorobenzene	146	17.00	1.001	A	2	A	B
90		1,2-Dichlorobenzene	146	17.57	1.035	A	2	A	B
91		N-Butylbenzene	91	17.17	1.012	A	2	A	B
92		DBCP	75	18.68	1.100	LO	2	A	B
93		Naphthalene	128	20.67	1.218	QO	0	A	B
94		1,2,4-Trichlorobenzene	180	19.96	1.176	A	2	A	B
95		Hexachlorobutadiene	225	19.82	1.168	A	2	A	B
96		1,2,3-Trichlorobenzene	180	21.11	1.244	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

020421.M Fri Feb 05 09:53:19 2021

Compound Name Duplication Report

Quant Method: C:\HPCHEM\1\METHODS\020421.M
Number of Compounds: 96

30 Dibromofluoromethane = 31 Dibromofluoromethane
54 D8-Toluene = 55 D8-Toluene
75 Bromofluorobenzene = 76 Bromofluorobenzene

3 Duplicate Names Detected!!!

Response Factor Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration

Calibration Files
1 =212B4002.D 5 =212B4004.D 20 =212B4006.D
50 =212B4007.D 100 =212B4009.D 10 =212B4005.D

		Compound	1	5	20	50	100	10	Avg	%RSD
1)	i	Pentafluorobenzene(IS	----------	ISTD	----------					
2)		Dichlorodifluoromet	1.337	0.945	0.938	0.994	1.048	0.890	1.054	14.96
3)	**	Chloromethane	1.172	0.862	0.861	0.952	1.145	0.830	1.003	14.22
4)	*	Vinyl Chloride	1.037	0.814	0.837	0.888	0.933	0.805	0.913	10.80
5)		Bromomethane	0.936	0.801	0.363	0.340		0.464	0.602	49.51
6)		Chloroethane	0.687	0.490	0.466	0.456	0.439	0.439	0.505	18.44
7)		Trichlorofluorometh	0.929	0.817	0.874	0.934	0.963	0.831	0.915	7.62
8)		Trichlorotrifluoroe	0.581	0.479	0.520	0.538	0.559	0.480	0.525	7.84
9)		acrolein	0.089	0.080	0.075	0.085	0.089	0.069	0.083#	9.33
10)		Acetone	0.184	0.107	0.102	0.111	0.109	0.102	0.122	23.55
11)	*m	1,1-Dichloroethene	0.705	0.471	0.477	0.503	0.534	0.441	0.529	15.50
12)		3-Chloropropene	0.684	0.381	0.346	0.355	0.373	0.337	0.413	28.12
13)		Acetonitrile	0.058	0.040	0.042	0.053	0.054	0.042	0.049#	14.13
14)		Iodomethane	0.017	0.175	0.577	0.675	0.725	0.415	0.420	71.26
15)		Carbon disulfide	2.351	1.877	1.899	1.916	1.931	1.872	2.005	9.41
16)		Methylene Chloride	0.975	0.603	0.562	0.576	0.599	0.545	0.648	21.87
17)		Methyl tert-butyl e	1.509	1.239	1.215	1.321	1.343	1.138	1.313	8.69
18)		Acrylonitrile	0.324	0.268	0.251	0.262	0.257	0.236	0.268	9.67
19)		T-1,2-Dichloroethen	0.770	0.552	0.545	0.563	0.601	0.510	0.593	13.27
20)		Isopropyl Ether	2.916	2.528	2.533	2.652	2.744	2.388	2.669	6.61
21)		C-1,2-Dichloroethen	0.737	0.586	0.595	0.623	0.666	0.562	0.640	9.17
22)	**	1,1-Dichloroethane	1.169	1.147	1.121	1.138	1.175	1.049	1.147	4.09
23)		Vinyl Acetate	1.525	1.427	1.394	1.467	1.363	1.352	1.442	5.38
24)		Chloroprene	0.611	0.507	0.515	0.543	0.545	0.504	0.541	6.40
25)		2-Butanone	0.052	0.045	0.035	0.039	0.038	0.037	0.044#	21.34
26)		Propionitrile	0.070	0.048	0.046	0.054	0.052	0.048	0.054#	14.26
27)		2,2-Dichloropropane	1.193	0.802	0.856	0.874	0.910	0.797	0.923	14.30
28)		Methacrylonitrile	0.235	0.170	0.160	0.174	0.168	0.158	0.180	14.21
29)	*	Chloroform	1.099	0.999	1.045	1.067	1.114	0.996	1.084	7.07
30)	s	Dibromofluoromethan	0.478	0.520	0.527	0.519	0.556	0.513	0.516	5.23
31)		Dibromofluoromethan	0.478	0.520	0.527	0.519	0.556	0.513	0.516	5.23
32)		Bromochloromethane	0.348	0.286	0.284	0.304	0.319	0.266	0.305	8.49
33)		1,1,1-Trichloroetha	0.913	0.766	0.769	0.797	0.837	0.725	0.813	7.45
34)		1,1-Dichloropropene	1.012	0.785	0.777	0.822	0.868	0.725	0.845	10.46
35)		Diethyl Ether	0.674	0.459	0.436	0.476	0.494	0.423	0.501	15.81
36)		Methyl Acetate	0.138	0.074	0.062	0.068	0.069	0.058	0.082#	34.75
37)		Cyclohexane	1.015	0.921	0.930	0.964	1.015	0.867	0.959	5.80
38)	i	1,4-Difluorobenzene(I	----------	ISTD	----------					
39)		Methyl Cyclohexane	0.534	0.378	0.372	0.385	0.405	0.340	0.406	14.32
40)		Carbon Tetrachlorid	0.502	0.436	0.435	0.446	0.460	0.405	0.452	6.35
41)		1,2-Dichloroethane	0.504	0.409	0.387	0.404	0.413	0.367	0.424	10.84
42)	m	Benzene	1.483	1.186	1.154	1.155	1.161	1.079	1.216	10.49
43)		Isobutyl Alcohol	0.025	0.024	0.020	0.021	0.020	0.019	0.022#	13.07
44)	m	Trichloroethene	0.366	0.314	0.320	0.328	0.346	0.289	0.330	7.18
45)	*	1,2-Dichloropropane	0.542	0.362	0.357	0.364	0.376	0.331	0.397	17.50
46)		Methyl Methacrylate	0.058	0.066	0.063	0.066	0.066	0.061	0.065#	6.56
47)		1,4-Dioxane	0.002	0.001	0.001	0.001	0.001	0.001	0.001#	29.96
48)		Bromodichloromethan	0.637	0.451	0.436	0.448	0.451	0.410	0.477	15.13
49)		Dibromomethane	0.253	0.186	0.169	0.186	0.190	0.159	0.192	14.61
50)		4-Methyl-2-Pentanon	0.046	0.031	0.026	0.029	0.028	0.026	0.032#	22.73
51)		2-Chloroethyl vinyl		0.010	0.007	0.014	0.015	0.005	0.011#	42.49
52)		2-Hexanone	0.228	0.165	0.146	0.162	0.157	0.141	0.171	17.59
53)		C-1,3-Dichloroprope	0.731	0.586	0.555	0.588	0.600	0.521	0.605	10.45
54)	s	D8-Toluene	0.925	0.922	0.864	0.850	0.881	0.848	0.883	3.57
55)		D8-Toluene	0.925	0.922	0.864	0.850	0.881	0.848	0.883	3.57
56)	i	Chlorobenzene-d5(IS)	----------	ISTD	----------					

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration

Calibration Files
1 =212B4002.D 5 =212B4004.D 20 =212B4006.D
50 =212B4007.D 100 =212B4009.D 10 =212B4005.D

		Compound	1	5	20	50	100	10	Avg	%RSD
57)	m*	Toluene	1.682	1.389	1.354	1.404	1.450	1.284	1.447	8.52
58)		Ethyl Methacrylate	0.812	0.657	0.638	0.700	0.680	0.623	0.703	10.66
59)		T-1,3-Dichloroprope	1.089	0.899	0.864	0.920	0.940	0.831	0.935	8.55
60)		1,1,2-Trichloroetha	0.577	0.446	0.427	0.454	0.459	0.415	0.469	10.87
61)		1,3-Dichloropropane	1.086	0.921	0.904	0.952	0.958	0.858	0.962	7.57
62)		Tetrachloroethene	0.417	0.434	0.430	0.438	0.454	0.406	0.432	3.96
63)		Dibromochloromethan	0.709	0.618	0.614	0.660	0.670	0.567	0.648	7.06
64)		1,2-Dibromoethane	0.535	0.447	0.456	0.501	0.515	0.424	0.489	8.38
65)	**m	Chlorobenzene	1.802	1.552	1.478	1.510	1.552	1.377	1.568	8.39
66)		1,1,1,2-Tetrachloro	0.655	0.579	0.591	0.610	0.631	0.550	0.611	5.70
67)	*	Ethylbenzene	0.951	0.780	0.765	0.776	0.818	0.700	0.811	9.37
68)		m-xylene & p-xylene	1.183	0.957	0.897	0.904	0.934	0.829	0.967	11.85
69)		O-Xylene	1.223	0.955	0.905	0.934	0.979	0.833	0.987	12.09
70)	**	Bromoform	0.320	0.297	0.288	0.319	0.321	0.270	0.308	6.90
71)		Styrene	2.291	1.719	1.579	1.632	1.618	1.440	1.749	15.58
72)		Isopropylbenzene	2.967	2.373	2.258	2.332	2.405	2.076	2.441	11.18
73)		1,2,3-Trichloroprop	0.988	0.598	0.491	0.568	0.566	0.507	0.631	25.67
74)	**	1,1,2,2-Tetrachloro	0.723	0.500	0.437	0.478	0.475	0.423	0.512	18.75
75)	s	Bromofluorobenzene	0.778	0.757	0.697	0.714	0.710	0.686	0.723	4.53
76)		Bromofluorobenzene	0.778	0.757	0.697	0.714	0.710	0.686	0.723	4.53
77)		T-1,4-dichloro-2-bu	0.339	0.104	0.104	0.131	0.130	0.085	0.145	55.65
78)		N-Propylbenzene	3.694	2.884	2.551	2.656	2.794	2.392	2.899	15.11
79)	i	1,4-Dichlorobenzene-d	----------	ISTD	----------					
80)		Bromobenzene	0.863	0.784	0.819	0.866	0.897	0.767	0.845	6.05
81)		1,3,5-Trimethylbenz	3.089	2.560	2.444	2.496	2.606	2.294	2.612	9.10
82)		2-Chlorotoluene	2.627	2.305	2.282	2.333	2.419	2.140	2.377	6.13
83)		4-Chlorotoluene	2.769	2.390	2.350	2.438	2.562	2.166	2.487	7.61
84)		1,2,4-Trimethylbenz	3.180	2.601	2.518	2.534	2.533	2.315	2.646	9.75
85)		s-Butylbenzene	3.713	3.050	3.004	3.111	3.289	2.791	3.202	8.67
86)		tert-Butylbenzene	2.433	2.208	2.216	2.271	2.366	2.037	2.291	5.88
87)		p-Isopropyltoluene	3.631	2.604	2.563	2.618	2.707	2.389	2.779	13.63
88)		1,3-Dichlorobenzene	1.699	1.425	1.378	1.460	1.538	1.282	1.488	8.73
89)		1,4-Dichlorobenzene	1.731	1.435	1.375	1.434	1.520	1.279	1.493	9.61
90)		1,2-Dichlorobenzene	1.411	1.202	1.195	1.280	1.341	1.094	1.275	8.28
91)		N-Butylbenzene	3.007	2.251	2.181	2.251	2.355	1.997	2.373	12.66
92)		DBCP	0.115	0.089	0.075	0.085	0.085	0.078	0.094#	22.35
93)		Naphthalene	0.654	0.570	0.580	0.665	0.781	0.491	0.653	15.45
94)		1,2,4-Trichlorobenz	0.582	0.530	0.505	0.547	0.590	0.468	0.549	8.35
95)		Hexachlorobutadiene	0.339	0.316	0.315	0.330	0.356	0.286	0.328	7.33
96)		1,2,3-Trichlorobenz	0.341	0.355	0.327	0.362	0.409	0.291	0.356	10.85

(#) = Out of Range ### Number of calibration levels exceeded format ###

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☑ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

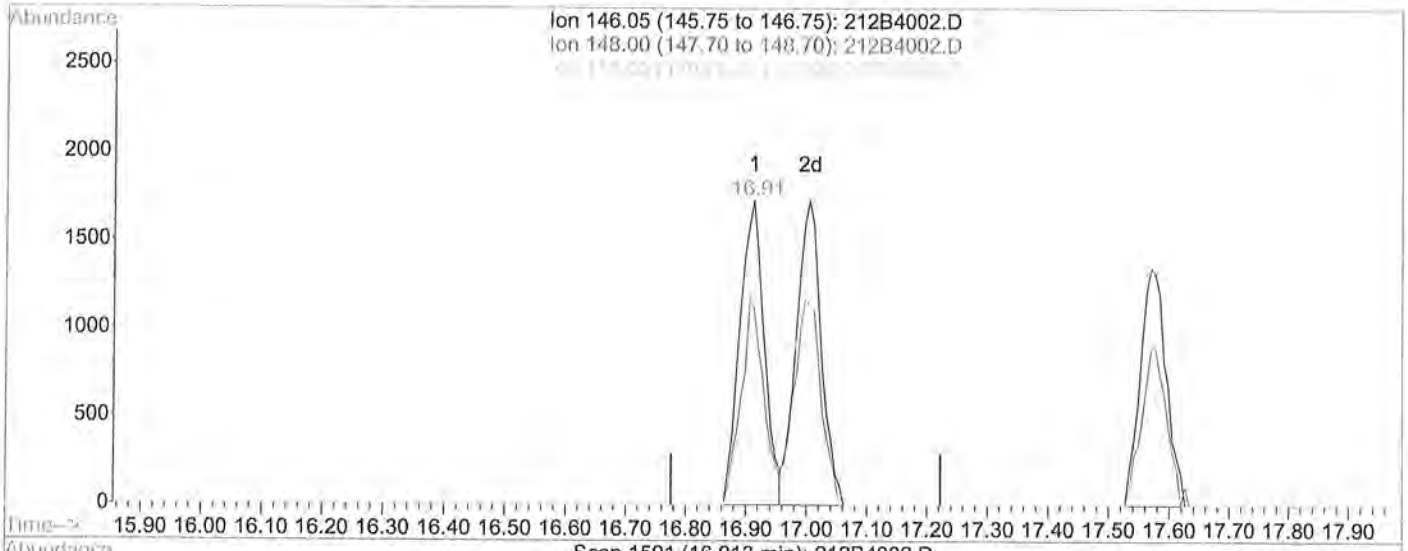
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

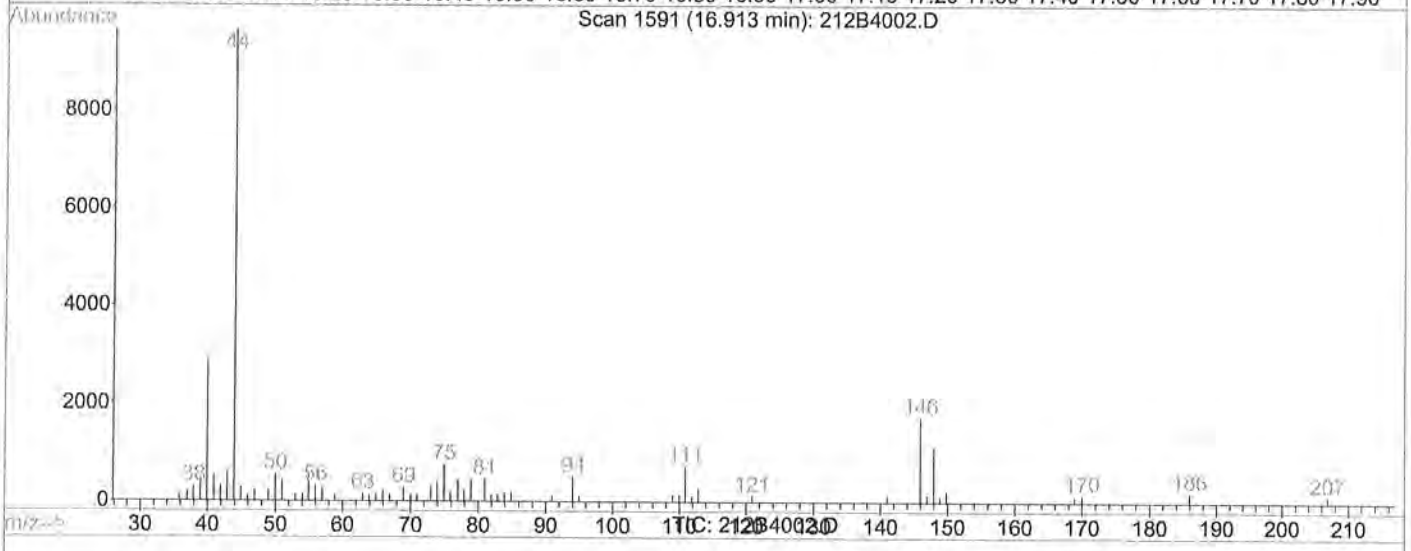
Instrument ID:	OVGCMS2
Sequence/Batch ID:	AA64808
Data File Prefix:	212B
Date and Time Range of MIs:	2/4/21 - 2/5/21 2/4/21 8:38-12:22 2/5/21 9:39-9:40
Reviewer Print Name:	Walosh Kara Watson
Reviewer Signature:	
Date of Review:	02/05/21

Quantitation Report (Qedit)

Data File : C:\HPchem\1\DATA\020421\212B4002.D Vial: 2
Acq On : 4 Feb 2021 8:28 am Operator: nmc
Sample : AA64808-cal1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:58 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration





(89) 1,4-Dichlorobenzene

16.91min 1.11ug/kg

response 4834

Ion	Exp%	Act%
146.05	100	100
148.00	64.60	64.11
111.00	43.70	41.87
0.00	0.00	0.00

Select One:

[x] Original Integration [ ] Manual Integration

Select reason for manual integration:

[x] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

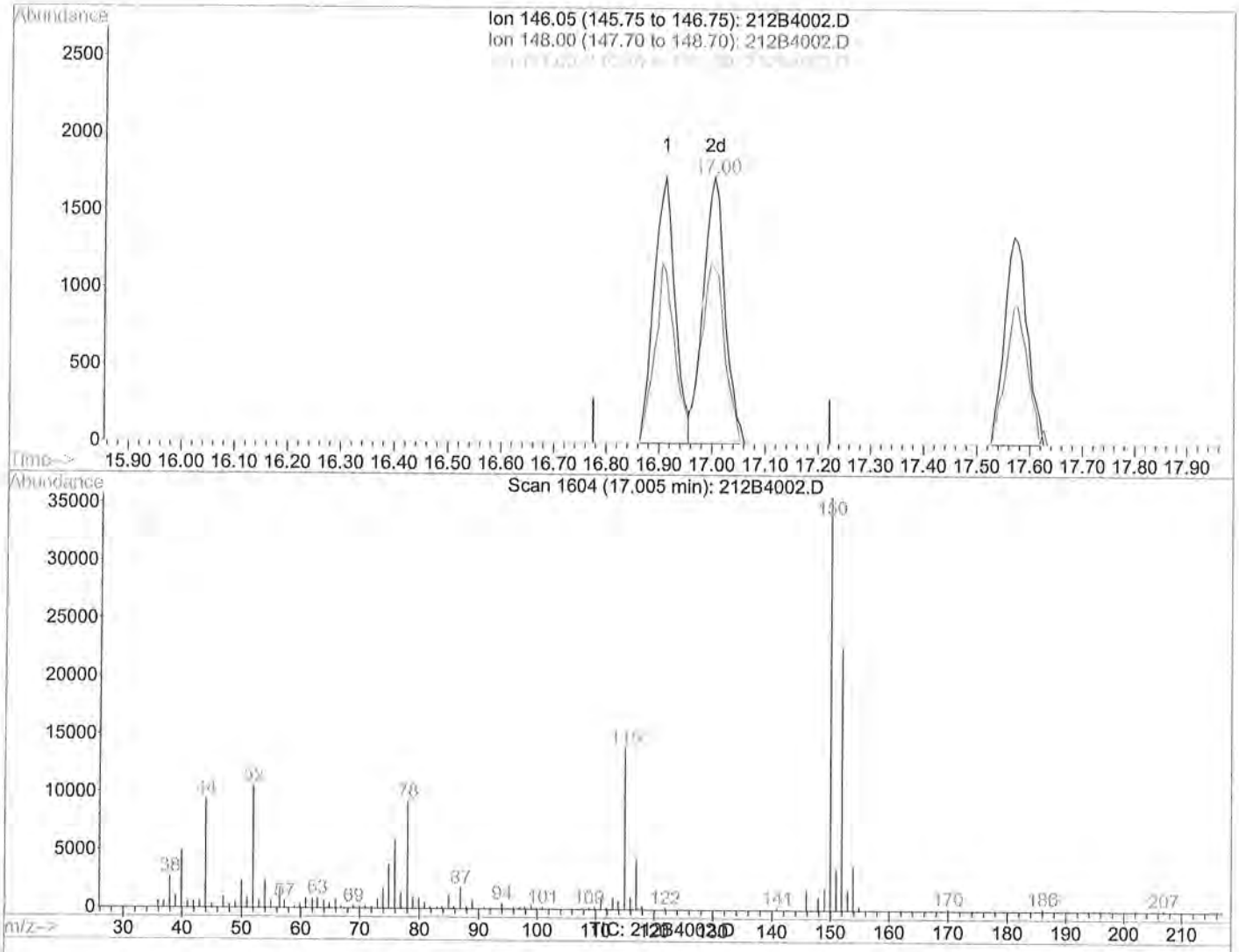
Review by/Date KH 2/4/21

Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPchem\1\DATA\020421\212B4002.D Vial: 2
Acq On : 4 Feb 2021 8:28 am Operator: nmc
Sample : AA64808-cal1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:58 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration



(89) 1,4-Dichlorobenzene

17.00min 1.13ug/kg m

response 4925

Ion	Exp%	Act%
146.05	100	100
148.00	64.60	62.92
111.00	43.70	41.10
0.00	0.00	0.00

Select One:

[ ] Original Integration [x] Manual Integration

Select reason for manual integration:

[x] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

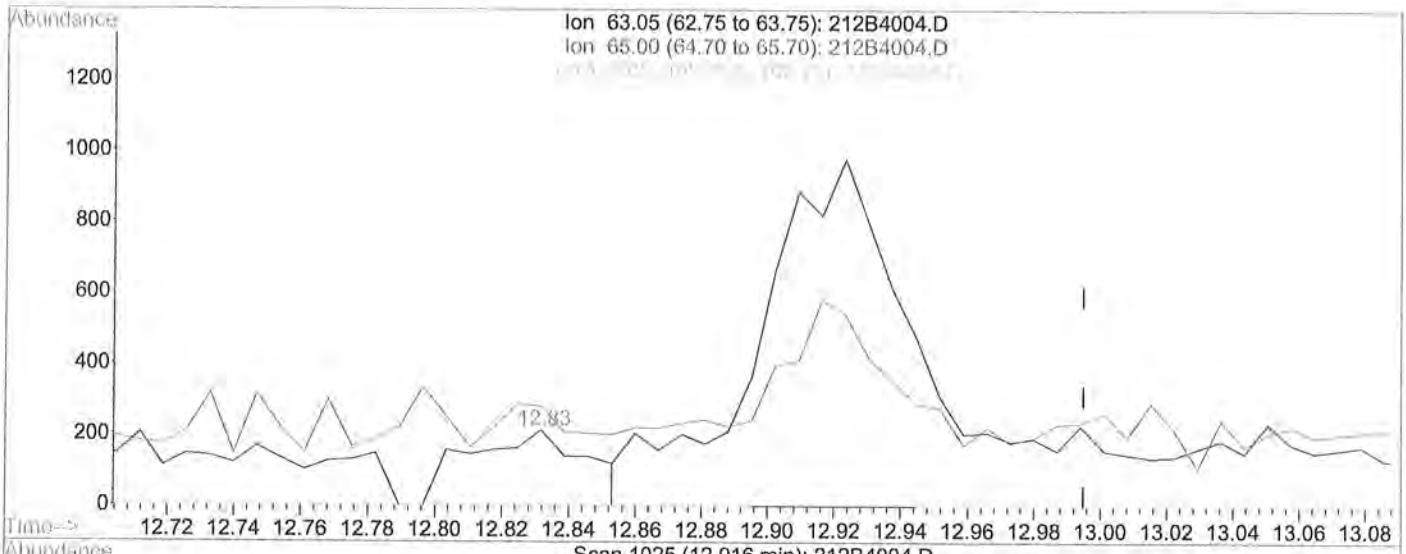
Review by/Date KH 2/4/21

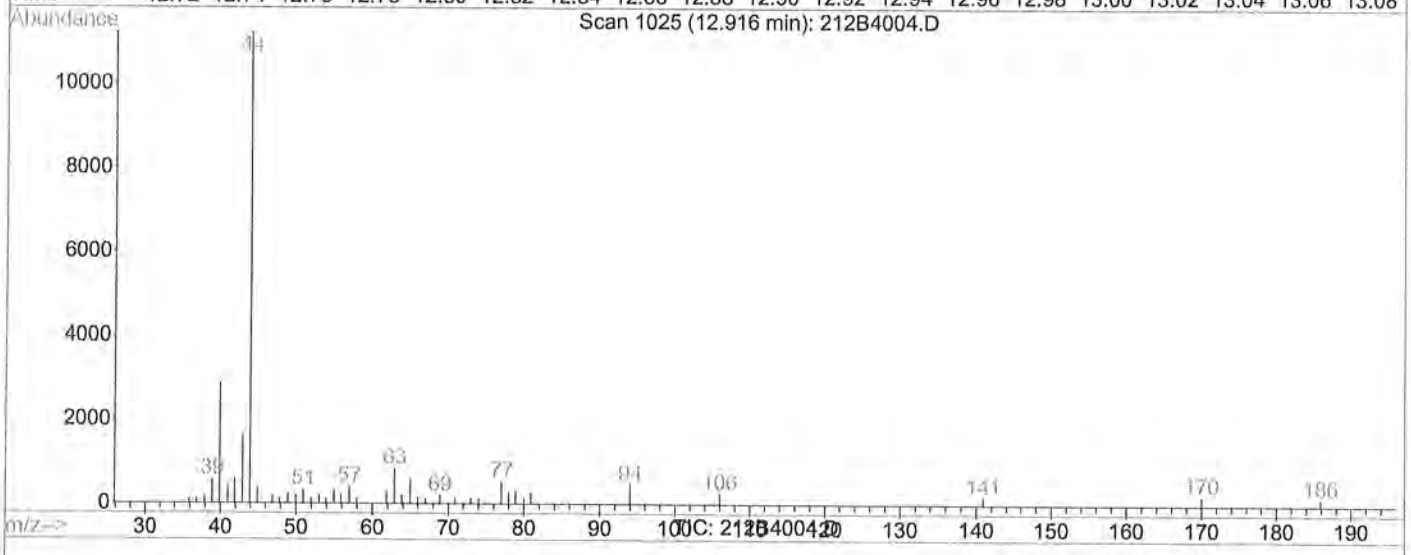
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4004.D Vial: 4
Acq On : 4 Feb 2021 9:26 am Operator: nmc
Sample : AA64808-cal3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:48 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration





(51) 2-Chloroethyl vinyl ether

12.83min 44.06ug/kg

response 519

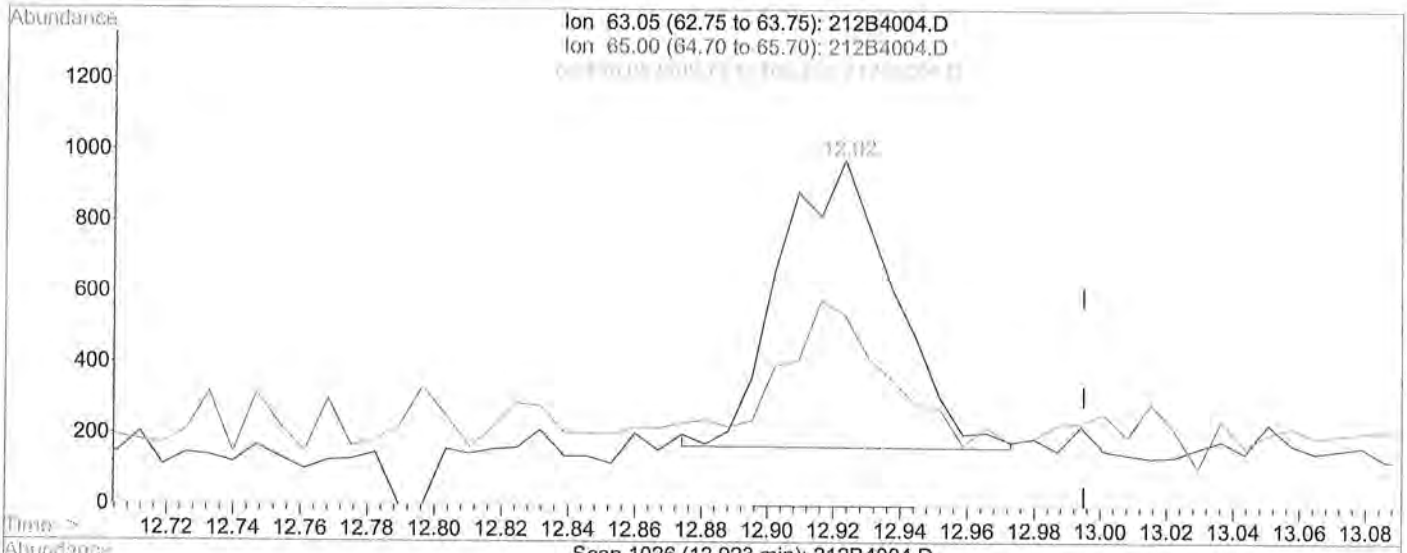
Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

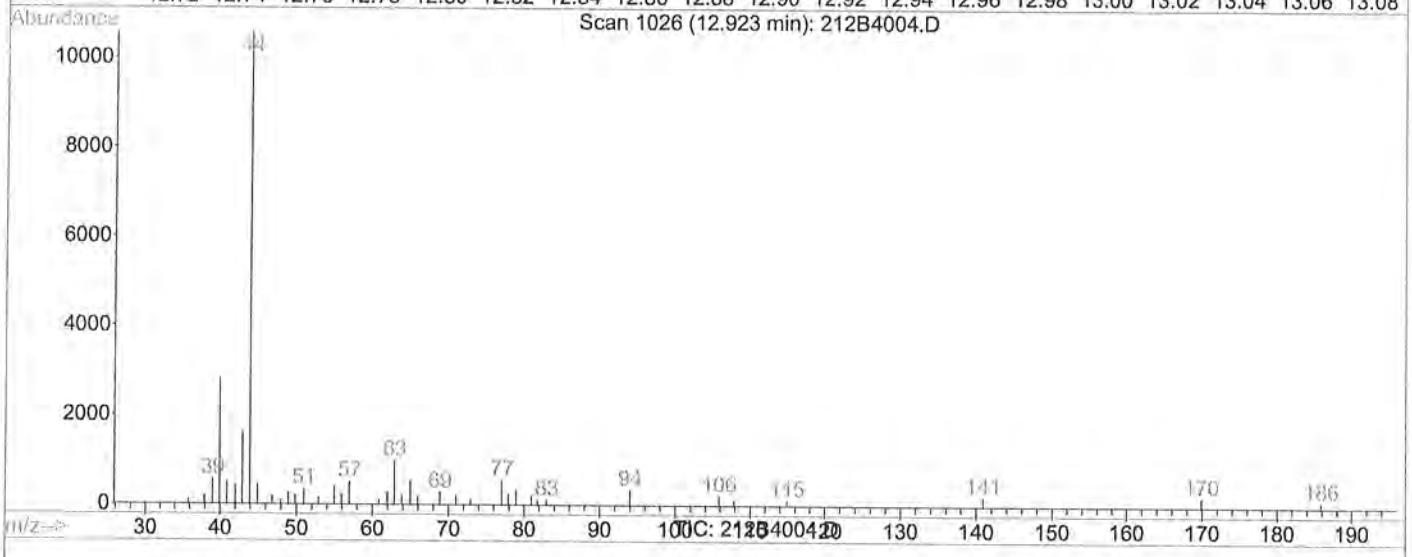
Select One:
[✓] Original Integration [ ] Manual Integration
Select reason for manual integration:
[✓] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KS 2/4/21
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4004.D Vial: 4
Acq On : 4 Feb 2021 9:26 am Operator: nmc
Sample : AA64808-cal3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:51 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration





(51) 2-Chloroethyl vinyl ether

12.92min 163.86ug/kg m

response 1930

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

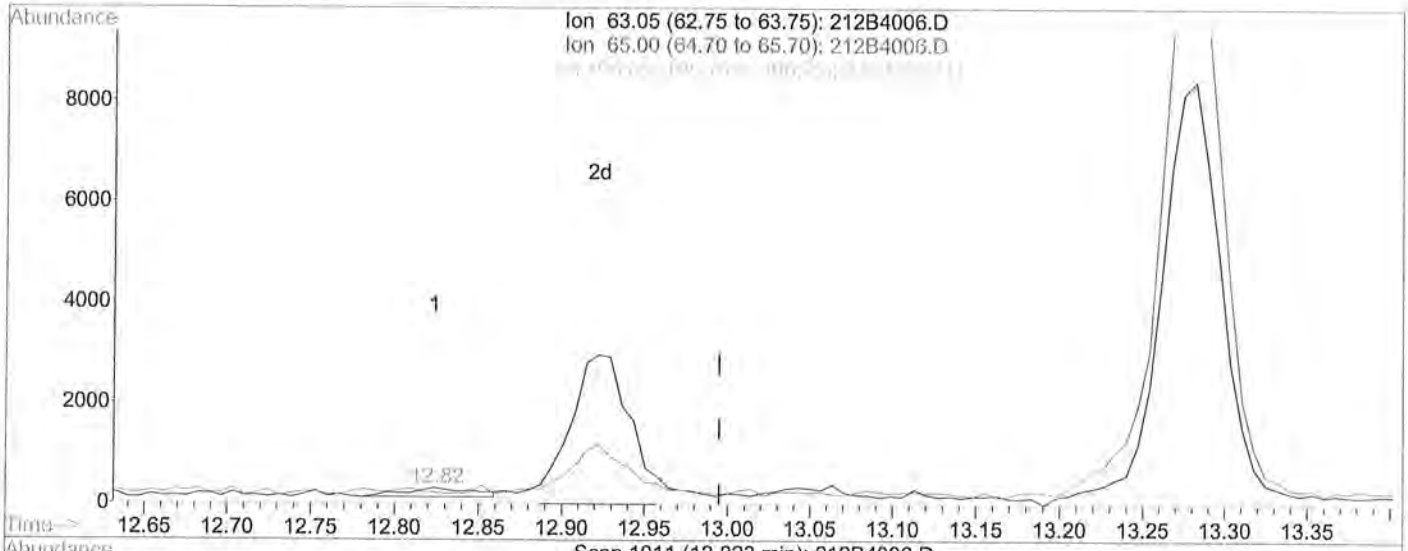
Review by/Date KH 2/4/21

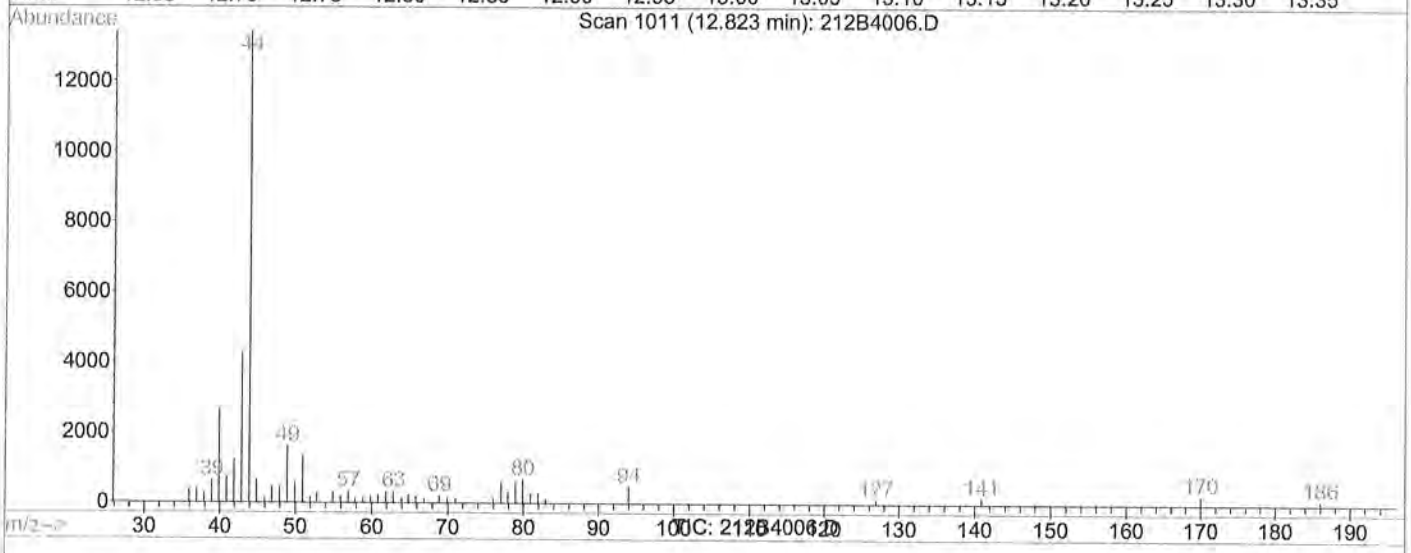
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4006.D Vial: 6
Acq On : 4 Feb 2021 10:23 am Operator: nmc
Sample : AA64808-cal5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 10:46 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration





(51) 2-Chloroethyl vinyl ether

12.82min 36.96ug/kg

response 521

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

Select One:

[•] Original Integration [ ] Manual Integration

Select reason for manual integration:

[•] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

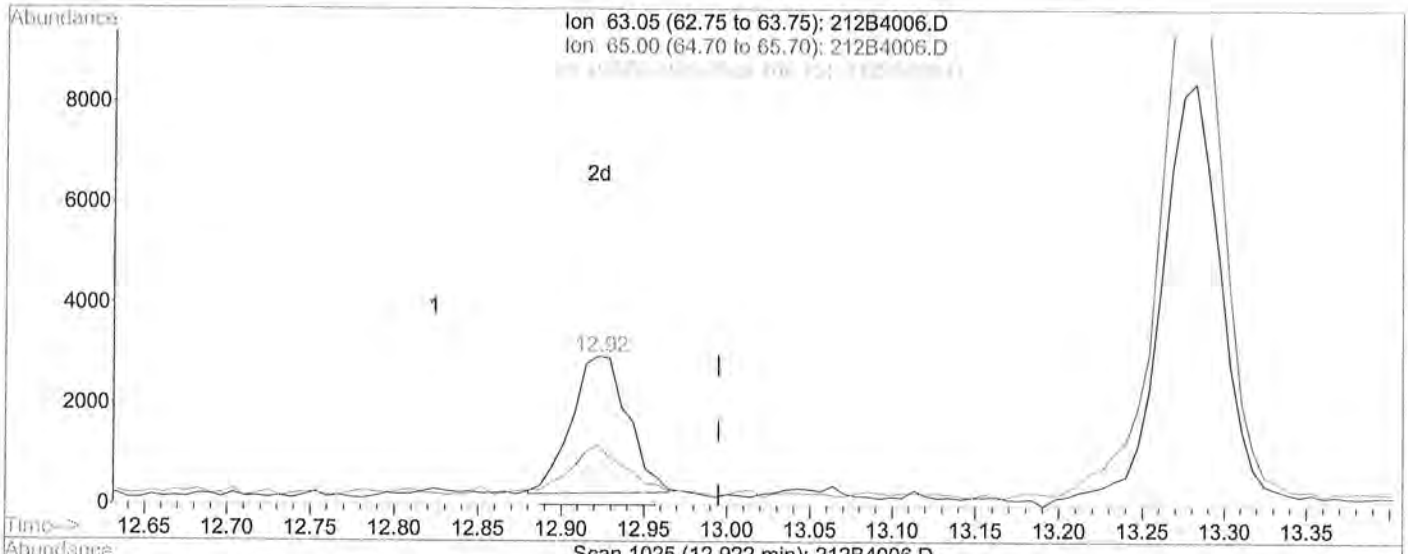
Review by/Date KH 2/4/21

Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4006.D Vial: 6
Acq On : 4 Feb 2021 10:23 am Operator: nmc
Sample : AA64808-cal5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration



(51) 2-Chloroethyl vinyl ether

12.92min 455.80ug/kg m

response 6425

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

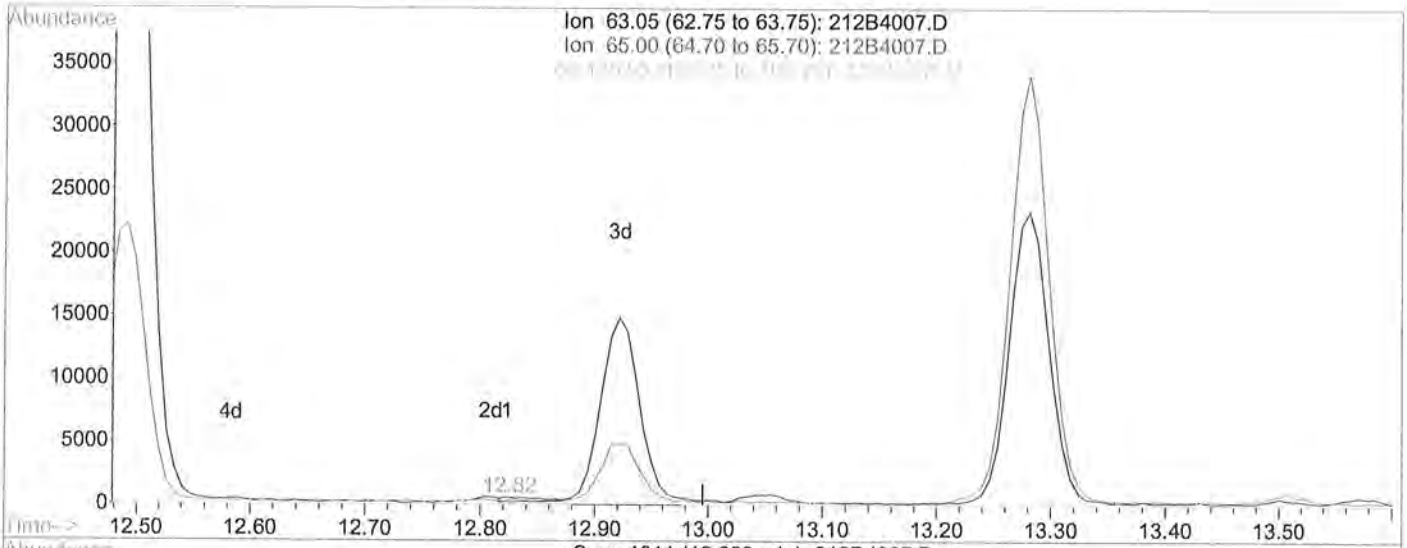
Review by/Date KH 2/4/21

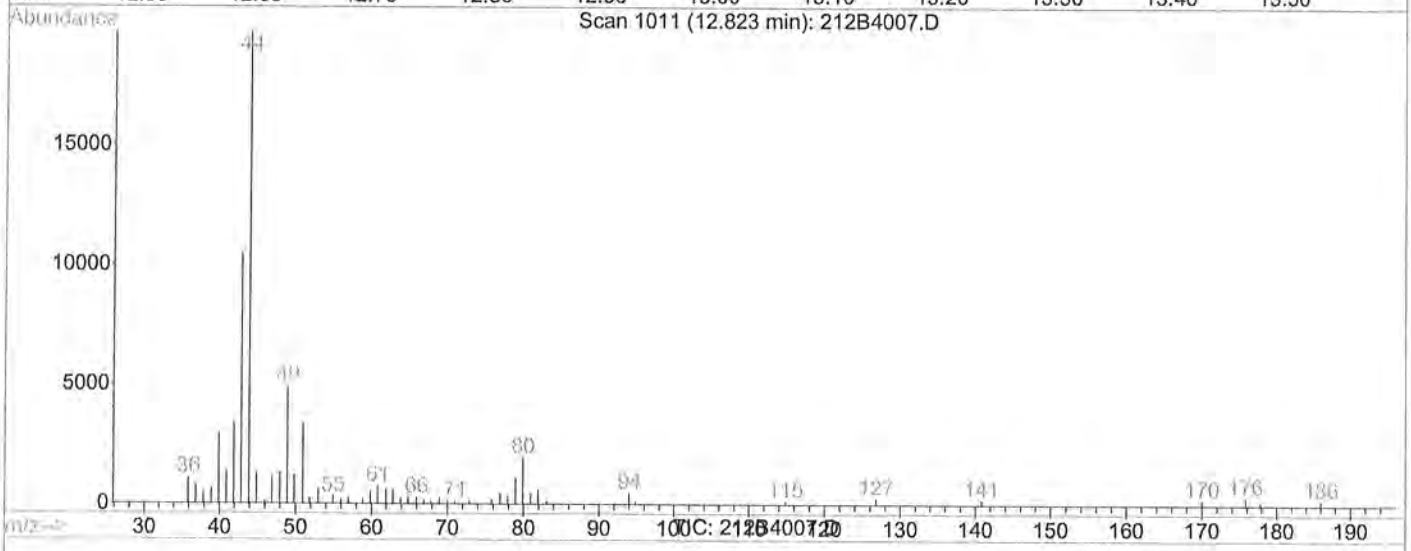
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4007.D Vial: 7
Acq On : 4 Feb 2021 10:52 am Operator: nmc
Sample : AA64808-cal6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:14 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration





(51) 2-Chloroethyl vinyl ether

12.82min 57.81ug/kg

response 888

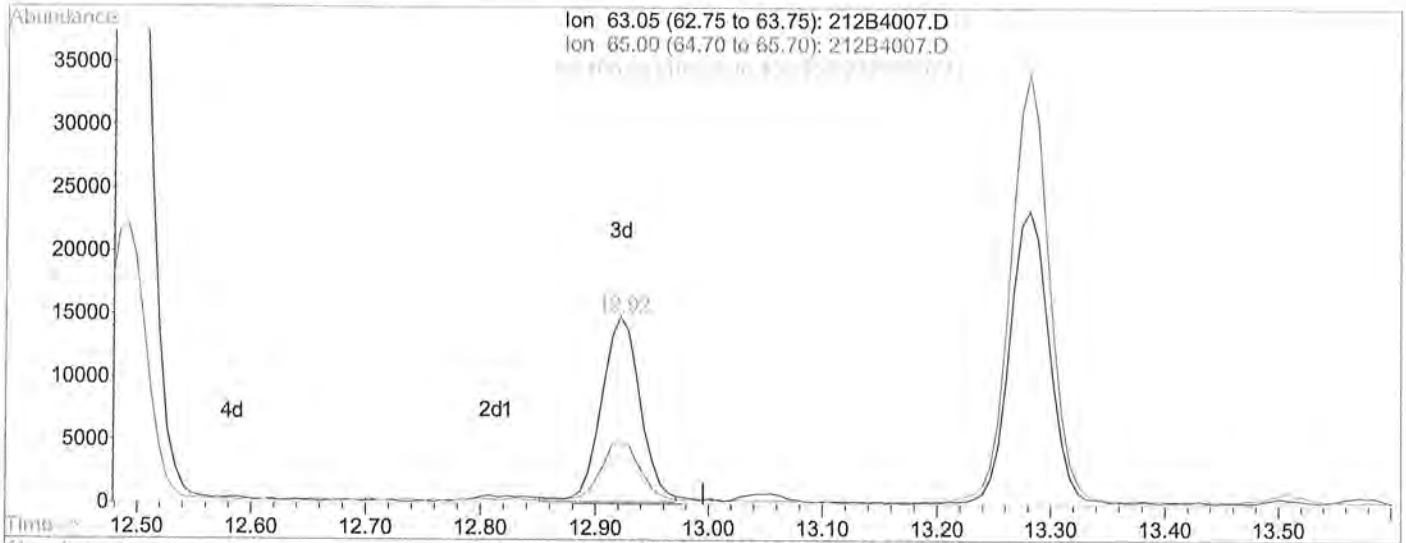
Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

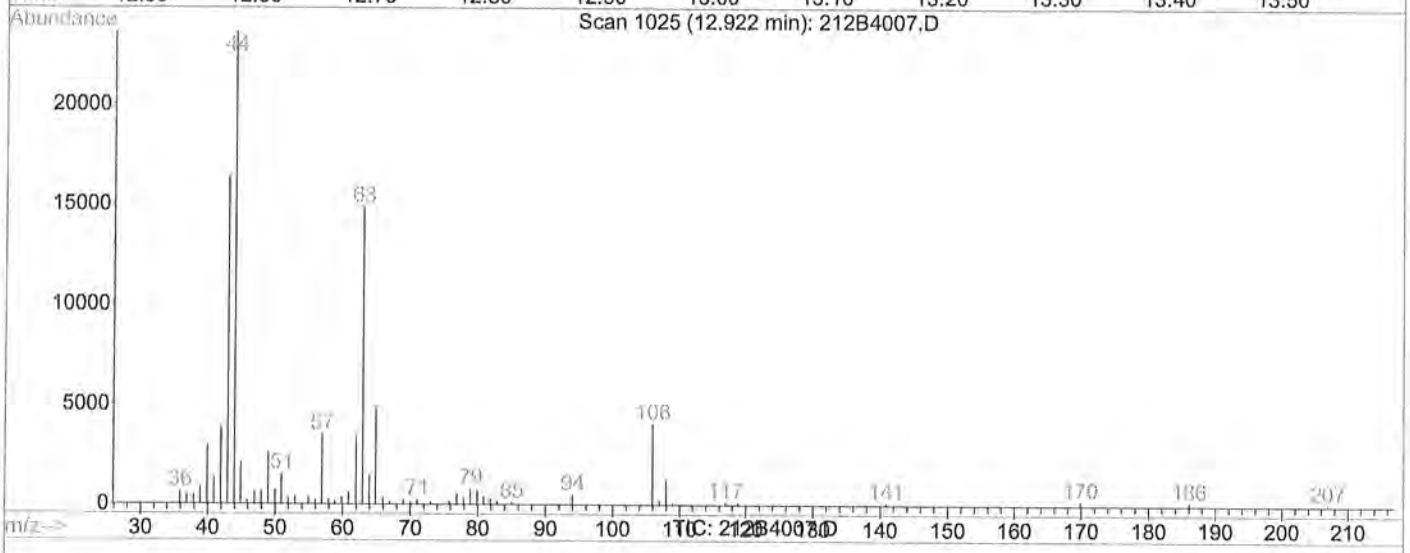
Select One:
[✓] Original Integration [ ] Manual Integration
Select reason for manual integration:
[✓] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KH 2/9/21
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4007.D Vial: 7
Acq On : 4 Feb 2021 10:52 am Operator: nmc
Sample : AA64808-cal6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration





(51) 2-Chloroethyl vinyl ether

12.92min 2277.91ug/kg m

response 34992

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

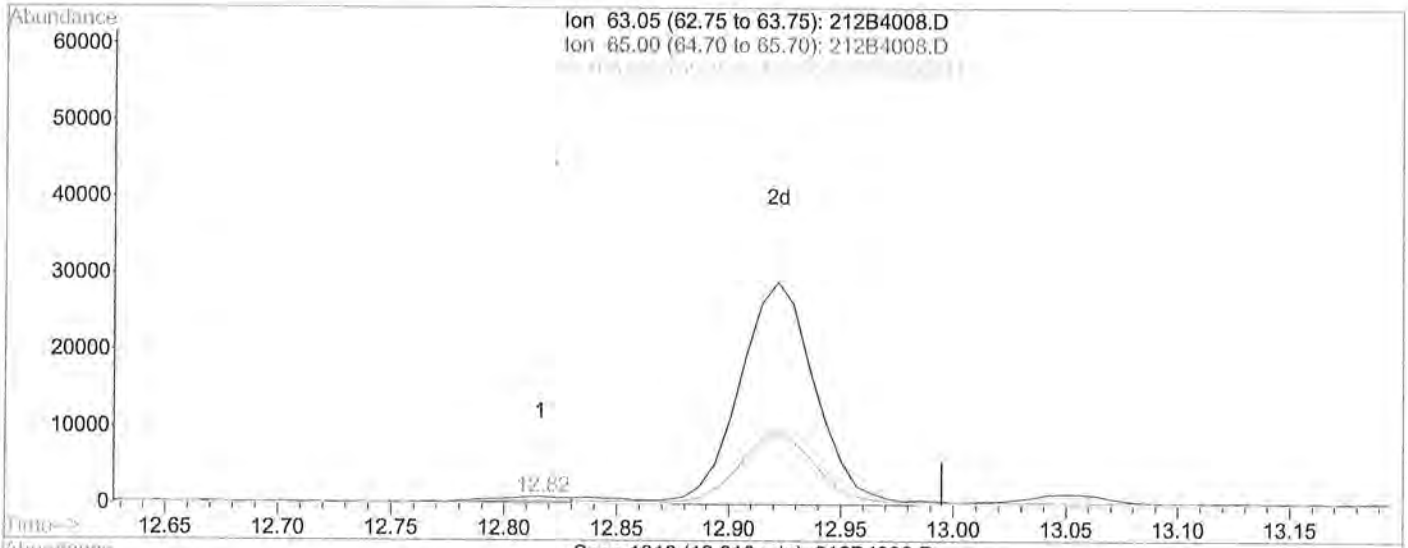
Review by/Date KH 2/4/21

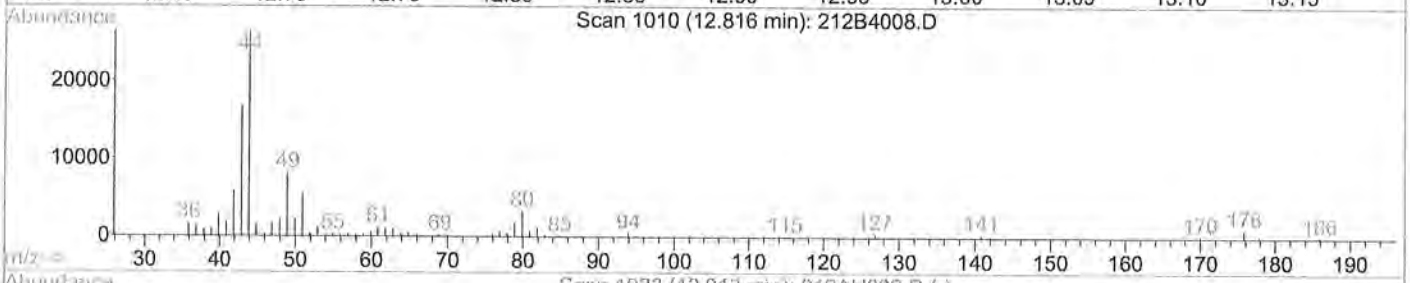
Review by/Date:

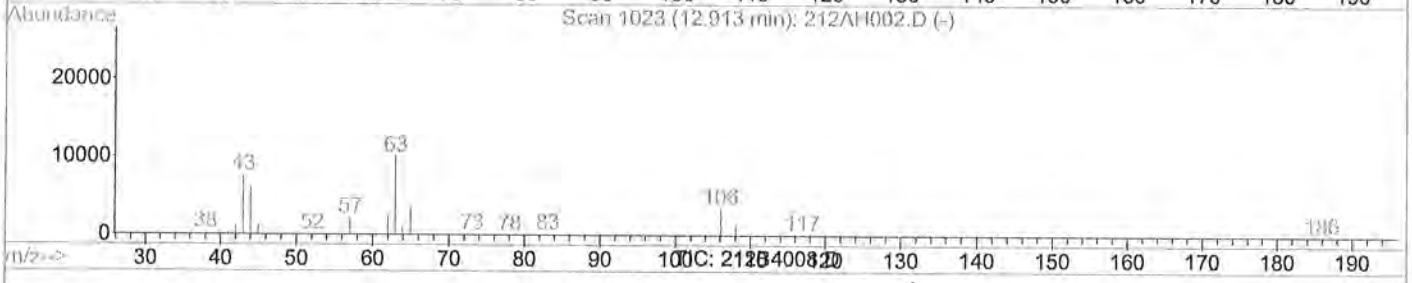
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4008.D Vial: 8
Acq On : 4 Feb 2021 11:20 am Operator: nmc
Sample : AA64808-cal7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:43 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration







(51) 2-Chloroethyl vinyl ether

12.82min 114.27ug/kg

response 1739

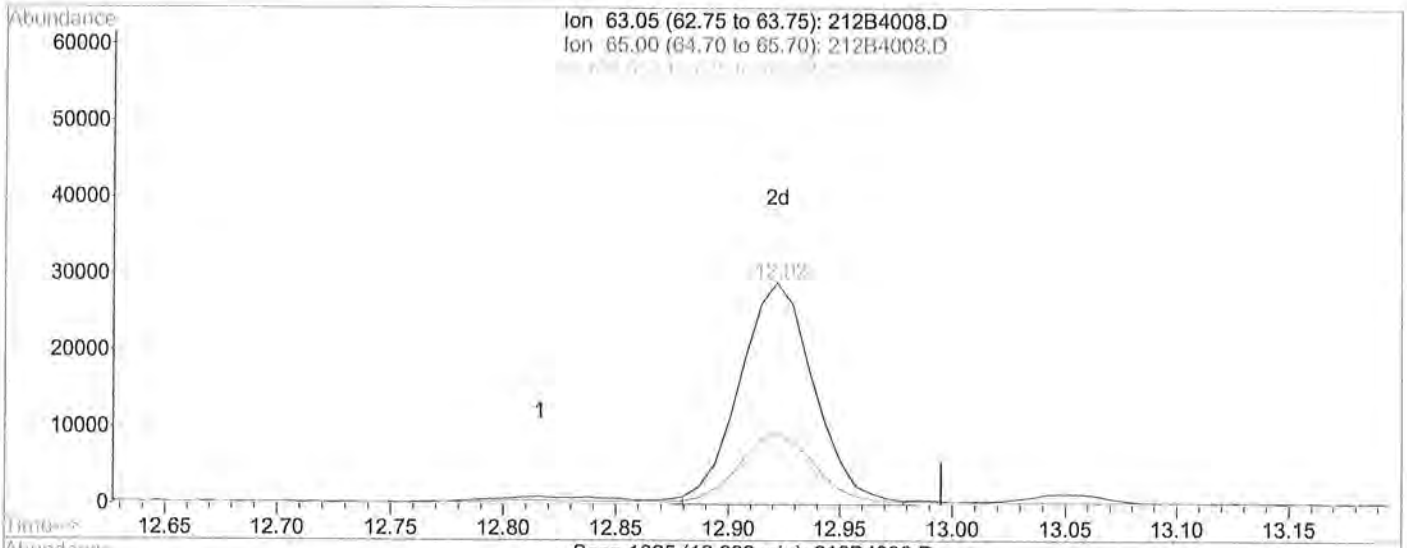
Ion	Exp%	Act%
63.05	100	100
65.00	0.00	42.27#
106.05	0.00	0.00
0.00	0.00	0.00

Select One:
[✓] Original Integration [ ] Manual Integration
Select reason for manual integration:
[✓] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KLT 2/4/21
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4008.D Vial: 8
Acq On : 4 Feb 2021 11:20 am Operator: nmc
Sample : AA64808-cal7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:45 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration



(51) 2-Chloroethyl vinyl ether

12.92min 4426.23ug/kg m

response 67360

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	1.09
106.05	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found 2/4/21

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

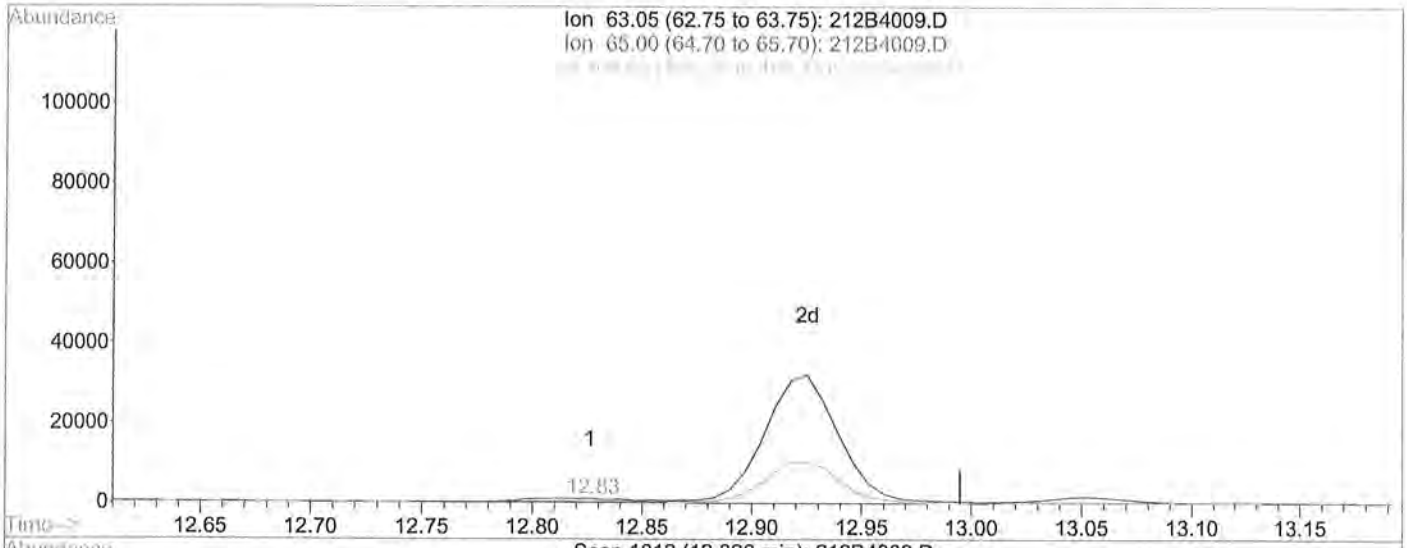
Review by/Date 2/4/21

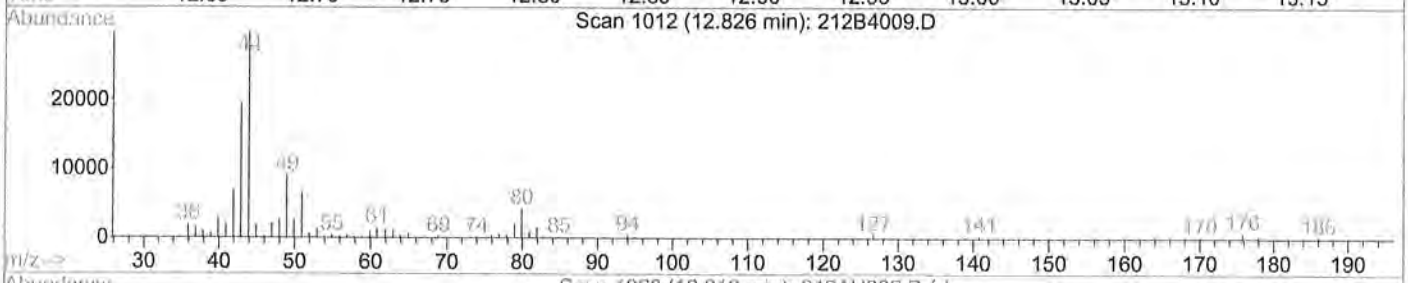
Review by/Date:

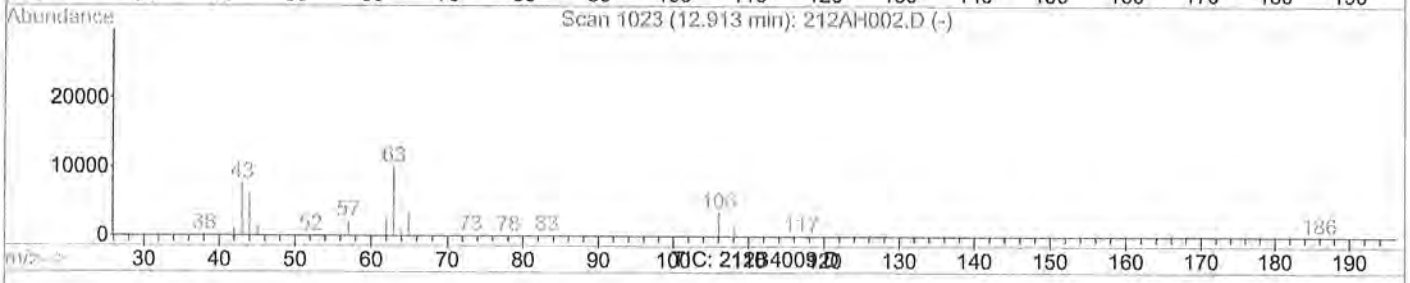
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4009.D Vial: 9
Acq On : 4 Feb 2021 11:49 am Operator: nmc
Sample : AA64808-cal8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 12:12 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration







(51) 2-Chloroethyl vinyl ether

12.83min 227.21ug/kg

response 3461

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

Select One:

[✓] Original Integration [ ] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

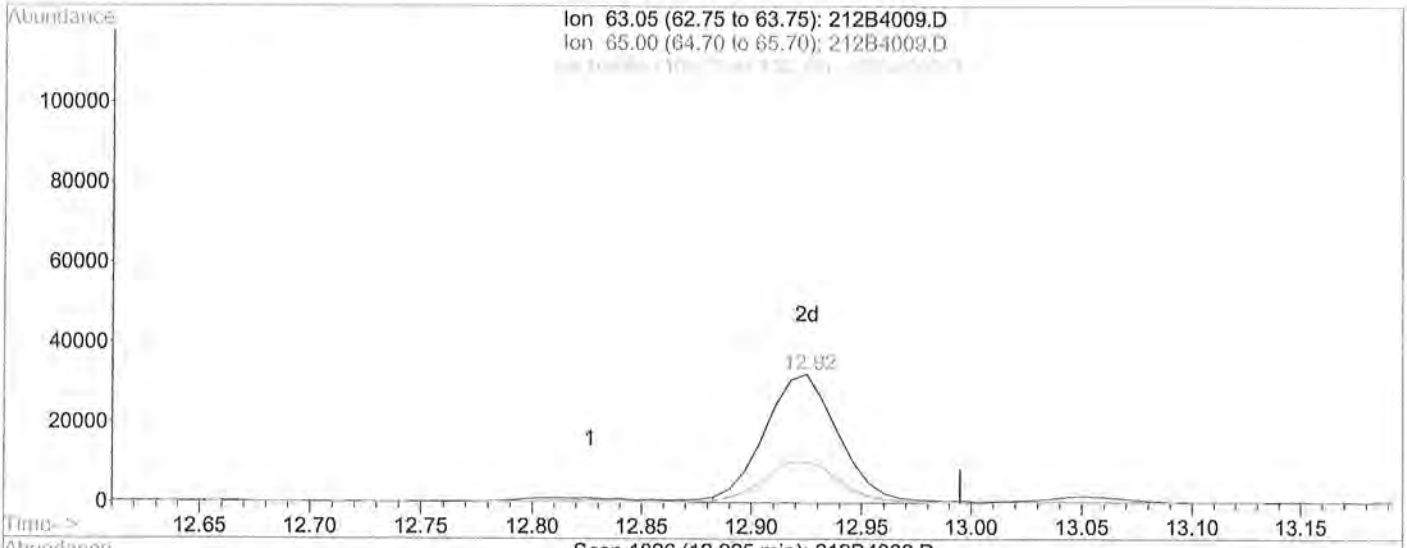
Review by/Date KH 2/4/21

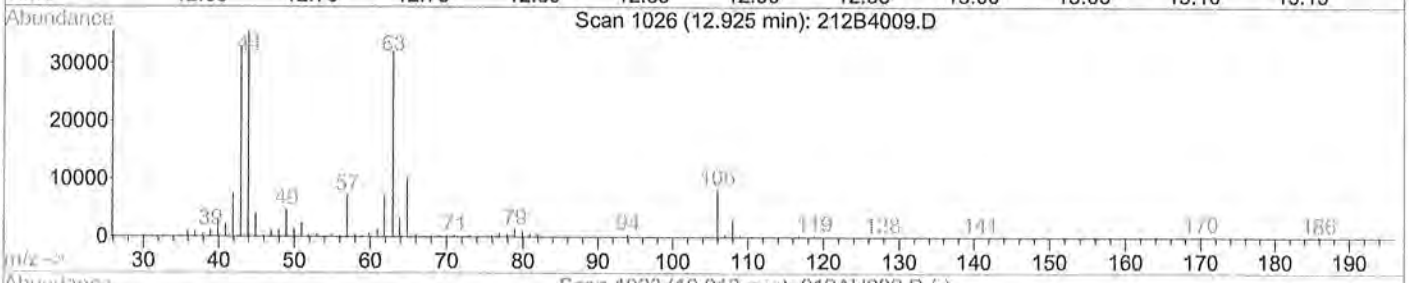
Review by/Date:

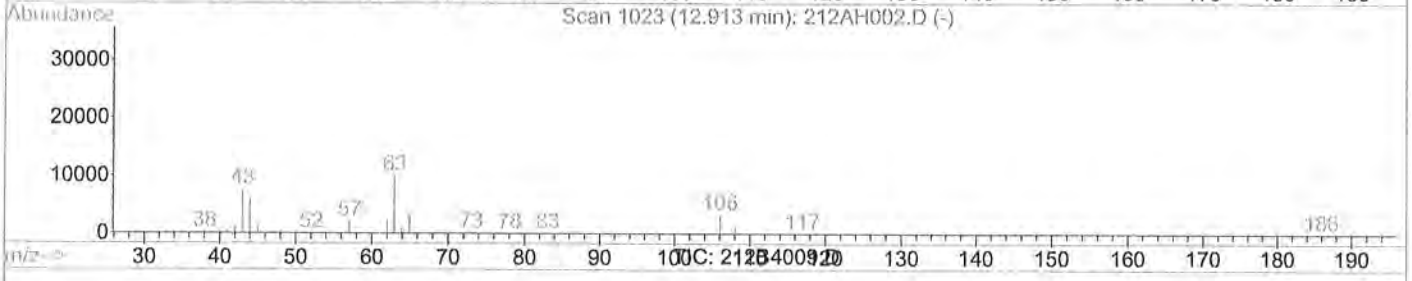
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4009.D Vial: 9
Acq On : 4 Feb 2021 11:49 am Operator: nmc
Sample : AA64808-cal8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 12:22 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Multiple Level Calibration







(51) 2-Chloroethyl vinyl ether

12.92min 4904.42ug/kg m

response 74708

Ion	Exp%	Act%
63.05	100	100
65.00	0.00	0.00
106.05	0.00	0.00
0.00	0.00	0.00

[ ] Manual Integration [✓] Manual Integration

Reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] (RT) reintegration

[ ] Other:

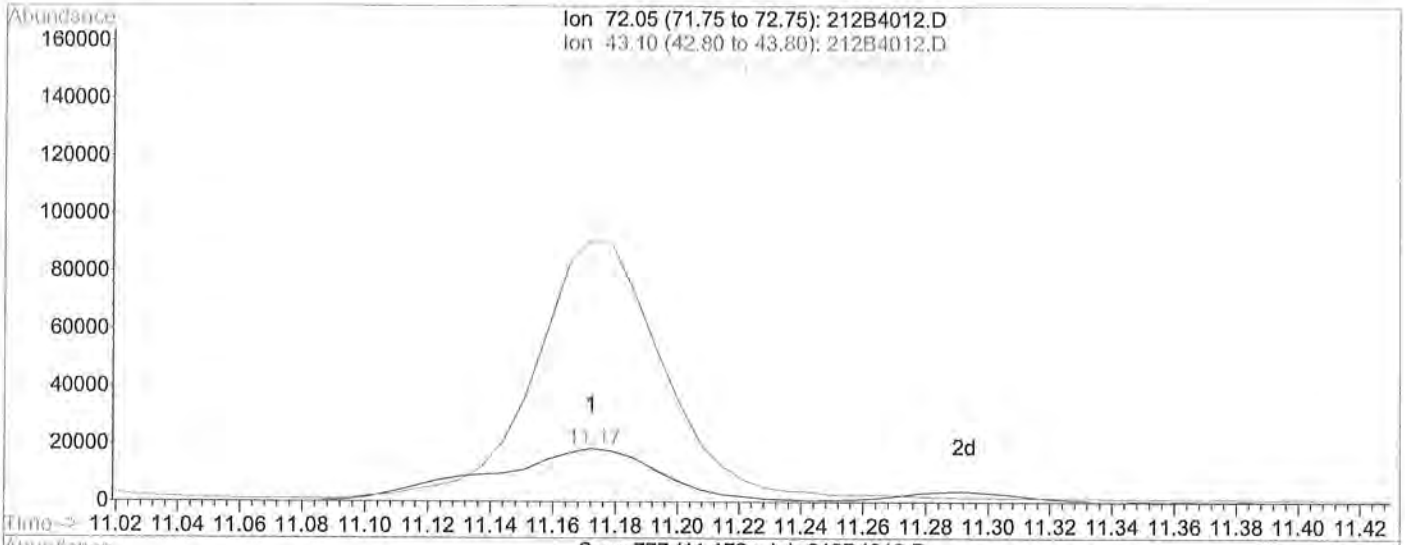
Review by/Date KB 2/4/21

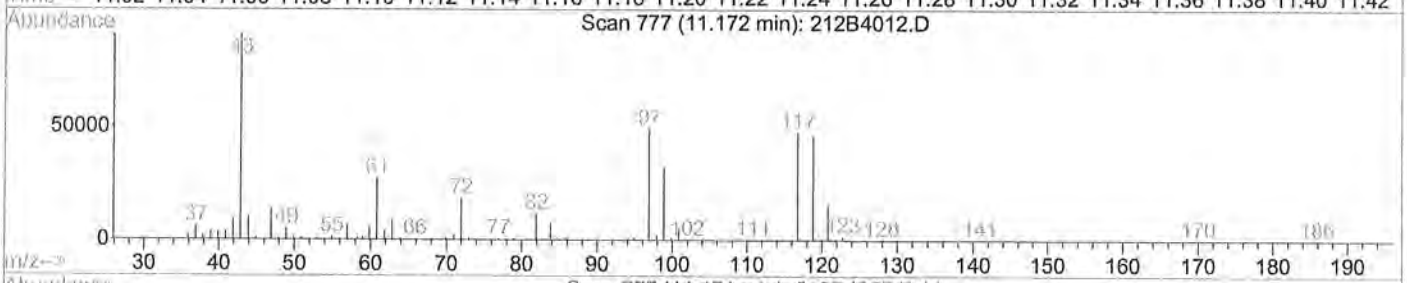
Review by/Date:

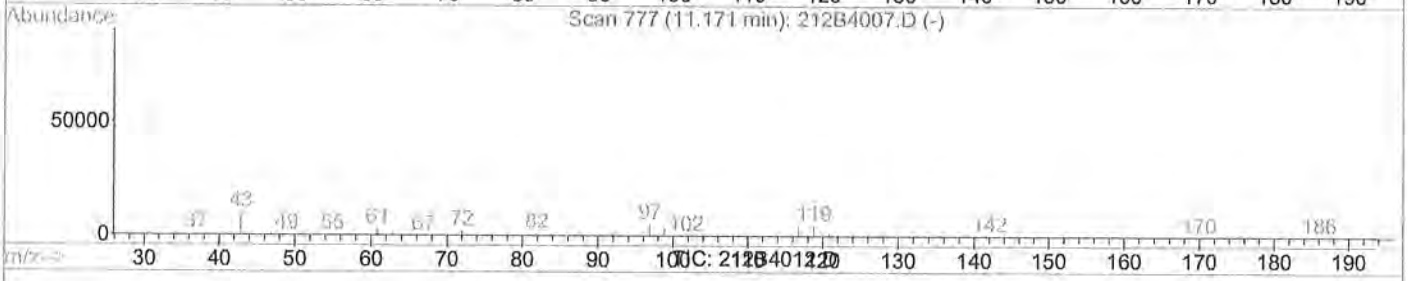
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4012.D Vial: 12
Acq On : 4 Feb 2021 1:15 pm Operator: nmc
Sample : aa64808-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:35 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Multiple Level Calibration







(25) 2-Butanone

11.17min 368.65ug/kg

response 71375

Ion	Exp%	Act%
72.05	100	100
43.10	502.20	367.81
57.00	33.30	22.55#
0.00	0.00	0.00

Select One:

[✓] Original Integration [ ] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

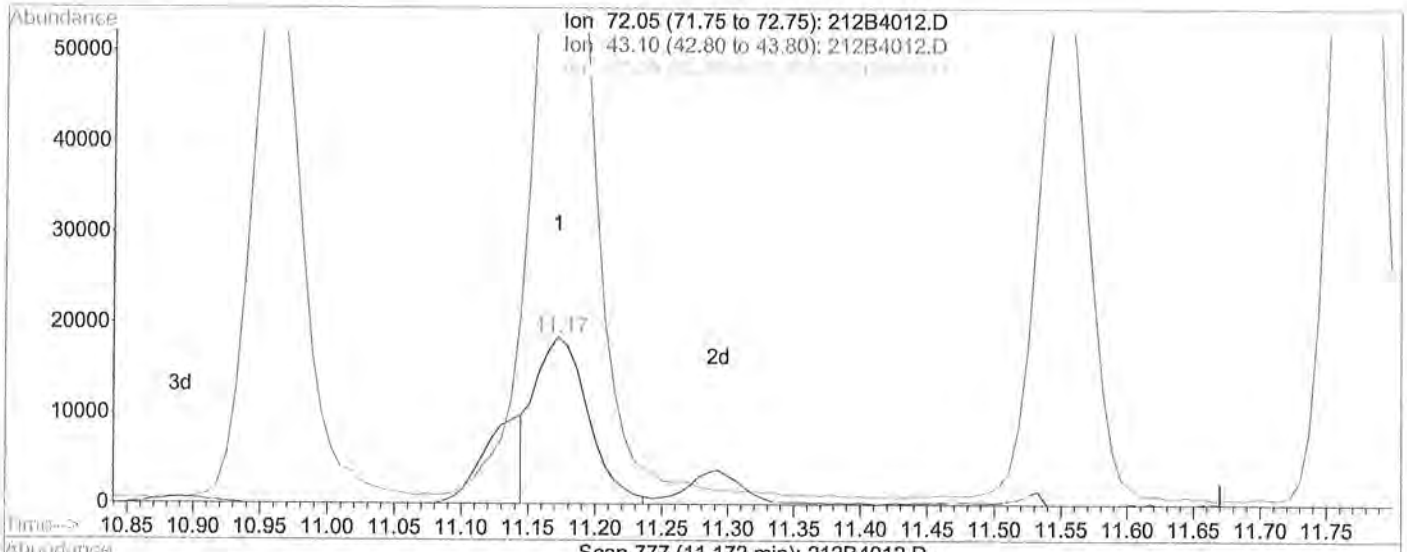
Review by/Date KH 2\5\21

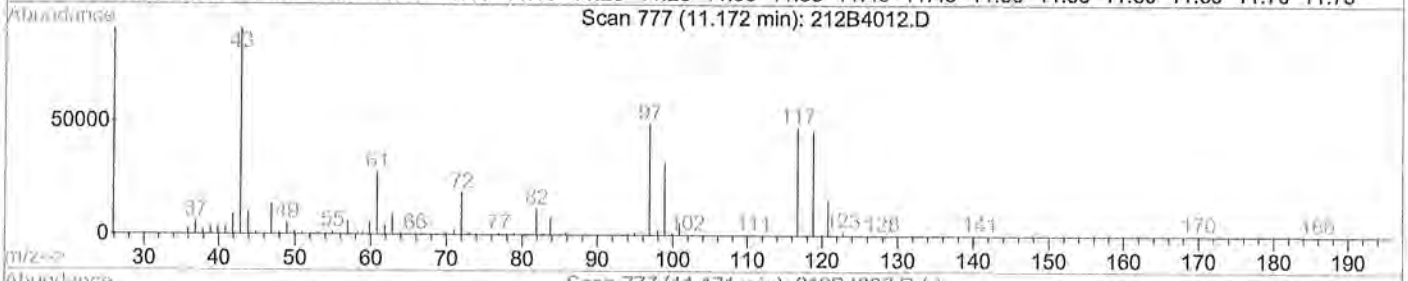
Review by/Date:

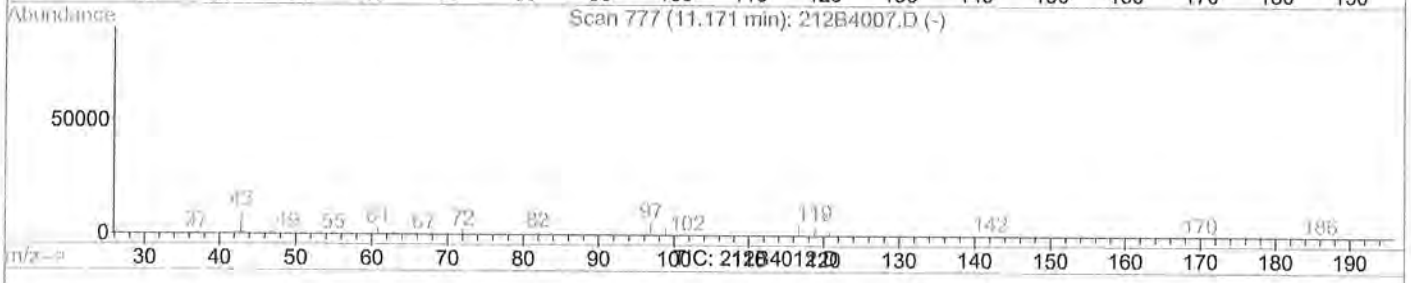
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\020421\212B4012.D Vial: 12
Acq On : 4 Feb 2021 1:15 pm Operator: nmc
Sample : aa64808-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:40 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Multiple Level Calibration







(25) 2-Butanone

11.17min 265.43ug/kg m

response 51389

Ion	Exp%	Act%
72.05	100	100
43.10	502.20	510.86
57.00	33.30	31.33
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

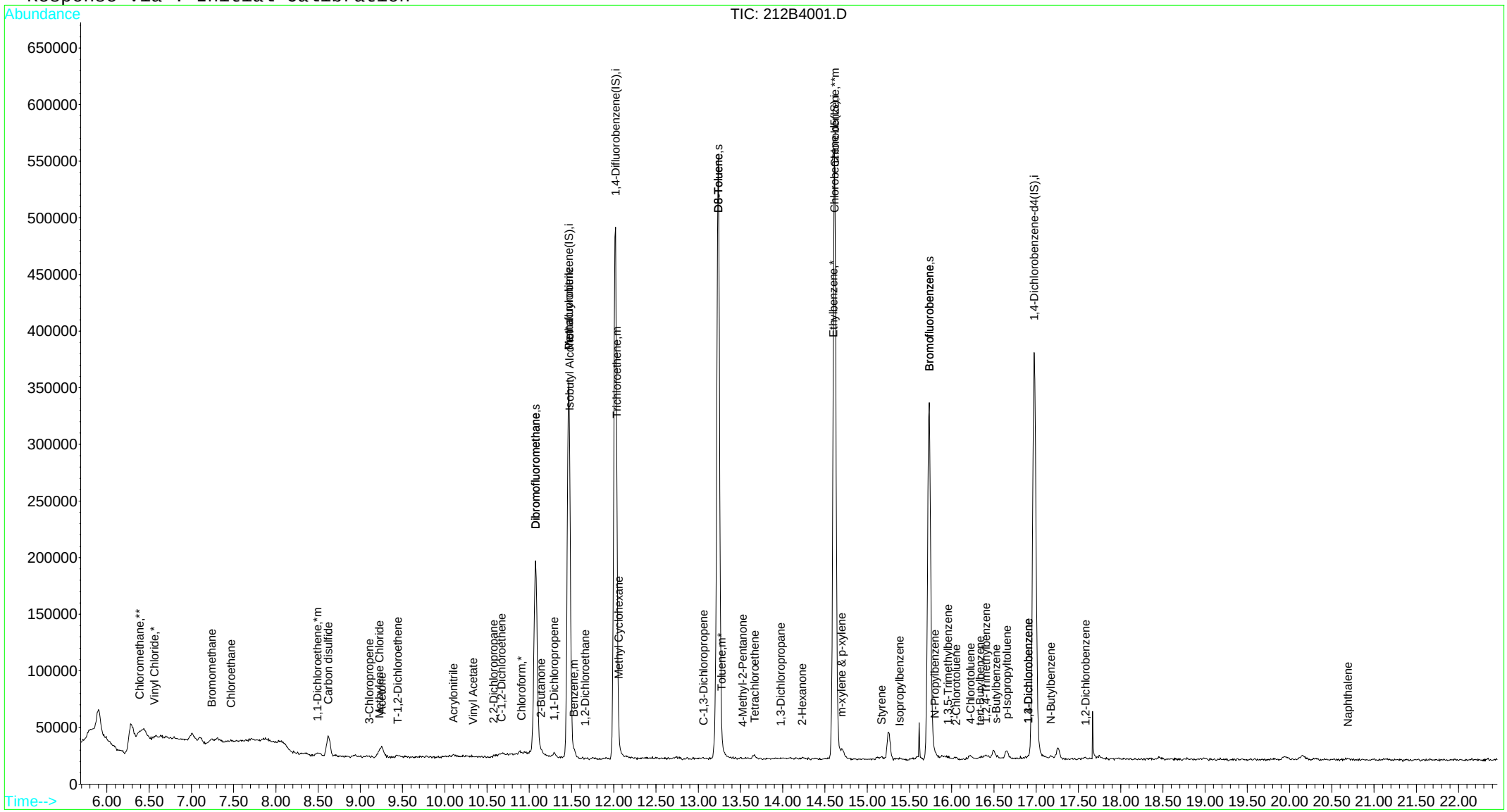
Review by/Date RH 2/5/24

Review by/Date:

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4001.D Vial: 1
Acq On : 4 Feb 2021 7:46 am Operator: nmc
Sample : AA64808-tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:08 2021 Quant Results File: 011921.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4001.D Vial: 1
Acq On : 4 Feb 2021 7:46 am Operator: nmc
Sample : AA64808-tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:08 2021 Quant Results File: 011921.RES

Quant Method : C:\HPCHEM\1\METHODS\011921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jan 29 08:15:08 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	278207	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.02	114	479280	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.61	82	238060	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	158203	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	142363	45.01	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 90.02%			
54) D8-Toluene	13.24	98	424232	52.28	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 104.56%			
75) Bromofluorobenzene	15.73	95	170334	52.66	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 105.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	6.38	50	4980	0.87	ug/kg	78
4) Vinyl Chloride	6.56	62	3308	0.68	ug/kg#	88
5) Bromomethane	7.24	96	1388	0.45	ug/kg#	92
6) Chloroethane	7.46	64	810	0.23	ug/kg#	43
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	9.25	43	16212	27.14	ug/kg	87
11) 1,1-Dichloroethene	8.49	96	1831	0.68	ug/kg#	68
12) 3-Chloropropene	9.10	76	914	0.63	ug/kg#	1
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	8.62	76	41060	6.15	ug/kg	99
16) Methylene Chloride	9.22	84	2713	0.97	ug/kg#	66
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	10.10	53	1391	1.07	ug/kg#	28
19) T-1,2-Dichloroethene	9.45	96	1238	0.43	ug/kg	89
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.67	96	1057	0.31	ug/kg	89
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	10.33	43	820	0.09	ug/kg#	80
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	11.15	72	1374	8.06	ug/kg#	1
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	10.57	77	668	0.15	ug/kg#	1
28) Methacrylonitrile	11.48	67	1162	1.43	ug/kg#	40
29) Chloroform	10.91	83	959	0.18	ug/kg#	38
31) Dibromofluoromethane	11.07	113	142363	45.01	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	11.29	75	2703	0.63	ug/kg	91
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	12.06	55	674	0.18	ug/kg#	8
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	11.66	62	610	0.17	ug/kg#	49
42) Benzene	11.53	78	7408	0.68	ug/kg#	64
43) Isobutyl Alcohol	11.48	43	674	3.69	ug/kg#	1
44) Trichloroethene	12.04	130	925	0.30	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	13.53	100	632	2.55	ug/kg#	1
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	14.22	43	640	0.42	ug/kg#	46

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4001.D Vial: 1
Acq On : 4 Feb 2021 7:46 am Operator: nmc
Sample : AA64808-tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:08 2021 Quant Results File: 011921.RES

Quant Method : C:\HPCHEM\1\METHODS\011921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jan 29 08:15:08 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	904	0.21 ug/kg#	75
55) D8-Toluene	13.24	98	424232	52.28 ug/kg	93
57) Toluene	13.28	92	1988	0.27 ug/kg#	72
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	13.98	76	801	0.22 ug/kg#	42
62) Tetrachloroethene	13.66	164	855	0.42 ug/kg	88
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	14.63	112	1584	0.20 ug/kg#	1
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	14.59	106	997	0.25 ug/kg#	62
68) m-xylene & p-xylene	14.70	106	1989	0.41 ug/kg	53
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	15.16	104	1541	0.19 ug/kg#	60
72) Isopropylbenzene	15.39	105	1362	0.12 ug/kg#	49
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.73	95	170334	52.66 ug/kg#	82
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	15.81	91	3383	0.26 ug/kg#	52
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	15.95	105	1412	0.15 ug/kg#	26
82) 2-Chlorotoluene	16.05	91	2127	0.25 ug/kg#	39
83) 4-Chlorotoluene	16.21	91	3554	0.42 ug/kg	75
84) 1,2,4-Trimethylbenzene	16.40	105	1696	0.19 ug/kg	93
85) s-Butylbenzene	16.53	105	1643	0.15 ug/kg#	1
86) tert-Butylbenzene	16.33	119	654	0.08 ug/kg#	43
87) p-Isopropyltoluene	16.65	119	6314	0.67 ug/kg	82
88) 1,3-Dichlorobenzene	16.90	146	1317	0.28 ug/kg	89
89) 1,4-Dichlorobenzene	16.90	146	1317	0.27 ug/kg	89
90) 1,2-Dichlorobenzene	17.58	146	732	0.19 ug/kg#	23
91) N-Butylbenzene	17.17	91	2278	0.32 ug/kg#	76
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	715	0.45 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4002.D Vial: 2
Acq On : 4 Feb 2021 8:28 am Operator: nmc
Sample : AA64808-cal1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:58 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.46	168	178435	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.01	114	304980	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	172086	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	142234	50.00	ug/kg	0.03
System Monitoring Compounds						
30) Dibromofluoromethane	11.06	113	85260	42.03	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 84.06%			
54) D8-Toluene	13.23	98	282044	54.62	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 109.24%			
75) Bromofluorobenzene	15.73	95	133901	57.26	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 114.52%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.86	85	4773	1.29	ug/kg#	82
3) Chloromethane	6.32	50	4184	1.14	ug/kg	79
4) Vinyl Chloride	6.51	62	3699	1.19	ug/kg#	1
5) Bromomethane	7.18	96	3339	1.70	ug/kg	91
6) Chloroethane	7.40	64	2450	1.09	ug/kg#	54
7) Trichlorofluoromethane	7.68	101	3317	0.64	ug/kg	97
8) Trichlorotrifluoroethane	8.51	101	2072	1.20	ug/kg	94
9) acrolein	8.87	56	3172	121.65	ug/kg	95
10) Acetone	9.24	43	3276	8.55	ug/kg	55
11) 1,1-Dichloroethene	8.46	96	2515	1.46	ug/kg	74
12) 3-Chloropropene	9.06	76	2440	2.63	ug/kg#	16
13) Acetonitrile	9.87	41	2073	13.09	ug/kg	83
14) Iodomethane	8.70	142	309	0.17	ug/kg#	30
15) Carbon disulfide	8.58	76	41956	9.80	ug/kg	99
16) Methylene Chloride	9.18	84	3481	1.94	ug/kg#	71
17) Methyl tert-butyl ether	9.51	73	5384	1.40	ug/kg	87
18) Acrylonitrile	10.09	53	11575	13.87	ug/kg#	77
19) T-1,2-Dichloroethene	9.42	96	2748	1.48	ug/kg	88
20) Isopropyl Ether	9.89	45	10407	1.01	ug/kg	96
21) C-1,2-Dichloroethene	10.66	96	2629	1.20	ug/kg	98
22) 1,1-Dichloroethane	10.09	63	4171	1.02	ug/kg	73
23) Vinyl Acetate	10.30	43	27216	4.79	ug/kg	97
24) Chloroprene	10.09	88	2179	1.35	ug/kg	93
25) 2-Butanone	11.17	72	919	8.40	ug/kg	48
26) Propionitrile	11.46	54	2481	15.81	ug/kg	100
27) 2,2-Dichloropropane	10.79	77	4259	1.53	ug/kg#	1
28) Methacrylonitrile	11.48	67	8381	16.04	ug/kg#	46
29) Chloroform	10.88	83	3922	1.16	ug/kg#	74
31) Dibromofluoromethane	11.06	113	85260	42.03	ug/kg	100
32) Bromochloromethane	10.86	128	1242	1.15	ug/kg	98
33) 1,1,1-Trichloroethane	11.17	97	3258	1.00	ug/kg	92
34) 1,1-Dichloropropene	11.27	75	3610	1.31	ug/kg	96
35) Diethyl Ether	8.10	59	2406	1.72	ug/kg#	90
36) Methyl Acetate	9.36	74	494	2.88	ug/kg#	4
37) Cyclohexane	10.94	56	3624	1.07	ug/kg#	76
39) Methyl Cyclohexane	12.06	55	3257	1.39	ug/kg	97
40) Carbon Tetrachloride	11.14	117	3063	1.02	ug/kg	98
41) 1,2-Dichloroethane	11.66	62	3072	1.31	ug/kg	65
42) Benzene	11.52	78	9048	1.30	ug/kg	92
43) Isobutyl Alcohol	11.55	43	3039	26.14	ug/kg#	67
44) Trichloroethene	12.03	130	2231	1.14	ug/kg#	1
45) 1,2-Dichloropropane	12.49	63	3304	1.86	ug/kg	79
46) Methyl Methacrylate	12.57	100	356	1.09	ug/kg#	22
47) 1,4-Dioxane	12.71	88	245	51.68	ug/kg#	1
48) Bromodichloromethane	12.51	83	3885	1.61	ug/kg	94
49) Dibromomethane	12.43	93	1543	1.50	ug/kg	82
50) 4-Methyl-2-Pentanone	13.52	100	1401	8.90	ug/kg#	44
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	d	
52) 2-Hexanone	14.22	43	6941	7.10	ug/kg#	86

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4002.D Vial: 2
Acq On : 4 Feb 2021 8:28 am Operator: nmc
Sample : AA64808-cal1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:58 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

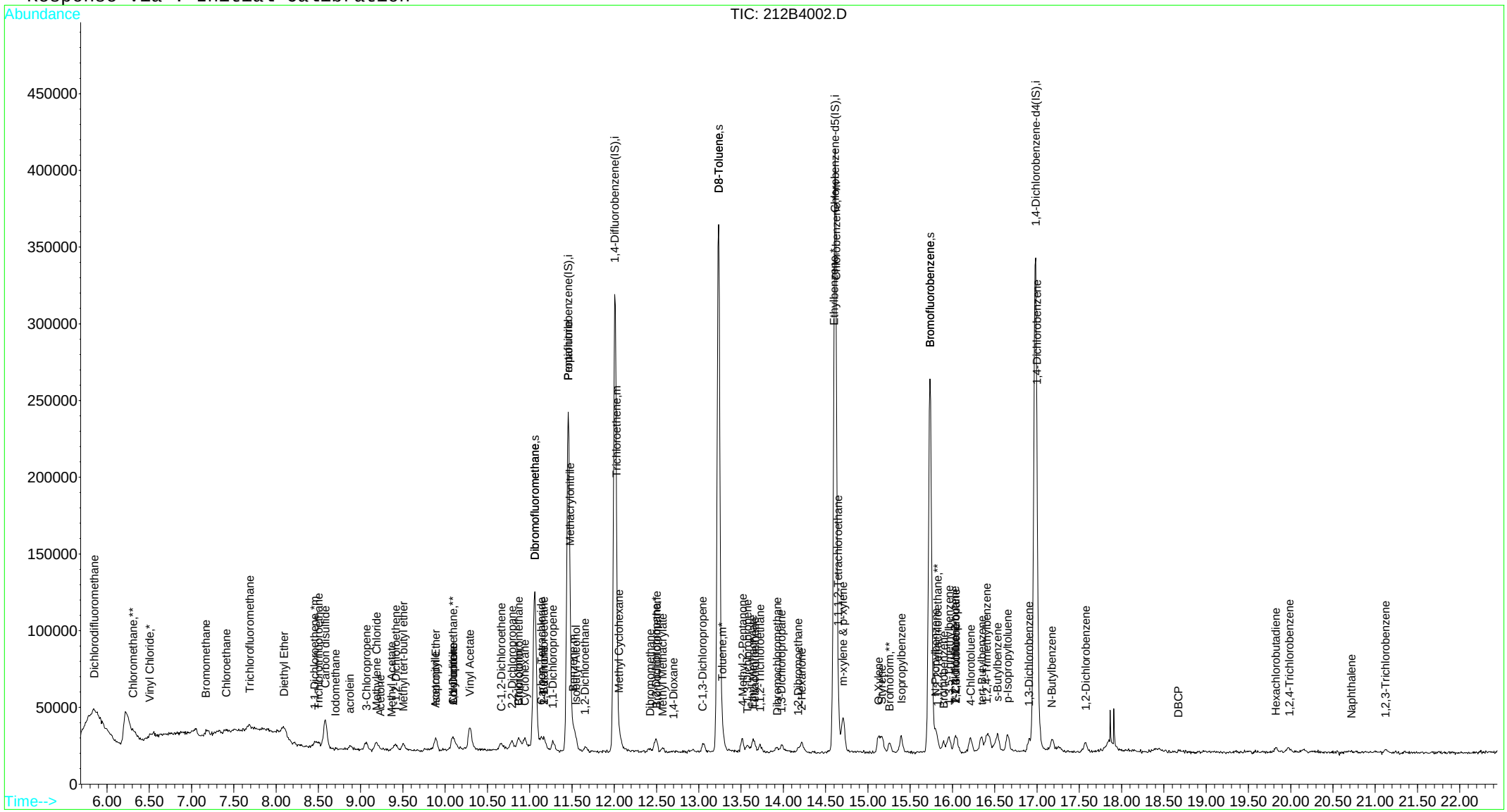
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	4461	1.62	ug/kg	87
55) D8-Toluene	13.23	98	282044	54.62	ug/kg	92
57) Toluene	13.28	92	5789	1.11	ug/kg	99
58) Ethyl Methacrylate	13.63	69	2793	1.41	ug/kg#	97
59) T-1,3-Dichloropropene	13.57	75	3748	1.34	ug/kg	88
60) 1,1,2-Trichloroethane	13.73	97	1986	1.36	ug/kg	80
61) 1,3-Dichloropropane	13.98	76	3739	1.45	ug/kg	94
62) Tetrachloroethene	13.66	164	1434	0.98	ug/kg	87
63) Dibromochloromethane	13.93	129	2441	1.14	ug/kg#	89
64) 1,2-Dibromoethane	14.18	107	1841	1.14	ug/kg#	89
65) Chlorobenzene	14.63	112	6201	1.06	ug/kg#	56
66) 1,1,1,2-Tetrachloroethane	14.65	131	2253	1.00	ug/kg#	1
67) Ethylbenzene	14.59	106	3274	1.12	ug/kg	80
68) m-xylene & p-xylene	14.71	106	8140	2.35	ug/kg	95
69) O-Xylene	15.12	106	4210	1.27	ug/kg	87
70) Bromoform	15.26	173	1100	1.21	ug/kg#	91
71) Styrene	15.17	104	7885	1.35	ug/kg	94
72) Isopropylbenzene	15.40	105	10213	1.21	ug/kg	98
73) 1,2,3-Trichloropropane	16.04	75	3401	1.94	ug/kg	79
74) 1,1,2,2-Tetrachloroethane	15.83	83	2489	1.73	ug/kg#	86
76) Bromofluorobenzene	15.73	95	133901	57.26	ug/kg#	81
77) T-1,4-dichloro-2-butene	16.02	53	1167	2.63	ug/kg#	51
78) N-Propylbenzene	15.80	91	12713	1.35	ug/kg	94
80) Bromobenzene	15.90	156	2455	1.06	ug/kg	95
81) 1,3,5-Trimethylbenzene	15.95	105	8786	1.06	ug/kg	97
82) 2-Chlorotoluene	16.04	91	7472	0.99	ug/kg	95
83) 4-Chlorotoluene	16.21	91	7876	1.03	ug/kg	96
84) 1,2,4-Trimethylbenzene	16.40	105	9045	1.11	ug/kg	95
85) s-Butylbenzene	16.54	105	10563	1.05	ug/kg	99
86) tert-Butylbenzene	16.35	119	6922	0.92	ug/kg	91
87) p-Isopropyltoluene	16.65	119	10330	1.22	ug/kg	89
88) 1,3-Dichlorobenzene	16.91	146	4834	1.15	ug/kg	97
89) 1,4-Dichlorobenzene	17.00	146	4925m	1.13	ug/kg	
90) 1,2-Dichlorobenzene	17.57	146	4015	1.15	ug/kg	96
91) N-Butylbenzene	17.18	91	8553	1.32	ug/kg	96
92) DBCP	18.66	75	328	1.69	ug/kg#	6
93) Naphthalene	20.71	128	1859	1.29	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	1656	1.40	ug/kg	90
95) Hexachlorobutadiene	19.83	225	965	1.31	ug/kg#	73
96) 1,2,3-Trichlorobenzene	21.13	180	970	1.26	ug/kg#	73

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4002.D Vial: 2
Acq On : 4 Feb 2021 8:28 am Operator: nmc
Sample : AA64808-cal1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 8:58 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4003.D Vial: 3
Acq On : 4 Feb 2021 8:57 am Operator: nmc
Sample : AA64808-cal2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:21 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.45	168	199854	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.01	114	343837	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	187069	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	145922	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.06	113	105391	46.39	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 92.78%			
54) D8-Toluene	13.23	98	342919	58.91	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.82%			
75) Bromofluorobenzene	15.73	95	152859	60.13	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 120.26%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.86	85	9976	2.42	ug/kg	98
3) Chloromethane	6.33	50	9043	2.20	ug/kg	92
4) Vinyl Chloride	6.52	62	8550	2.46	ug/kg#	1
5) Bromomethane	7.19	96	7948	3.62	ug/kg	92
6) Chloroethane	7.42	64	4916	1.96	ug/kg	94
7) Trichlorofluoromethane	7.68	101	8166	1.42	ug/kg	96
8) Trichlorotrifluoroethane	8.50	101	3860	1.99	ug/kg	89
9) acrolein	8.88	56	6951	175.95	ug/kg	98
10) Acetone	9.24	43	5844	13.62	ug/kg	85
11) 1,1-Dichloroethene	8.48	96	4557	2.35	ug/kg	84
12) 3-Chloropropene	9.07	76	3698	3.57	ug/kg#	45
13) Acetonitrile	9.80	41	4087	23.05	ug/kg#	64
14) Iodomethane	8.70	142	2251	1.12	ug/kg	81
15) Carbon disulfide	8.59	76	90375	18.85	ug/kg	99
16) Methylene Chloride	9.18	84	5691	2.82	ug/kg#	83
17) Methyl tert-butyl ether	9.51	73	10886	2.52	ug/kg	93
18) Acrylonitrile	10.09	53	22092	23.64	ug/kg	99
19) T-1,2-Dichloroethene	9.42	96	4844	2.33	ug/kg	96
20) Isopropyl Ether	9.89	45	22223	1.92	ug/kg	94
21) C-1,2-Dichloroethene	10.66	96	5477	2.23	ug/kg	97
22) 1,1-Dichloroethane	10.09	63	9501	2.08	ug/kg#	62
23) Vinyl Acetate	10.30	43	62939	9.89	ug/kg	97
24) Chloroprene	10.09	88	4448	2.46	ug/kg	94
25) 2-Butanone	11.17	72	2510	20.49	ug/kg#	16
26) Propionitrile	11.45	54	4825	27.45	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	8230	2.64	ug/kg#	1
28) Methacrylonitrile	11.48	67	15836	27.06	ug/kg	72
29) Chloroform	10.88	83	9836	2.60	ug/kg	95
31) Dibromofluoromethane	11.06	113	105391	46.39	ug/kg	100
32) Bromochloromethane	10.87	128	2490	2.06	ug/kg	96
33) 1,1,1-Trichloroethane	11.18	97	6856	1.88	ug/kg	91
34) 1,1-Dichloropropene	11.27	75	7122	2.31	ug/kg	90
35) Diethyl Ether	8.11	59	4280	2.74	ug/kg	85
36) Methyl Acetate	9.38	74	910	4.74	ug/kg#	1
37) Cyclohexane	10.94	56	7489	1.97	ug/kg	97
39) Methyl Cyclohexane	12.07	55	5890	2.23	ug/kg	96
40) Carbon Tetrachloride	11.14	117	6411	1.90	ug/kg	98
41) 1,2-Dichloroethane	11.66	62	6598	2.49	ug/kg	81
42) Benzene	11.52	78	18169	2.31	ug/kg	94
43) Isobutyl Alcohol	11.55	43	7541	57.54	ug/kg#	68
44) Trichloroethene	12.04	130	4566	2.07	ug/kg#	5
45) 1,2-Dichloropropane	12.48	63	6342	3.17	ug/kg	84
46) Methyl Methacrylate	12.56	100	998	2.72	ug/kg	61
47) 1,4-Dioxane	12.70	88	517	96.73	ug/kg#	59
48) Bromodichloromethane	12.50	83	7224	2.65	ug/kg	99
49) Dibromomethane	12.41	93	2774	2.40	ug/kg	90
50) 4-Methyl-2-Pentanone	13.52	100	2856	16.09	ug/kg	65
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	d	
52) 2-Hexanone	14.22	43	14184	12.88	ug/kg#	86

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4003.D Vial: 3
Acq On : 4 Feb 2021 8:57 am Operator: nmc
Sample : AA64808-cal2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:21 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

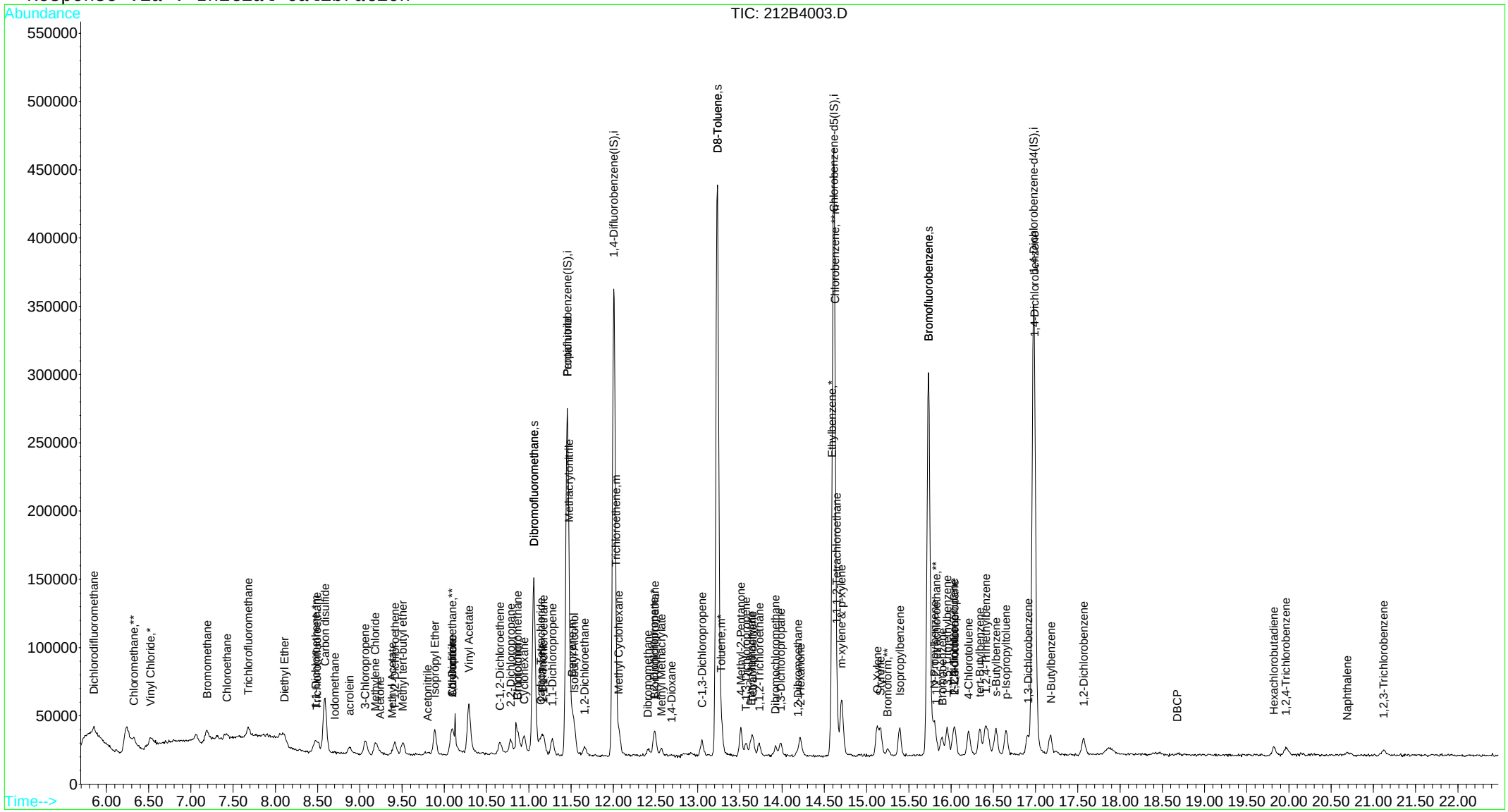
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	8876	2.86	ug/kg	89
55) D8-Toluene	13.23	98	342919	58.91	ug/kg	93
57) Toluene	13.28	92	11586	2.04	ug/kg	92
58) Ethyl Methacrylate	13.63	69	6147	2.85	ug/kg#	77
59) T-1,3-Dichloropropene	13.57	75	7439	2.45	ug/kg	84
60) 1,1,2-Trichloroethane	13.73	97	3736	2.36	ug/kg	85
61) 1,3-Dichloropropane	13.98	76	7738	2.76	ug/kg	97
62) Tetrachloroethene	13.66	164	3175	1.99	ug/kg	96
63) Dibromochloromethane	13.92	129	4900	2.11	ug/kg#	96
64) 1,2-Dibromoethane	14.18	107	3806	2.18	ug/kg#	91
65) Chlorobenzene	14.63	112	12735	2.00	ug/kg#	65
66) 1,1,1,2-Tetrachloroethane	14.65	131	4739	1.94	ug/kg#	1
67) Ethylbenzene	14.58	106	6543	2.06	ug/kg	84
68) m-xylene & p-xylene	14.71	106	16339	4.34	ug/kg	96
69) O-Xylene	15.13	106	8119	2.24	ug/kg	91
70) Bromoform	15.25	173	2379	2.40	ug/kg#	94
71) Styrene	15.16	104	15031	2.37	ug/kg	95
72) Isopropylbenzene	15.39	105	20091	2.19	ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	5490	2.88	ug/kg	97
74) 1,1,2,2-Tetrachloroethane	15.83	83	4257	2.72	ug/kg	91
76) Bromofluorobenzene	15.73	95	152859	60.13	ug/kg#	80
77) T-1,4-dichloro-2-butene	16.02	53	1002	2.08	ug/kg#	42
78) N-Propylbenzene	15.80	91	25476	2.50	ug/kg	94
80) Bromobenzene	15.90	156	5004	2.10	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.95	105	16095	1.90	ug/kg	98
82) 2-Chlorotoluene	16.04	91	14271	1.84	ug/kg	98
83) 4-Chlorotoluene	16.21	91	15331	1.95	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	16404	1.96	ug/kg	98
85) s-Butylbenzene	16.53	105	19438	1.88	ug/kg	97
86) tert-Butylbenzene	16.34	119	13854	1.80	ug/kg	96
87) p-Isopropyltoluene	16.65	119	16960	1.95	ug/kg	91
88) 1,3-Dichlorobenzene	16.91	146	8995	2.09	ug/kg	98
89) 1,4-Dichlorobenzene	17.00	146	9495	2.13	ug/kg	86
90) 1,2-Dichlorobenzene	17.58	146	7572	2.11	ug/kg	97
91) N-Butylbenzene	17.17	91	14654	2.20	ug/kg	96
92) DBCP	18.68	75	796	4.00	ug/kg	69
93) Naphthalene	20.69	128	4187	2.84	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	3332	2.75	ug/kg	94
95) Hexachlorobutadiene	19.83	225	1874	2.47	ug/kg	96
96) 1,2,3-Trichlorobenzene	21.12	180	2099	2.67	ug/kg	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4003.D Vial: 3
Acq On : 4 Feb 2021 8:57 am Operator: nmc
Sample : AA64808-cal2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:21 2021 Quant Results File: 020421.RES

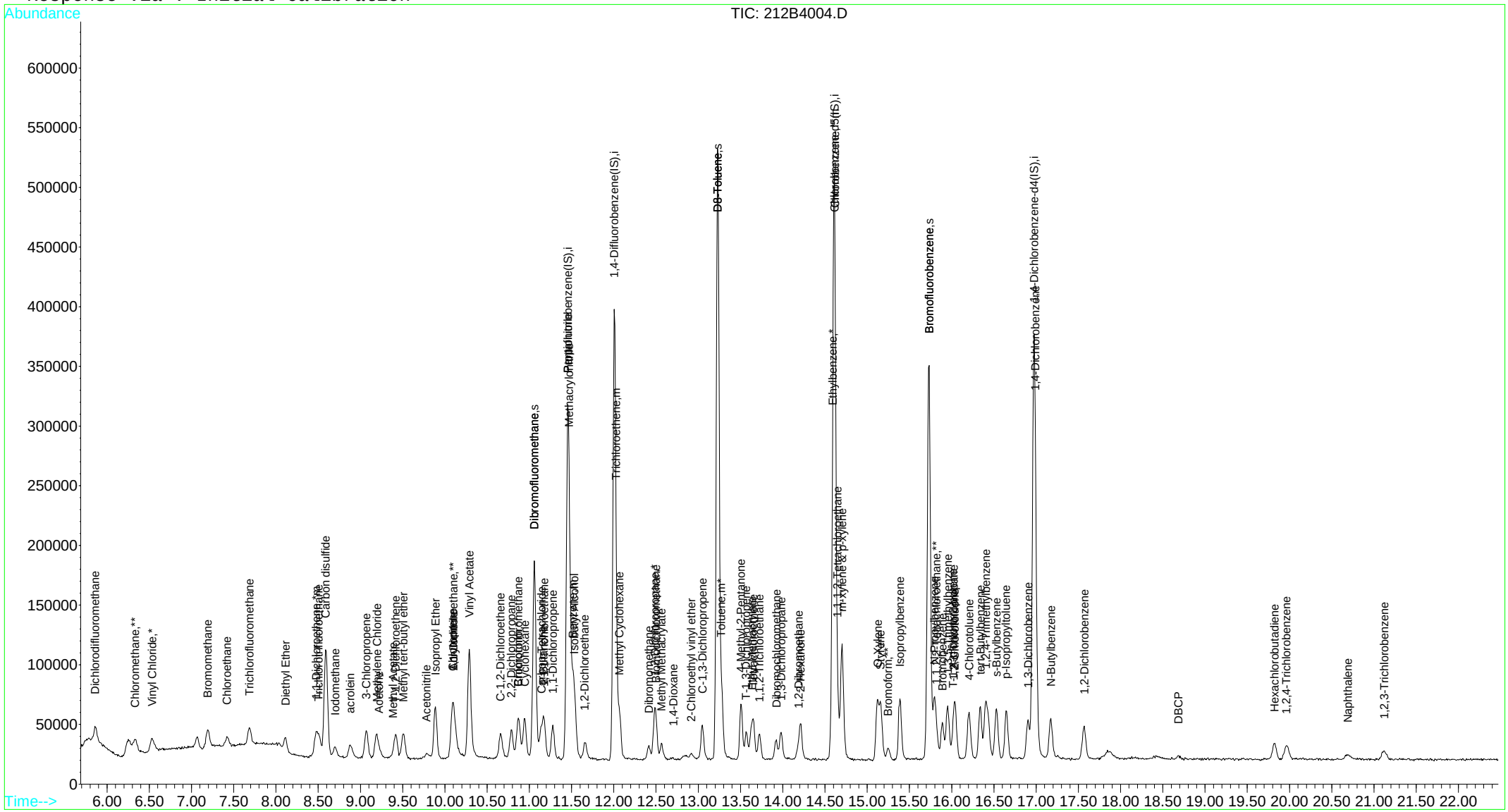
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4004.D Vial: 4
Acq On : 4 Feb 2021 9:26 am Operator: nmc
Sample : AA64808-cal3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:51 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4004.D Vial: 4
Acq On : 4 Feb 2021 9:26 am Operator: nmc
Sample : AA64808-cal3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:51 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.45	168	215886	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.01	114	379240	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	199483	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	149519	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.06	113	134830	54.94	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 109.88%			
54) D8-Toluene	13.23	98	419816	65.39	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 130.78%			
75) Bromofluorobenzene	15.73	95	181306	66.89	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 133.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.86	85	20400	4.57	ug/kg	98
3) Chloromethane	6.33	50	18601	4.19	ug/kg	94
4) Vinyl Chloride	6.53	62	17582	4.68	ug/kg	92
5) Bromomethane	7.20	96	17283	7.28	ug/kg	93
6) Chloroethane	7.42	64	10585	3.91	ug/kg	98
7) Trichlorofluoromethane	7.68	101	17632	2.83	ug/kg	97
8) Trichlorotrifluoroethane	8.50	101	10332	4.93	ug/kg	91
9) acrolein	8.88	56	17213	274.14	ug/kg	97
10) Acetone	9.22	43	11549	24.91	ug/kg	83
11) 1,1-Dichloroethene	8.47	96	10176	4.87	ug/kg	99
12) 3-Chloropropene	9.07	76	8224	7.34	ug/kg#	47
13) Acetonitrile	9.79	41	8631	45.05	ug/kg	72
14) Iodomethane	8.69	142	18924	8.68	ug/kg	88
15) Carbon disulfide	8.59	76	202596	39.11	ug/kg	100
16) Methylene Chloride	9.19	84	13016	5.98	ug/kg#	84
17) Methyl tert-butyl ether	9.51	73	26759	5.73	ug/kg	95
18) Acrylonitrile	10.11	53	57883	57.34	ug/kg	94
19) T-1,2-Dichloroethene	9.42	96	11923	5.31	ug/kg	95
20) Isopropyl Ether	9.89	45	54574	4.36	ug/kg	95
21) C-1,2-Dichloroethene	10.66	96	12653	4.77	ug/kg	94
22) 1,1-Dichloroethane	10.09	63	24771	5.02	ug/kg#	67
23) Vinyl Acetate	10.29	43	154077	22.42	ug/kg	98
24) Chloroprene	10.09	88	10935	5.59	ug/kg	94
25) 2-Butanone	11.17	72	4832	36.51	ug/kg#	34
26) Propionitrile	11.45	54	10384	54.69	ug/kg	100
27) 2,2-Dichloropropane	10.79	77	17318	5.14	ug/kg	69
28) Methacrylonitrile	11.48	67	36706	58.06	ug/kg	69
29) Chloroform	10.88	83	21559	5.28	ug/kg	91
31) Dibromofluoromethane	11.06	113	134830	54.94	ug/kg	100
32) Bromochloromethane	10.86	128	6170	4.72	ug/kg	97
33) 1,1,1-Trichloroethane	11.18	97	16545	4.20	ug/kg	97
34) 1,1-Dichloropropene	11.28	75	16945	5.10	ug/kg	95
35) Diethyl Ether	8.12	59	9910	5.87	ug/kg	87
36) Methyl Acetate	9.38	74	1606	7.74	ug/kg#	34
37) Cyclohexane	10.94	56	19881	4.85	ug/kg	92
39) Methyl Cyclohexane	12.07	55	14327	4.92	ug/kg	97
40) Carbon Tetrachloride	11.14	117	16541	4.45	ug/kg	99
41) 1,2-Dichloroethane	11.66	62	15528	5.31	ug/kg	96
42) Benzene	11.52	78	44965	5.18	ug/kg	96
43) Isobutyl Alcohol	11.54	43	17984	124.41	ug/kg#	61
44) Trichloroethene	12.03	130	11892	4.88	ug/kg#	65
45) 1,2-Dichloropropane	12.49	63	13747	6.23	ug/kg	88
46) Methyl Methacrylate	12.56	100	2494	6.17	ug/kg	68
47) 1,4-Dioxane	12.70	88	998	169.30	ug/kg#	57
48) Bromodichloromethane	12.51	83	17116	5.69	ug/kg	99
49) Dibromomethane	12.41	93	7050	5.53	ug/kg	97
50) 4-Methyl-2-Pentanone	13.51	100	5964	30.46	ug/kg	71
51) 2-Chloroethyl vinyl ether	12.92	63	1930m	163.86	ug/kg	
52) 2-Hexanone	14.22	43	31278	25.75	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4004.D Vial: 4
Acq On : 4 Feb 2021 9:26 am Operator: nmc
Sample : AA64808-cal3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 9:51 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

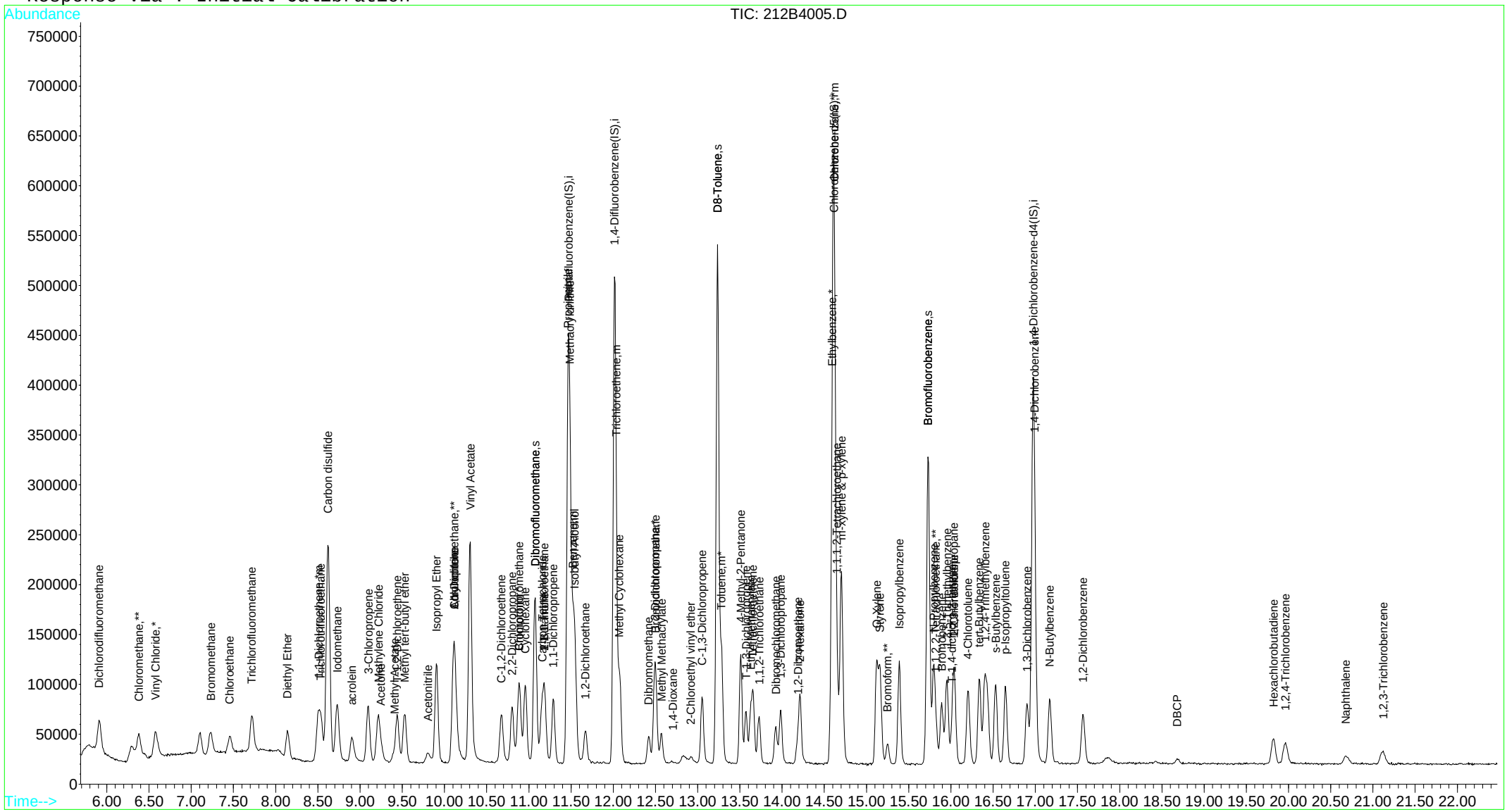
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	22207	6.50	ug/kg	86
55) D8-Toluene	13.23	98	419816	65.39	ug/kg	92
57) Toluene	13.28	92	27718	4.57	ug/kg	97
58) Ethyl Methacrylate	13.63	69	13097	5.70	ug/kg#	81
59) T-1,3-Dichloropropene	13.57	75	17931	5.54	ug/kg	82
60) 1,1,2-Trichloroethane	13.72	97	8891	5.26	ug/kg	91
61) 1,3-Dichloropropane	13.98	76	18363	6.15	ug/kg	98
62) Tetrachloroethene	13.65	164	8651	5.08	ug/kg	89
63) Dibromochloromethane	13.92	129	12337	4.97	ug/kg#	95
64) 1,2-Dibromoethane	14.18	107	8914	4.78	ug/kg	91
65) Chlorobenzene	14.62	112	30962	4.56	ug/kg	84
66) 1,1,1,2-Tetrachloroethane	14.65	131	11559	4.43	ug/kg#	1
67) Ethylbenzene	14.58	106	15553	4.60	ug/kg	90
68) m-xylene & p-xylene	14.70	106	38172	9.50	ug/kg	95
69) O-Xylene	15.12	106	19045	4.94	ug/kg	90
70) Bromoform	15.25	173	5924	5.61	ug/kg	98
71) Styrene	15.16	104	34288	5.06	ug/kg	96
72) Isopropylbenzene	15.39	105	47344	4.84	ug/kg	99
73) 1,2,3-Trichloropropane	16.02	75	11934	5.86	ug/kg	97
74) 1,1,2,2-Tetrachloroethane	15.83	83	9974	5.98	ug/kg	97
76) Bromofluorobenzene	15.73	95	181306	66.89	ug/kg#	81
77) T-1,4-dichloro-2-butene	16.01	53	2079	4.05	ug/kg#	35
78) N-Propylbenzene	15.80	91	57533	5.29	ug/kg	95
80) Bromobenzene	15.90	156	11724	4.80	ug/kg	98
81) 1,3,5-Trimethylbenzene	15.95	105	38281	4.41	ug/kg	98
82) 2-Chlorotoluene	16.04	91	34461	4.33	ug/kg	98
83) 4-Chlorotoluene	16.21	91	35728	4.44	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.40	105	38890	4.53	ug/kg	98
85) s-Butylbenzene	16.53	105	45605	4.31	ug/kg	96
86) tert-Butylbenzene	16.34	119	33015	4.19	ug/kg	98
87) p-Isopropyltoluene	16.64	119	38937	4.36	ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	21304	4.84	ug/kg	98
89) 1,4-Dichlorobenzene	17.00	146	21463	4.70	ug/kg	95
90) 1,2-Dichlorobenzene	17.57	146	17974	4.88	ug/kg	96
91) N-Butylbenzene	17.17	91	33663	4.94	ug/kg	99
92) DBCP	18.68	75	1332	6.54	ug/kg	95
93) Naphthalene	20.69	128	8518	5.63	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	7928	6.38	ug/kg	96
95) Hexachlorobutadiene	19.81	225	4719	6.08	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	5310	6.59	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4005.D Vial: 5
Acq On : 4 Feb 2021 9:54 am Operator: nmc
Sample : AA64808-cal4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 10:17 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4005.D Vial: 5
Acq On : 4 Feb 2021 9:54 am Operator: nmc
Sample : AA64808-cal4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 10:17 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.46	168	270209	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.01	114	483052	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.61	82	235561	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	156580	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	138613	45.12	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 90.24%			
54) D8-Toluene	13.24	98	409387	50.06	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 100.12%			
75) Bromofluorobenzene	15.73	95	161492	50.45	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 100.90%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.91	85	48072	8.61	ug/kg	99
3) Chloromethane	6.38	50	44876	8.08	ug/kg	97
4) Vinyl Chloride	6.58	62	43483	9.24	ug/kg	94
5) Bromomethane	7.23	96	25070	8.44	ug/kg	98
6) Chloroethane	7.46	64	23751	7.04	ug/kg	94
7) Trichlorofluoromethane	7.72	101	44894	5.76	ug/kg	98
8) Trichlorotrifluoroethane	8.54	101	25923	9.87	ug/kg	94
9) acrolein	8.90	56	37277	365.45	ug/kg	98
10) Acetone	9.25	43	27561	47.50	ug/kg	87
11) 1,1-Dichloroethene	8.51	96	23825	9.11	ug/kg	99
12) 3-Chloropropene	9.10	76	18225	13.00	ug/kg	62
13) Acetonitrile	9.80	41	22528	93.96	ug/kg	97
14) Iodomethane	8.72	142	112160	40.72	ug/kg	88
15) Carbon disulfide	8.62	76	505827	78.02	ug/kg	100
16) Methylene Chloride	9.22	84	29463	10.82	ug/kg	88
17) Methyl tert-butyl ether	9.53	73	61512	10.53	ug/kg	93
18) Acrylonitrile	10.12	53	127773	101.13	ug/kg	96
19) T-1,2-Dichloroethene	9.44	96	27540	9.79	ug/kg	96
20) Isopropyl Ether	9.90	45	129041	8.24	ug/kg	95
21) C-1,2-Dichloroethene	10.67	96	30369	9.14	ug/kg	99
22) 1,1-Dichloroethane	10.12	63	56673	9.17	ug/kg	98
23) Vinyl Acetate	10.31	43	365322	42.47	ug/kg	96
24) Chloroprene	10.11	88	27235	11.13	ug/kg	85
25) 2-Butanone	11.18	72	9989	60.31	ug/kg#	42
26) Propionitrile	11.46	54	25742	108.33	ug/kg	100
27) 2,2-Dichloropropane	10.80	77	43076	10.22	ug/kg	86
28) Methacrylonitrile	11.49	67	85165	107.63	ug/kg	69
29) Chloroform	10.89	83	53813	10.53	ug/kg	94
31) Dibromofluoromethane	11.08	113	138613	45.12	ug/kg	100
32) Bromochloromethane	10.88	128	14381	8.79	ug/kg	94
33) 1,1,1-Trichloroethane	11.19	97	39158	7.94	ug/kg	97
34) 1,1-Dichloropropene	11.29	75	39162	9.42	ug/kg	97
35) Diethyl Ether	8.14	59	22872	10.82	ug/kg	86
36) Methyl Acetate	9.40	74	3147	12.11	ug/kg#	47
37) Cyclohexane	10.96	56	46846	9.14	ug/kg	91
39) Methyl Cyclohexane	12.08	55	32805	8.85	ug/kg	95
40) Carbon Tetrachloride	11.15	117	39129	8.26	ug/kg	99
41) 1,2-Dichloroethane	11.67	62	35495	9.53	ug/kg	98
42) Benzene	11.53	78	104197	9.42	ug/kg	99
43) Isobutyl Alcohol	11.55	43	36703	199.33	ug/kg#	79
44) Trichloroethene	12.04	130	27910	9.00	ug/kg#	82
45) 1,2-Dichloropropane	12.49	63	32022	11.39	ug/kg	87
46) Methyl Methacrylate	12.57	100	5917	11.49	ug/kg	85
47) 1,4-Dioxane	12.71	88	1851	246.52	ug/kg#	62
48) Bromodichloromethane	12.51	83	39601	10.34	ug/kg	99
49) Dibromomethane	12.42	93	15361	9.45	ug/kg	92
50) 4-Methyl-2-Pentanone	13.51	100	12690	50.88	ug/kg	77
51) 2-Chloroethyl vinyl ether	12.92	63	2358	157.17	ug/kg#	100
52) 2-Hexanone	14.21	43	68048	43.98	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4005.D Vial: 5
Acq On : 4 Feb 2021 9:54 am Operator: nmc
Sample : AA64808-cal4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 10:17 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

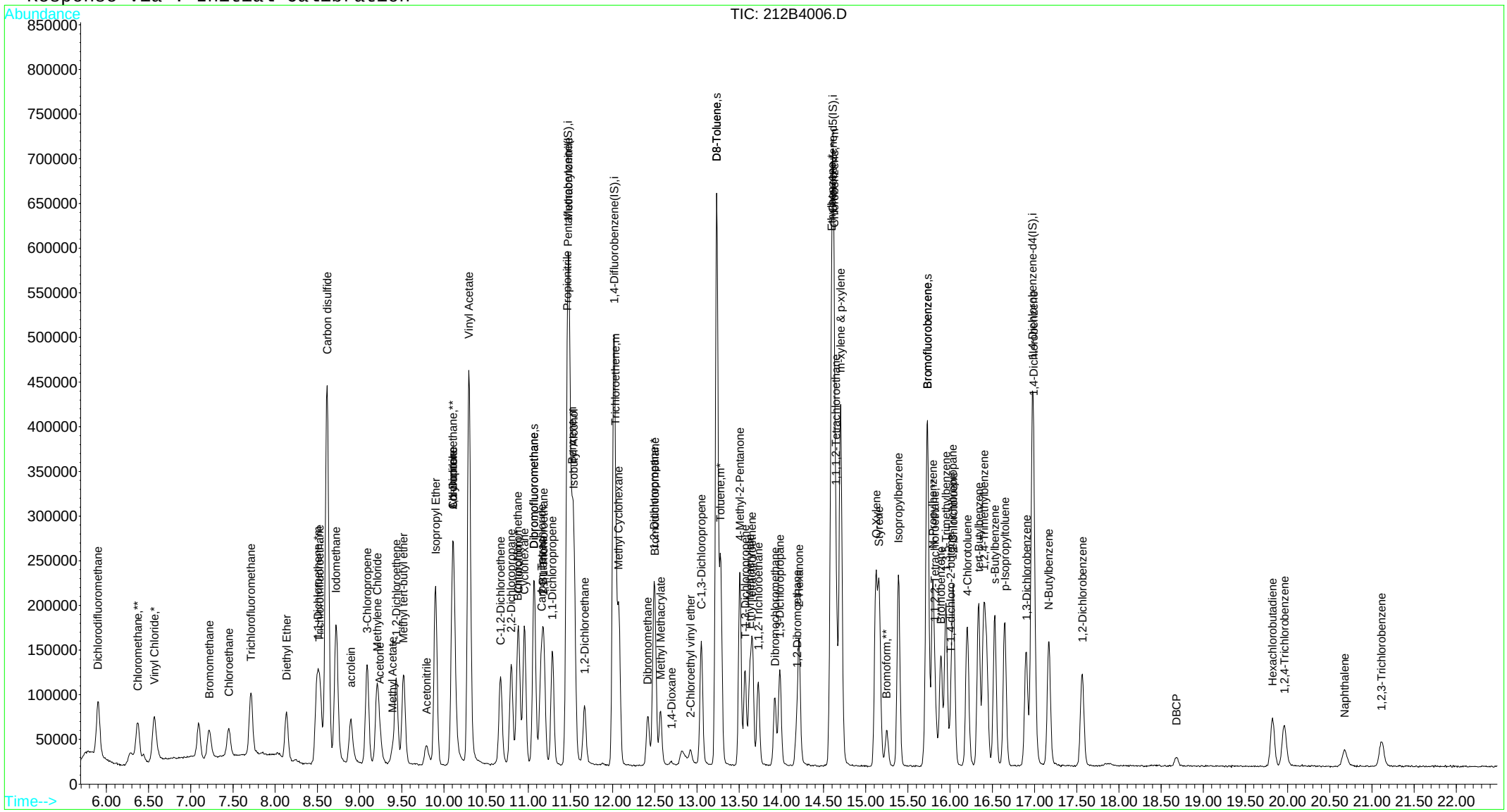
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	50292	11.55	ug/kg	87
55) D8-Toluene	13.24	98	409387	50.06	ug/kg	91
57) Toluene	13.28	92	60495	8.45	ug/kg	98
58) Ethyl Methacrylate	13.62	69	29352	10.81	ug/kg	81
59) T-1,3-Dichloropropene	13.57	75	39138	10.24	ug/kg	86
60) 1,1,2-Trichloroethane	13.73	97	19553	9.80	ug/kg	98
61) 1,3-Dichloropropane	13.98	76	40443	11.46	ug/kg	97
62) Tetrachloroethene	13.66	164	19127	9.52	ug/kg	91
63) Dibromochloromethane	13.93	129	26718	9.12	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	19973	9.07	ug/kg	98
65) Chlorobenzene	14.63	112	64862	8.09	ug/kg	87
66) 1,1,1,2-Tetrachloroethane	14.65	131	25923	8.41	ug/kg#	1
67) Ethylbenzene	14.58	106	33001	8.27	ug/kg	92
68) m-xylene & p-xylene	14.70	106	78121	16.47	ug/kg	96
69) O-Xylene	15.12	106	39241	8.62	ug/kg	92
70) Bromoform	15.25	173	12702	10.19	ug/kg	97
71) Styrene	15.16	104	67844	8.49	ug/kg	95
72) Isopropylbenzene	15.39	105	97807	8.47	ug/kg	98
73) 1,2,3-Trichloropropane	16.02	75	23863	9.93	ug/kg	94
74) 1,1,2,2-Tetrachloroethane	15.83	83	19905	10.10	ug/kg	97
76) Bromofluorobenzene	15.73	95	161492	50.45	ug/kg#	80
77) T-1,4-dichloro-2-butene	16.00	53	3999	6.60	ug/kg#	26
78) N-Propylbenzene	15.80	91	112715	8.77	ug/kg	97
80) Bromobenzene	15.89	156	24008	9.38	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.95	105	71843	7.90	ug/kg	99
82) 2-Chlorotoluene	16.04	91	67023	8.04	ug/kg	96
83) 4-Chlorotoluene	16.21	91	67827	8.04	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.40	105	72509	8.06	ug/kg	98
85) s-Butylbenzene	16.53	105	87404	7.89	ug/kg	98
86) tert-Butylbenzene	16.33	119	63801	7.74	ug/kg	96
87) p-Isopropyltoluene	16.65	119	74825	8.00	ug/kg	98
88) 1,3-Dichlorobenzene	16.90	146	40132	8.71	ug/kg	98
89) 1,4-Dichlorobenzene	17.00	146	40066	8.39	ug/kg	98
90) 1,2-Dichlorobenzene	17.56	146	34272	8.88	ug/kg	97
91) N-Butylbenzene	17.17	91	62526	8.76	ug/kg	100
92) DBCP	18.68	75	2442	11.44	ug/kg	98
93) Naphthalene	20.68	128	15375	9.70	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	14645	11.25	ug/kg	93
95) Hexachlorobutadiene	19.82	225	8964	11.02	ug/kg	98
96) 1,2,3-Trichlorobenzene	21.11	180	9113	10.79	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4006.D Vial: 6
Acq On : 4 Feb 2021 10:23 am Operator: nmc
Sample : AA64808-cal5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4006.D Vial: 6
Acq On : 4 Feb 2021 10:23 am Operator: nmc
Sample : AA64808-cal5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.46	168	251747	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.01	114	453865	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.61	82	225182	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.97	152	152185	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	172347	60.22	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 120.44%			
54) D8-Toluene	13.23	98	509968	66.37	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 132.74%			
75) Bromofluorobenzene	15.73	95	204043	66.68	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 133.36%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.90	85	94457	18.16	ug/kg	98
3) Chloromethane	6.37	50	86745	16.76	ug/kg	98
4) Vinyl Chloride	6.57	62	84311	19.23	ug/kg	88
5) Bromomethane	7.21	96	36565	13.22	ug/kg	96
6) Chloroethane	7.45	64	46882	15.08	ug/kg	96
7) Trichlorofluoromethane	7.71	101	88047	12.12	ug/kg	98
8) Trichlorotrifluoroethane	8.53	101	52364	21.41	ug/kg	93
9) acrolein	8.90	56	75580	546.52	ug/kg	97
10) Acetone	9.24	43	51584	95.42	ug/kg	90
11) 1,1-Dichloroethene	8.50	96	48035	19.70	ug/kg	98
12) 3-Chloropropene	9.09	76	34808	26.64	ug/kg	62
13) Acetonitrile	9.79	41	42329	189.49	ug/kg	93
14) Iodomethane	8.72	142	290738	111.13	ug/kg	89
15) Carbon disulfide	8.62	76	956026	158.27	ug/kg	100
16) Methylene Chloride	9.21	84	56587	22.30	ug/kg	87
17) Methyl tert-butyl ether	9.53	73	122350	22.47	ug/kg	93
18) Acrylonitrile	10.11	53	252767	214.73	ug/kg	97
19) T-1,2-Dichloroethene	9.43	96	54894	20.95	ug/kg	96
20) Isopropyl Ether	9.90	45	255064	17.47	ug/kg	94
21) C-1,2-Dichloroethene	10.67	96	59946	19.36	ug/kg	96
22) 1,1-Dichloroethane	10.11	63	112919	19.61	ug/kg	100
23) Vinyl Acetate	10.30	43	702107	87.62	ug/kg	97
24) Chloroprene	10.10	88	51874	22.75	ug/kg	91
25) 2-Butanone	11.17	72	17799	115.34	ug/kg	57
26) Propionitrile	11.45	54	46823	211.49	ug/kg	100
27) 2,2-Dichloropropane	10.80	77	86187	21.94	ug/kg	94
28) Methacrylonitrile	11.48	67	161012	218.40	ug/kg	73
29) Chloroform	10.89	83	105240	22.10	ug/kg	94
31) Dibromofluoromethane	11.07	113	172347	60.22	ug/kg	100
32) Bromochloromethane	10.87	128	28607	18.77	ug/kg	94
33) 1,1,1-Trichloroethane	11.19	97	77409	16.85	ug/kg	98
34) 1,1-Dichloropropene	11.28	75	78284	20.20	ug/kg	96
35) Diethyl Ether	8.14	59	43940	22.31	ug/kg	89
36) Methyl Acetate	9.39	74	6231	25.74	ug/kg#	48
37) Cyclohexane	10.95	56	93684	19.61	ug/kg	95
39) Methyl Cyclohexane	12.08	55	67557	19.39	ug/kg	98
40) Carbon Tetrachloride	11.15	117	78894	17.73	ug/kg	98
41) 1,2-Dichloroethane	11.67	62	70280	20.09	ug/kg	98
42) Benzene	11.52	78	209553	20.17	ug/kg	98
43) Isobutyl Alcohol	11.55	43	71606	413.90	ug/kg#	80
44) Trichloroethene	12.04	130	58125	19.95	ug/kg	95
45) 1,2-Dichloropropane	12.49	63	64754	24.51	ug/kg	88
46) Methyl Methacrylate	12.57	100	11483	23.72	ug/kg	86
47) 1,4-Dioxane	12.70	88	3728	528.44	ug/kg	88
48) Bromodichloromethane	12.51	83	79114	21.98	ug/kg	100
49) Dibromomethane	12.41	93	30600	20.04	ug/kg	91
50) 4-Methyl-2-Pentanone	13.51	100	23802	101.57	ug/kg	81
51) 2-Chloroethyl vinyl ether	12.92	63	6425m	455.80	ug/kg	
52) 2-Hexanone	14.21	43	132461	91.11	ug/kg	89

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4006.D Vial: 6
Acq On : 4 Feb 2021 10:23 am Operator: nmc
Sample : AA64808-cal5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	100788	24.64	ug/kg	85
55) D8-Toluene	13.23	98	509968	66.37	ug/kg	92
57) Toluene	13.28	92	121922	17.81	ug/kg	99
58) Ethyl Methacrylate	13.62	69	57451	22.14	ug/kg	79
59) T-1,3-Dichloropropene	13.57	75	77853	21.31	ug/kg	88
60) 1,1,2-Trichloroethane	13.73	97	38435	20.16	ug/kg	95
61) 1,3-Dichloropropane	13.98	76	81449	24.15	ug/kg	98
62) Tetrachloroethene	13.66	164	38734	20.16	ug/kg	92
63) Dibromochloromethane	13.92	129	55299	19.75	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	41059	19.51	ug/kg	99
65) Chlorobenzene	14.63	112	133147	17.36	ug/kg	90
66) 1,1,1,2-Tetrachloroethane	14.65	131	53236	18.07	ug/kg#	34
67) Ethylbenzene	14.59	106	68905	18.06	ug/kg	94
68) m-xylene & p-xylene	14.70	106	161532	35.62	ug/kg	96
69) O-Xylene	15.12	106	81494	18.72	ug/kg	94
70) Bromoform	15.25	173	25982	21.80	ug/kg	98
71) Styrene	15.16	104	142255	18.61	ug/kg	94
72) Isopropylbenzene	15.39	105	203365	18.41	ug/kg	100
73) 1,2,3-Trichloropropane	16.02	75	44205	19.24	ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.82	83	39331	20.88	ug/kg	98
76) Bromofluorobenzene	15.73	95	204043	66.68	ug/kg#	79
77) T-1,4-dichloro-2-butene	16.00	53	9370	16.17	ug/kg#	72
78) N-Propylbenzene	15.80	91	229784	18.70	ug/kg	98
80) Bromobenzene	15.89	156	49831	20.03	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.95	105	148766	16.83	ug/kg	100
82) 2-Chlorotoluene	16.04	91	138910	17.15	ug/kg	97
83) 4-Chlorotoluene	16.20	91	143066	17.46	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.40	105	153288	17.54	ug/kg	98
85) s-Butylbenzene	16.53	105	182838	16.98	ug/kg	97
86) tert-Butylbenzene	16.34	119	134893	16.84	ug/kg	96
87) p-Isopropyltoluene	16.65	119	156008	17.17	ug/kg	98
88) 1,3-Dichlorobenzene	16.90	146	83868	18.72	ug/kg	98
89) 1,4-Dichlorobenzene	17.00	146	83693	18.02	ug/kg	99
90) 1,2-Dichlorobenzene	17.56	146	72762	19.40	ug/kg	97
91) N-Butylbenzene	17.17	91	132796	19.13	ug/kg	97
92) DBCP	18.69	75	4548	21.93	ug/kg	91
93) Naphthalene	20.68	128	35321	22.94	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	30716	24.29	ug/kg	97
95) Hexachlorobutadiene	19.82	225	19162	24.24	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	19915	24.26	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4007.D Vial: 7
Acq On : 4 Feb 2021 10:52 am Operator: nmc
Sample : AA64808-cal6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	268442	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.02	114	494605	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.61	82	245390	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.97	152	165726	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	139345	45.66	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 91.32%			
54) D8-Toluene	13.23	98	420410	50.21	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 100.42%			
75) Bromofluorobenzene	15.73	95	175148	52.53	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 105.06%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.91	85	266948	48.12	ug/kg	99
3) Chloromethane	6.38	50	255630	46.32	ug/kg	99
4) Vinyl Chloride	6.57	62	238317	50.97	ug/kg	99
5) Bromomethane	7.22	96	91261	30.94	ug/kg	95
6) Chloroethane	7.46	64	122492	38.22	ug/kg	97
7) Trichlorofluoromethane	7.72	101	250845	32.39	ug/kg	98
8) Trichlorotrifluoroethane	8.54	101	144446	55.38	ug/kg	93
9) acrolein	8.90	56	229435	932.98	ug/kg	97
10) Acetone	9.25	43	148978	258.43	ug/kg	88
11) 1,1-Dichloroethene	8.50	96	134893	51.89	ug/kg	99
12) 3-Chloropropene	9.09	76	95274	68.39	ug/kg	64
13) Acetonitrile	9.79	41	141470	593.91	ug/kg	98
14) Iodomethane	8.73	142	905737	308.20	ug/kg	88
15) Carbon disulfide	8.62	76	2571375	399.23	ug/kg	100
16) Methylene Chloride	9.21	84	154713	57.17	ug/kg	86
17) Methyl tert-butyl ether	9.53	73	354527	61.07	ug/kg	92
18) Acrylonitrile	10.11	53	703410	560.40	ug/kg	99
19) T-1,2-Dichloroethene	9.44	96	151205	54.13	ug/kg	95
20) Isopropyl Ether	9.90	45	711946	45.74	ug/kg	94
21) C-1,2-Dichloroethene	10.68	96	167158	50.63	ug/kg	95
22) 1,1-Dichloroethane	10.11	63	305447	49.74	ug/kg	99
23) Vinyl Acetate	10.30	43	1968403	230.36	ug/kg	96
24) Chloroprene	10.10	88	145721	59.93	ug/kg	90
25) 2-Butanone	11.17	72	52922	321.61	ug/kg	56
26) Propionitrile	11.45	54	144446	611.87	ug/kg	100
27) 2,2-Dichloropropane	10.80	77	234663	56.01	ug/kg	99
28) Methacrylonitrile	11.49	67	466409	593.31	ug/kg	72
29) Chloroform	10.90	83	286355	56.40	ug/kg	96
31) Dibromofluoromethane	11.07	113	139345	45.66	ug/kg	100
32) Bromochloromethane	10.87	128	81556	50.18	ug/kg	94
33) 1,1,1-Trichloroethane	11.18	97	213862	43.65	ug/kg	99
34) 1,1-Dichloropropene	11.29	75	220679	53.40	ug/kg	96
35) Diethyl Ether	8.13	59	127832	60.87	ug/kg	88
36) Methyl Acetate	9.39	74	18122	70.21	ug/kg#	53
37) Cyclohexane	10.96	56	258717	50.79	ug/kg	94
39) Methyl Cyclohexane	12.07	55	190509	50.18	ug/kg	96
40) Carbon Tetrachloride	11.15	117	220505	45.48	ug/kg	100
41) 1,2-Dichloroethane	11.67	62	199635	52.37	ug/kg	99
42) Benzene	11.53	78	571339	50.46	ug/kg	99
43) Isobutyl Alcohol	11.54	43	208792	1107.47	ug/kg#	77
44) Trichloroethene	12.04	130	162085	51.04	ug/kg	99
45) 1,2-Dichloropropane	12.49	63	179961	62.50	ug/kg	88
46) Methyl Methacrylate	12.57	100	32882	62.34	ug/kg	78
47) 1,4-Dioxane	12.70	88	11121	1446.53	ug/kg	93
48) Bromodichloromethane	12.50	83	221635	56.51	ug/kg	100
49) Dibromomethane	12.41	93	91996	55.30	ug/kg	92
50) 4-Methyl-2-Pentanone	13.51	100	72881	285.39	ug/kg	79
51) 2-Chloroethyl vinyl ether	12.92	63	34992m	2277.91	ug/kg	
52) 2-Hexanone	14.21	43	400153	252.56	ug/kg	89

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4007.D Vial: 7
Acq On : 4 Feb 2021 10:52 am Operator: nmc
Sample : AA64808-cal6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

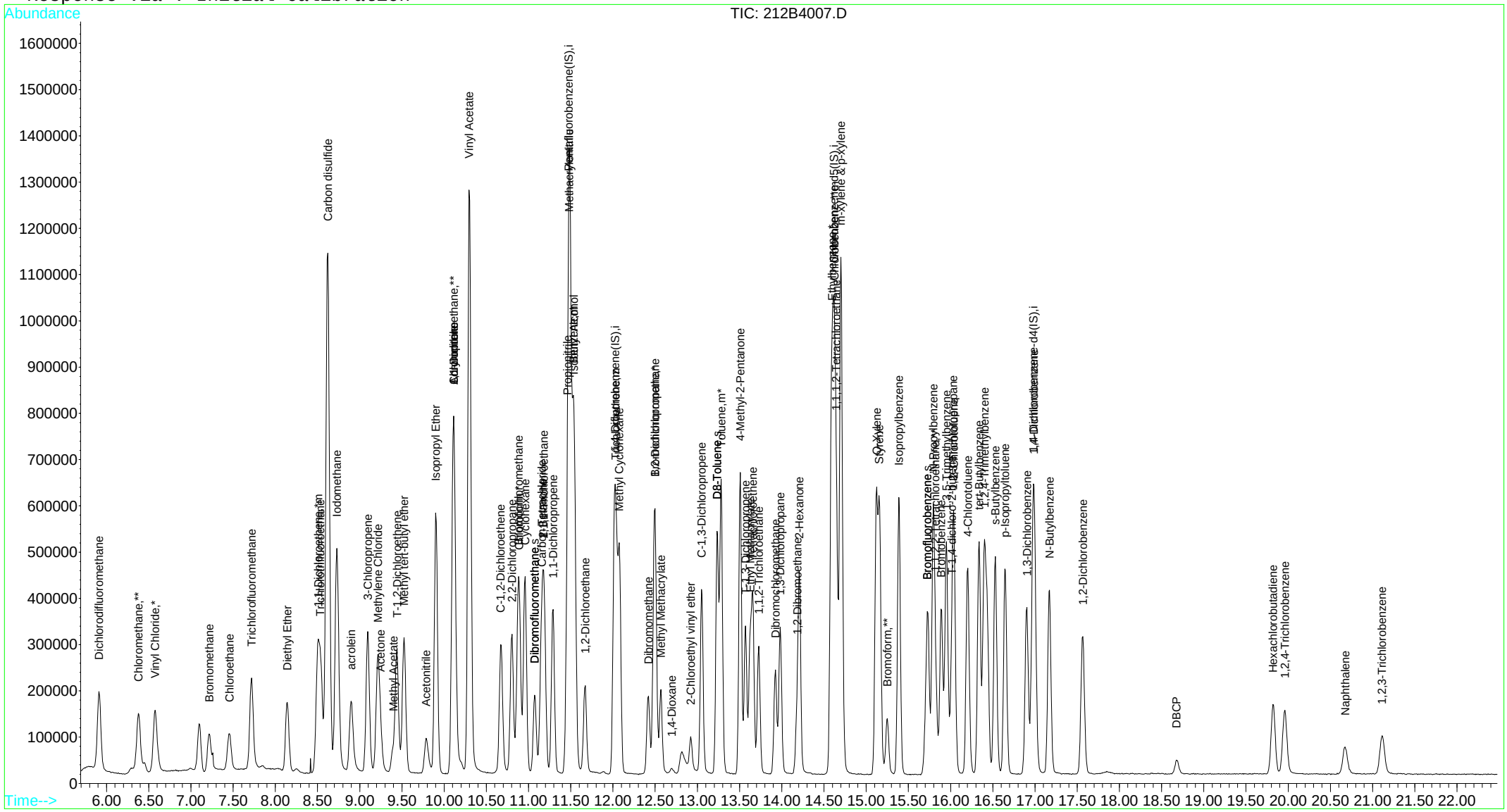
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	290975	65.29	ug/kg	84
55) D8-Toluene	13.23	98	420410	50.21	ug/kg	92
57) Toluene	13.28	92	344430	46.16	ug/kg	99
58) Ethyl Methacrylate	13.62	69	171860	60.79	ug/kg	78
59) T-1,3-Dichloropropene	13.57	75	225651	56.67	ug/kg	88
60) 1,1,2-Trichloroethane	13.73	97	111396	53.62	ug/kg	96
61) 1,3-Dichloropropane	13.98	76	233514	63.54	ug/kg	99
62) Tetrachloroethene	13.66	164	107383	51.29	ug/kg	92
63) Dibromochloromethane	13.92	129	161962	53.07	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	122857	53.56	ug/kg	98
65) Chlorobenzene	14.63	112	370426	44.33	ug/kg	92
66) 1,1,1,2-Tetrachloroethane	14.65	131	149690	46.64	ug/kg#	69
67) Ethylbenzene	14.59	106	190528	45.84	ug/kg	91
68) m-xylene & p-xylene	14.70	106	443734	89.79	ug/kg	94
69) O-Xylene	15.12	106	229143	48.30	ug/kg	95
70) Bromoform	15.25	173	78238	60.23	ug/kg	99
71) Styrene	15.16	104	400385	48.07	ug/kg	95
72) Isopropylbenzene	15.39	105	572305	47.55	ug/kg	99
73) 1,2,3-Trichloropropane	16.02	75	139421	55.67	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.82	83	117214	57.10	ug/kg	98
76) Bromofluorobenzene	15.73	95	175148	52.53	ug/kg#	71
77) T-1,4-dichloro-2-butene	16.01	53	32026	50.71	ug/kg#	84
78) N-Propylbenzene	15.79	91	651757	48.68	ug/kg	98
80) Bromobenzene	15.89	156	143578	52.99	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.95	105	413721	42.98	ug/kg	100
82) 2-Chlorotoluene	16.04	91	386718	43.85	ug/kg	97
83) 4-Chlorotoluene	16.20	91	403979	45.27	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.40	105	419926	44.12	ug/kg	99
85) s-Butylbenzene	16.53	105	515616	43.97	ug/kg	97
86) tert-Butylbenzene	16.34	119	376438	43.15	ug/kg	97
87) p-Isopropyltoluene	16.65	119	433892	43.84	ug/kg	98
88) 1,3-Dichlorobenzene	16.90	146	241975	49.60	ug/kg	97
89) 1,4-Dichlorobenzene	17.00	146	237603	46.99	ug/kg	97
90) 1,2-Dichlorobenzene	17.57	146	212083	51.92	ug/kg	96
91) N-Butylbenzene	17.17	91	373059	49.36	ug/kg	98
92) DBCP	18.68	75	14025	62.10	ug/kg	88
93) Naphthalene	20.67	128	110286	65.76	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	90652	65.82	ug/kg	98
95) Hexachlorobutadiene	19.82	225	54632	63.46	ug/kg	100
96) 1,2,3-Trichlorobenzene	21.11	180	60018	67.15	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4007.D Vial: 7
Acq On : 4 Feb 2021 10:52 am Operator: nmc
Sample : AA64808-cal6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:24 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4008.D Vial: 8
Acq On : 4 Feb 2021 11:20 am Operator: nmc
Sample : AA64808-cal7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:45 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	261684	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.02	114	489998	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.61	82	245966	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.97	152	165062	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	197454	66.37	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 132.74%			
54) D8-Toluene	13.23	98	592343	71.40	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 142.80%			
75) Bromofluorobenzene	15.73	95	240761	72.03	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 144.06%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.91	85	433450	80.15	ug/kg	99
3) Chloromethane	6.38	50	448889	83.44	ug/kg	98
4) Vinyl Chloride	6.57	62	384969	84.47	ug/kg	98
5) Bromomethane	7.20	96	131483	45.72	ug/kg	97
6) Chloroethane	7.45	64	188528	62.60	ug/kg	97
7) Trichlorofluoromethane	7.71	101	398813	52.83	ug/kg	99
8) Trichlorotrifluoroethane	8.54	101	235684	92.69	ug/kg	92
9) acrolein	8.90	56	378851	1219.06	ug/kg	98
10) Acetone	9.24	43	235733	419.48	ug/kg	89
11) 1,1-Dichloroethene	8.50	96	223977	88.38	ug/kg	99
12) 3-Chloropropene	9.10	76	152690	112.43	ug/kg	64
13) Acetonitrile	9.79	41	229333	987.63	ug/kg	100
14) Iodomethane	8.73	142	1511188	502.37	ug/kg	88
15) Carbon disulfide	8.62	76	4053461	645.58	ug/kg	100
16) Methylene Chloride	9.21	84	254766	96.57	ug/kg	86
17) Methyl tert-butyl ether	9.53	73	575998	101.79	ug/kg	93
18) Acrylonitrile	10.11	53	1112073	908.86	ug/kg	98
19) T-1,2-Dichloroethene	9.43	96	251432	92.33	ug/kg	96
20) Isopropyl Ether	9.90	45	1178593	77.67	ug/kg	94
21) C-1,2-Dichloroethene	10.67	96	279780	86.92	ug/kg	95
22) 1,1-Dichloroethane	10.11	63	499043	83.37	ug/kg	99
23) Vinyl Acetate	10.30	43	2991005	359.08	ug/kg	96
24) Chloroprene	10.10	88	229843	96.97	ug/kg	90
25) 2-Butanone	11.17	72	83209	518.73	ug/kg	55
26) Propionitrile	11.45	54	227018	986.47	ug/kg	100
27) 2,2-Dichloropropane	10.80	77	387211	94.81	ug/kg	99
28) Methacrylonitrile	11.49	67	728274	950.35	ug/kg	73
29) Chloroform	10.89	83	471316	95.23	ug/kg	96
31) Dibromofluoromethane	11.07	113	197454	66.37	ug/kg	100
32) Bromochloromethane	10.87	128	134771	85.07	ug/kg	94
33) 1,1,1-Trichloroethane	11.19	97	353476	74.01	ug/kg	99
34) 1,1-Dichloropropene	11.29	75	367406	91.21	ug/kg	96
35) Diethyl Ether	8.14	59	212748	103.92	ug/kg	88
36) Methyl Acetate	9.38	74	30419	120.90	ug/kg#	49
37) Cyclohexane	10.96	56	428029	86.19	ug/kg	95
39) Methyl Cyclohexane	12.07	55	319478	84.94	ug/kg	97
40) Carbon Tetrachloride	11.15	117	365248	76.04	ug/kg	100
41) 1,2-Dichloroethane	11.67	62	332741	88.11	ug/kg	99
42) Benzene	11.53	78	929659	82.87	ug/kg	99
43) Isobutyl Alcohol	11.55	43	331884	1776.92	ug/kg#	76
44) Trichloroethene	12.04	130	273405	86.90	ug/kg	98
45) 1,2-Dichloropropane	12.49	63	301846	105.82	ug/kg	88
46) Methyl Methacrylate	12.57	100	52804	101.04	ug/kg	80
47) 1,4-Dioxane	12.69	88	18257	2397.05	ug/kg	97
48) Bromodichloromethane	12.51	83	361529	93.04	ug/kg	100
49) Dibromomethane	12.41	93	152997	92.83	ug/kg	91
50) 4-Methyl-2-Pentanone	13.51	100	115124	455.04	ug/kg	79
51) 2-Chloroethyl vinyl ether	12.92	63	67360m	4426.23	ug/kg	
52) 2-Hexanone	14.21	43	644760	410.77	ug/kg	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4008.D Vial: 8
Acq On : 4 Feb 2021 11:20 am Operator: nmc
Sample : AA64808-cal7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:45 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

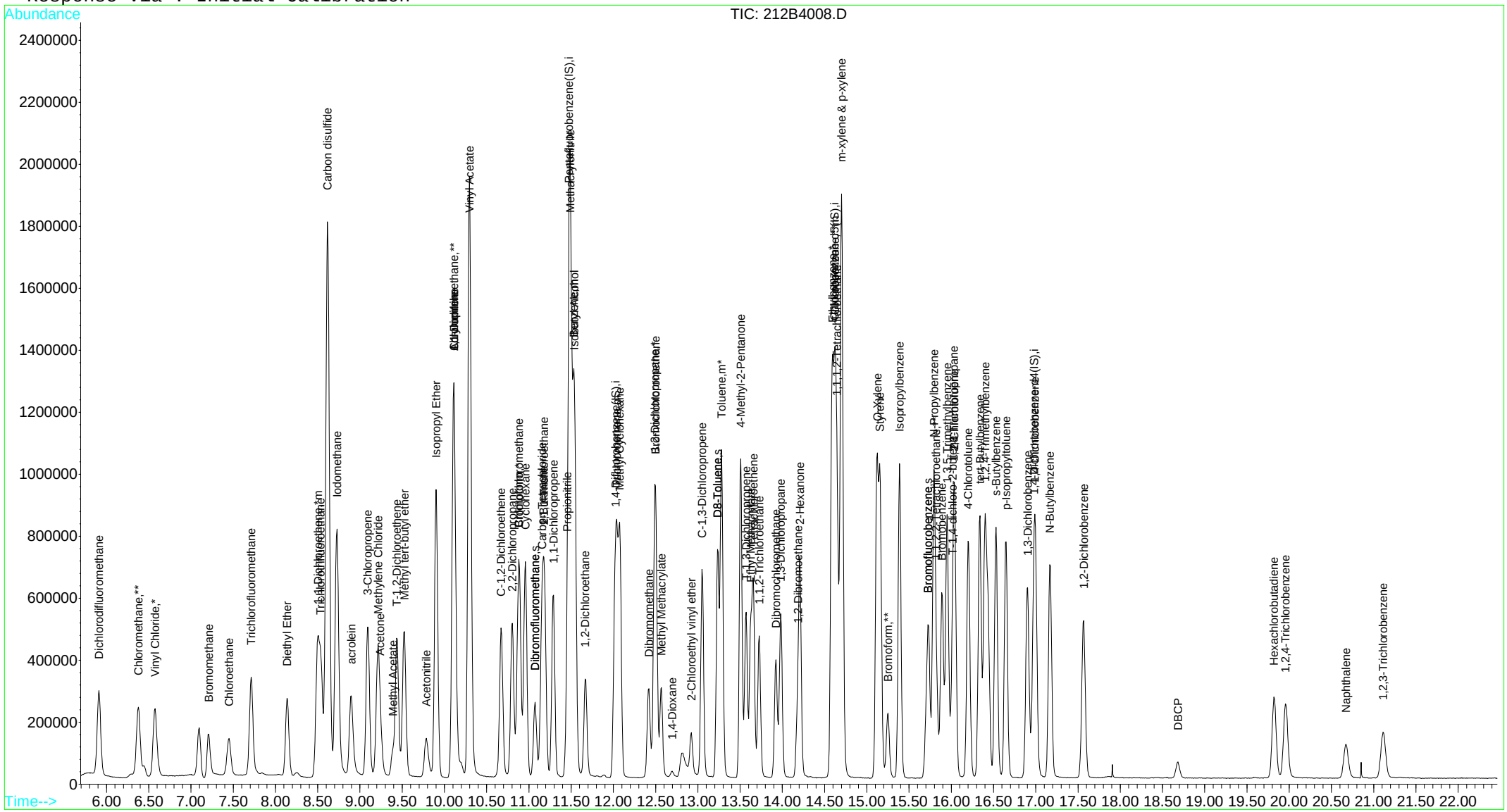
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	481271	109.00	ug/kg	85
55) D8-Toluene	13.23	98	592343	71.40	ug/kg	93
57) Toluene	13.28	92	576479	77.08	ug/kg	98
58) Ethyl Methacrylate	13.62	69	272175	96.04	ug/kg	79
59) T-1,3-Dichloropropene	13.57	75	371790	93.15	ug/kg	89
60) 1,1,2-Trichloroethane	13.73	97	185744	89.20	ug/kg	96
61) 1,3-Dichloropropane	13.98	76	388476	105.46	ug/kg	99
62) Tetrachloroethene	13.66	164	179379	85.48	ug/kg	92
63) Dibromochloromethane	13.92	129	271101	88.63	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	206947	90.01	ug/kg	98
65) Chlorobenzene	14.63	112	619374	73.95	ug/kg	92
66) 1,1,1,2-Tetrachloroethane	14.65	131	250036	77.72	ug/kg#	52
67) Ethylbenzene	14.59	106	324205	77.81	ug/kg	94
68) m-xylene & p-xylene	14.70	106	740329	149.45	ug/kg	94
69) O-Xylene	15.12	106	388280	81.66	ug/kg	95
70) Bromoform	15.25	173	131368	100.90	ug/kg	99
71) Styrene	15.16	104	669285	80.17	ug/kg	96
72) Isopropylbenzene	15.39	105	958064	79.41	ug/kg	100
73) 1,2,3-Trichloropropane	16.02	75	234788	93.54	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.82	83	194510	94.54	ug/kg	98
76) Bromofluorobenzene	15.73	95	240761	72.03	ug/kg#	69
77) T-1,4-dichloro-2-butene	16.01	53	51413	81.21	ug/kg#	77
78) N-Propylbenzene	15.80	91	1107797	82.54	ug/kg	98
80) Bromobenzene	15.89	156	240039	88.94	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.95	105	699645	72.97	ug/kg	99
82) 2-Chlorotoluene	16.04	91	651003	74.12	ug/kg	98
83) 4-Chlorotoluene	16.20	91	686642	77.26	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.40	105	706827	74.57	ug/kg	99
85) s-Butylbenzene	16.53	105	877879	75.17	ug/kg	97
86) tert-Butylbenzene	16.34	119	639692	73.62	ug/kg	97
87) p-Isopropyltoluene	16.65	119	743202	75.40	ug/kg	98
88) 1,3-Dichlorobenzene	16.90	146	417359	85.90	ug/kg	97
89) 1,4-Dichlorobenzene	17.00	146	407146	80.85	ug/kg	97
90) 1,2-Dichlorobenzene	17.57	146	363411	89.32	ug/kg	97
91) N-Butylbenzene	17.17	91	642358	85.34	ug/kg	97
92) DBCP	18.68	75	23446	104.24	ug/kg	84
93) Naphthalene	20.67	128	201255	120.49	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.95	180	158189	115.32	ug/kg	97
95) Hexachlorobutadiene	19.82	225	94900	110.67	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	106768	119.94	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4008.D Vial: 8
Acq On : 4 Feb 2021 11:20 am Operator: nmc
Sample : AA64808-cal7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 11:45 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4009.D Vial: 9
Acq On : 4 Feb 2021 11:49 am Operator: nmc
Sample : AA64808-cal8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 12:22 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.46	168	260297	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.01	114	490462	50.00	ug/kg	0.02
56) Chlorobenzene-d5(IS)	14.61	82	244146	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	165719	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	217259	73.42	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 146.84%#			
54) D8-Toluene	13.24	98	648271	78.07	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 156.14%#			
75) Bromofluorobenzene	15.73	95	260126	78.41	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 156.82%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.91	85	545458	101.40	ug/kg	99
3) Chloromethane	6.37	50	595924	111.36	ug/kg	98
4) Vinyl Chloride	6.57	62	485882	107.18	ug/kg	98
5) Bromomethane	7.21	96	143033	50.00	ug/kg	98
6) Chloroethane	7.45	64	228629	78.19	ug/kg	96
7) Trichlorofluoromethane	7.71	101	501272	66.76	ug/kg	98
8) Trichlorotrifluoroethane	8.54	101	291087	115.09	ug/kg	92
9) acrolein	8.89	56	464280	1354.88	ug/kg	97
10) Acetone	9.25	43	284552	509.05	ug/kg	89
11) 1,1-Dichloroethene	8.50	96	278243	110.38	ug/kg	99
12) 3-Chloropropene	9.09	76	194160	143.73	ug/kg	61
13) Acetonitrile	9.78	41	279660	1210.78	ug/kg	99
14) Iodomethane	8.73	142	1886675	613.78	ug/kg	89
15) Carbon disulfide	8.62	76	5025357	804.64	ug/kg	100
16) Methylene Chloride	9.21	84	311768	118.80	ug/kg	87
17) Methyl tert-butyl ether	9.52	73	699414	124.26	ug/kg	92
18) Acrylonitrile	10.11	53	1338538	1099.78	ug/kg	98
19) T-1,2-Dichloroethene	9.44	96	312966	115.54	ug/kg	95
20) Isopropyl Ether	9.90	45	1428504	94.64	ug/kg	94
21) C-1,2-Dichloroethene	10.67	96	346706	108.29	ug/kg	96
22) 1,1-Dichloroethane	10.12	63	611726	102.74	ug/kg	99
23) Vinyl Acetate	10.30	43	3547967	428.22	ug/kg	97
24) Chloroprene	10.10	88	283721	120.34	ug/kg	86
25) 2-Butanone	11.17	72	99413	623.05	ug/kg	57
26) Propionitrile	11.45	54	272111	1188.72	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	473824	116.64	ug/kg	99
28) Methacrylonitrile	11.48	67	875140	1148.09	ug/kg	72
29) Chloroform	10.89	83	580199	117.85	ug/kg	95
31) Dibromofluoromethane	11.08	113	217259	73.42	ug/kg	100
32) Bromochloromethane	10.87	128	166060	105.38	ug/kg	93
33) 1,1,1-Trichloroethane	11.19	97	435549	91.68	ug/kg	99
34) 1,1-Dichloropropene	11.29	75	451754	112.74	ug/kg	96
35) Diethyl Ether	8.14	59	257260	126.34	ug/kg	88
36) Methyl Acetate	9.39	74	36024	143.94	ug/kg#	53
37) Cyclohexane	10.96	56	528652	107.02	ug/kg	96
39) Methyl Cyclohexane	12.08	55	397206	105.51	ug/kg	98
40) Carbon Tetrachloride	11.15	117	450923	93.78	ug/kg	99
41) 1,2-Dichloroethane	11.67	62	405457	107.27	ug/kg	99
42) Benzene	11.53	78	1138771	101.42	ug/kg	98
43) Isobutyl Alcohol	11.55	43	399981	2139.49	ug/kg#	74
44) Trichloroethene	12.04	130	339120	107.69	ug/kg	97
45) 1,2-Dichloropropane	12.49	63	368729	129.15	ug/kg	88
46) Methyl Methacrylate	12.56	100	64854	123.98	ug/kg	82
47) 1,4-Dioxane	12.69	88	22097	2898.48	ug/kg	96
48) Bromodichloromethane	12.51	83	442698	113.83	ug/kg	100
49) Dibromomethane	12.42	93	186558	113.09	ug/kg	91
50) 4-Methyl-2-Pentanone	13.51	100	138807	548.13	ug/kg	78
51) 2-Chloroethyl vinyl ether	12.92	63	74708m	4904.42	ug/kg	
52) 2-Hexanone	14.21	43	769605	489.85	ug/kg	89

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\020421\212B4009.D Vial: 9
Acq On : 4 Feb 2021 11:49 am Operator: nmc
Sample : AA64808-cal8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 12:22 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Feb 04 08:57:33 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

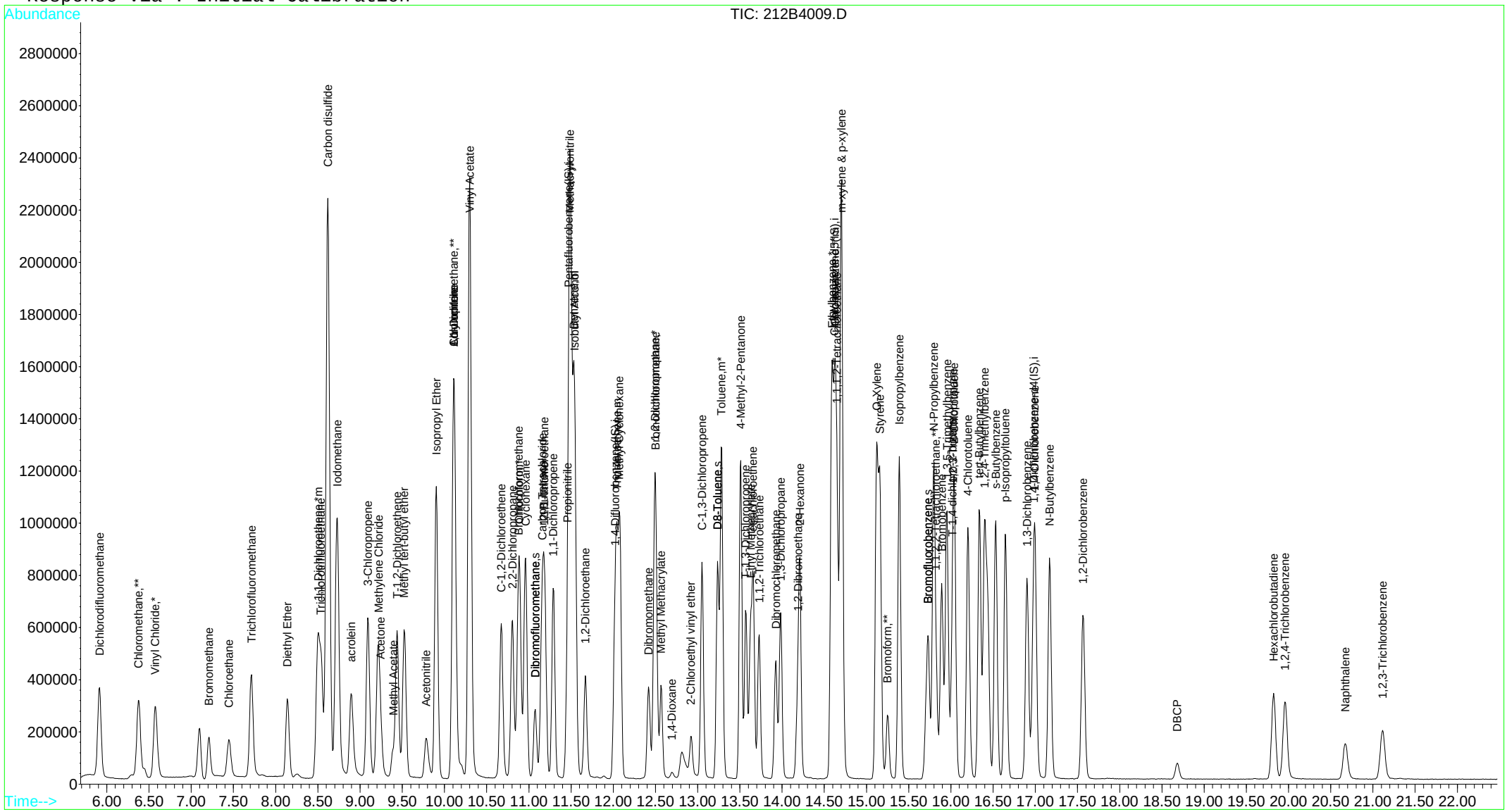
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.05	75	589002	133.27	ug/kg	85
55) D8-Toluene	13.24	98	648271	78.07	ug/kg	92
57) Toluene	13.29	92	708215	95.40	ug/kg	99
58) Ethyl Methacrylate	13.62	69	332153	118.08	ug/kg	79
59) T-1,3-Dichloropropene	13.57	75	458892	115.83	ug/kg	90
60) 1,1,2-Trichloroethane	13.73	97	224363	108.55	ug/kg	95
61) 1,3-Dichloropropane	13.98	76	467561	127.87	ug/kg	99
62) Tetrachloroethene	13.66	164	221542	106.37	ug/kg	92
63) Dibromochloromethane	13.93	129	326916	107.67	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	251302	110.12	ug/kg	100
65) Chlorobenzene	14.63	112	757637	91.13	ug/kg	91
66) 1,1,1,2-Tetrachloroethane	14.65	131	307962	96.44	ug/kg#	73
67) Ethylbenzene	14.59	106	399259	96.54	ug/kg	94
68) m-xylene & p-xylene	14.70	106	912185	185.52	ug/kg	95
69) O-Xylene	15.12	106	477961	101.26	ug/kg	96
70) Bromoform	15.25	173	156913	121.42	ug/kg	99
71) Styrene	15.16	104	789941	95.33	ug/kg	95
72) Isopropylbenzene	15.39	105	1174570	98.08	ug/kg	100
73) 1,2,3-Trichloropropane	16.02	75	276357	110.92	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.83	83	231704	113.45	ug/kg	98
76) Bromofluorobenzene	15.73	95	260126	78.41	ug/kg#	69
77) T-1,4-dichloro-2-butene	16.01	53	63553	101.14	ug/kg#	85
78) N-Propylbenzene	15.80	91	1364361	102.42	ug/kg	98
80) Bromobenzene	15.89	156	297415	109.77	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.95	105	863751	89.73	ug/kg	100
82) 2-Chlorotoluene	16.04	91	801852	90.93	ug/kg	98
83) 4-Chlorotoluene	16.20	91	848982	95.14	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.40	105	839398	88.20	ug/kg	100
85) s-Butylbenzene	16.53	105	1090247	92.98	ug/kg	97
86) tert-Butylbenzene	16.33	119	784167	89.88	ug/kg	97
87) p-Isopropyltoluene	16.65	119	897268	90.67	ug/kg	97
88) 1,3-Dichlorobenzene	16.90	146	509724	104.50	ug/kg	97
89) 1,4-Dichlorobenzene	17.00	146	503931	99.67	ug/kg	96
90) 1,2-Dichlorobenzene	17.56	146	444604	108.84	ug/kg	96
91) N-Butylbenzene	17.17	91	780528	103.28	ug/kg	97
92) DBCP	18.68	75	28300	125.32	ug/kg	83
93) Naphthalene	20.67	128	258975	154.43	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	195531	141.98	ug/kg	98
95) Hexachlorobutadiene	19.82	225	118155	137.25	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.11	180	135487	151.60	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4009.D Vial: 9
Acq On : 4 Feb 2021 11:49 am Operator: nmc
Sample : AA64808-cal8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 4 12:22 2021 Quant Results File: 020421.RES

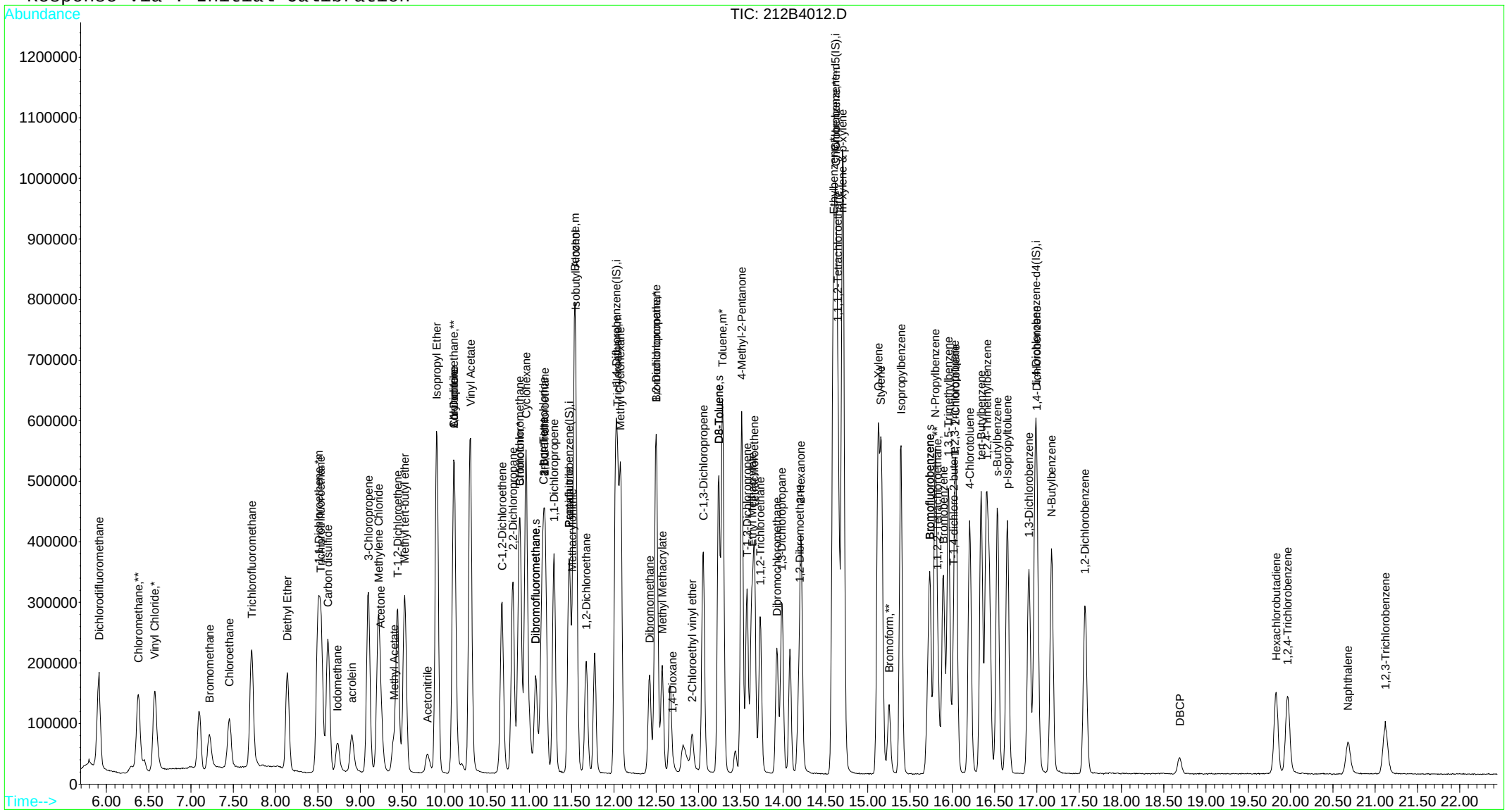
Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\020421\212B4012.D Vial: 12
Acq On : 4 Feb 2021 1:15 pm Operator: nmc
Sample : aa64808-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:58 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration



649 of 653

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4012.D Vial: 12
Acq On : 4 Feb 2021 1:15 pm Operator: nmc
Sample : aa64808-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:58 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	249415	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	452987	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	227625	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	158064	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	127222	49.38	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 98.76%			
54) D8-Toluene	13.24	98	388748	48.62	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.24%			
75) Bromofluorobenzene	15.73	95	162469	49.36	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 98.72%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.91	85	218350	42.35	ug/kg	100
3) Chloromethane	6.38	50	251844	50.32	ug/kg	100
4) Vinyl Chloride	6.57	62	226573	49.76	ug/kg	99
5) Bromomethane	7.22	96	64617	39.71	ug/kg	96
6) Chloroethane	7.46	64	121536	54.67	ug/kg	100
7) Trichlorofluoromethane	7.72	101	246573	54.00	ug/kg	100
8) Trichlorotrifluoroethane	8.54	101	149793	57.17	ug/kg	100
9) acrolein	8.90	56	94025	226.85	ug/kg	99
10) Acetone	9.24	43	153528	278.67	ug/kg	98
11) 1,1-Dichloroethene	8.50	96	131989	50.04	ug/kg	99
12) 3-Chloropropene	9.10	76	94169	51.41	ug/kg	99
13) Acetonitrile	9.80	41	59983	244.09	ug/kg	95
14) Iodomethane	8.74	142	104776	35.31	ug/kg	99
15) Carbon disulfide	8.62	76	502131	50.20	ug/kg	99
16) Methylene Chloride	9.22	84	159392	53.42	ug/kg	99
17) Methyl tert-butyl ether	9.53	73	358999	54.82	ug/kg	99
18) Acrylonitrile	10.11	53	326380	244.48	ug/kg#	75
19) T-1,2-Dichloroethene	9.44	96	152781	51.61	ug/kg	100
20) Isopropyl Ether	9.90	45	724812	54.43	ug/kg	99
21) C-1,2-Dichloroethene	10.68	96	168133	52.64	ug/kg	100
22) 1,1-Dichloroethane	10.11	63	310832	54.31	ug/kg	100
23) Vinyl Acetate	10.30	43	390593	54.32	ug/kg	98
24) Chloroprene	10.11	88	139355	51.62	ug/kg	13
25) 2-Butanone	11.17	72	71375	368.65	ug/kg#	53
26) Propionitrile	11.46	54	13014	48.27	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	244757	53.14	ug/kg	99
28) Methacrylonitrile	11.50	67	47870	53.45	ug/kg	80
29) Chloroform	10.90	83	283534	52.41	ug/kg	100
31) Dibromofluoromethane	11.07	113	127222	49.38	ug/kg	100
32) Bromochloromethane	10.88	128	83712	55.02	ug/kg	99
33) 1,1,1-Trichloroethane	11.19	97	216055	53.24	ug/kg	99
34) 1,1-Dichloropropene	11.29	75	221190	52.50	ug/kg	100
35) Diethyl Ether	8.14	59	136946	55.48	ug/kg	99
36) Methyl Acetate	9.39	74	17798	51.02	ug/kg#	92
37) Cyclohexane	10.96	56	280078	58.55	ug/kg	98
39) Methyl Cyclohexane	12.08	55	198789	54.02	ug/kg	99
40) Carbon Tetrachloride	11.16	117	219819	53.69	ug/kg	100
41) 1,2-Dichloroethane	11.67	62	195321	50.90	ug/kg	99
42) Benzene	11.53	78	602394	54.70	ug/kg#	65
43) Isobutyl Alcohol	11.55	43	148094	737.09	ug/kg#	1
44) Trichloroethene	12.05	130	157584	52.66	ug/kg	99
45) 1,2-Dichloropropane	12.49	63	175948	51.55	ug/kg	99
46) Methyl Methacrylate	12.57	100	31642	53.61	ug/kg	98
47) 1,4-Dioxane	12.70	88	8982	872.64	ug/kg	91
48) Bromodichloromethane	12.51	83	207705	50.54	ug/kg	100
49) Dibromomethane	12.42	93	87488	50.64	ug/kg	100
50) 4-Methyl-2-Pentanone	13.51	100	67042	257.32	ug/kg	97
51) 2-Chloroethyl vinyl ether	12.92	63	27958	269.50	ug/kg#	100
52) 2-Hexanone	14.22	43	359164	248.16	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\020421\212B4012.D Vial: 12
Acq On : 4 Feb 2021 1:15 pm Operator: nmc
Sample : aa64808-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 5 9:58 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Feb 05 09:33:58 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	268440	48.97 ug/kg	99
55) D8-Toluene	13.24	98	388748	48.62 ug/kg	92
57) Toluene	13.28	92	335608	50.94 ug/kg	100
58) Ethyl Methacrylate	13.63	69	162964	50.93 ug/kg	99
59) T-1,3-Dichloropropene	13.57	75	215537	50.63 ug/kg	99
60) 1,1,2-Trichloroethane	13.73	97	102996	48.28 ug/kg	99
61) 1,3-Dichloropropane	13.99	76	213450	48.71 ug/kg	99
62) Tetrachloroethene	13.66	164	103371	52.53 ug/kg	99
63) Dibromochloromethane	13.93	129	147150	49.90 ug/kg	100
64) 1,2-Dibromoethane	14.19	107	114526	51.45 ug/kg	100
65) Chlorobenzene	14.63	112	349209	48.91 ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.65	131	137957	49.63 ug/kg#	71
67) Ethylbenzene	14.59	106	178767	48.41 ug/kg	98
68) m-xylene & p-xylene	14.71	106	413204	93.87 ug/kg	100
69) O-Xylene	15.13	106	213788	47.56 ug/kg	100
70) Bromoform	15.25	173	71238	50.75 ug/kg	100
71) Styrene	15.16	104	372039	49.67 ug/kg	100
72) Isopropylbenzene	15.39	105	526734	47.39 ug/kg	100
73) 1,2,3-Trichloropropane	16.02	75	125188	47.86 ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.83	83	105898	48.42 ug/kg	99
76) Bromofluorobenzene	15.73	95	162469	49.36 ug/kg#	72
77) T-1,4-dichloro-2-butene	16.01	53	26714	45.29 ug/kg	89
78) N-Propylbenzene	15.80	91	607109	48.03 ug/kg	100
80) Bromobenzene	15.90	156	132737	49.67 ug/kg	97
81) 1,3,5-Trimethylbenzene	15.95	105	387066	46.88 ug/kg	99
82) 2-Chlorotoluene	16.04	91	357645	47.59 ug/kg	100
83) 4-Chlorotoluene	16.21	91	370676	47.14 ug/kg	100
84) 1,2,4-Trimethylbenzene	16.40	105	385764	46.12 ug/kg	99
85) s-Butylbenzene	16.53	105	483073	47.73 ug/kg	100
86) tert-Butylbenzene	16.34	119	349289	48.23 ug/kg	98
87) p-Isopropyltoluene	16.65	119	400393	45.57 ug/kg	99
88) 1,3-Dichlorobenzene	16.90	146	224084	47.64 ug/kg	99
89) 1,4-Dichlorobenzene	17.00	146	218791	46.36 ug/kg	100
90) 1,2-Dichlorobenzene	17.57	146	194650	48.30 ug/kg	99
91) N-Butylbenzene	17.17	91	340846	45.43 ug/kg	99
92) DBCP	18.68	75	13013	47.77 ug/kg	96
93) Naphthalene	20.67	128	99550	47.23 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	84053	48.44 ug/kg	100
95) Hexachlorobutadiene	19.83	225	49327	47.60 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.11	180	55489	49.29 ug/kg	99

(#) = qualifier out of range (m) = manual integration

TETRA TECH ISG
TtNUS, Information Systems Group

Completion Ticket

On 2/8/2021 at 3:05 PM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AE00180A1.txt, TE015AE00180A3.txt

If you need to identify this session at a later date refer to Ticket Key:

202128_5313609126_ledd_ENCO

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: February 10, 2021

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ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Thursday, April 29, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN SWMU 090
ENCO Workorder(s): AE02766

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, April 22, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AE02766
SDG: AE02766-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

Samples HMPN-MW0034-015.0-20210421[AE02766-27] and HMPN-MW0035-035.0-20210421[AE02766-28] were received at the laboratory but were not listed on the chain of custody. Per client request, samples were added to end of workorder.

List of instruments used:

Analytical and Preparation Method	SOP Reference Instrument
EPA 8260D / 5030B_MS	OVGCMS2, OVGCMS5

Analysis: EPA 8260D

Manual integrations were performed on samples associated with EPA 8260D. All data & explanations are included in the raw data section of the report.

Affected Samples: AA66091-CCV1, AA66113-CCV1, AA66116-CCV1, AA66133-CCV1, AA66142-CCV1, HMPN-MW0040-042.5-20210419[AE02766-01], HMPN-MW0039-035.0-20210419[AE02766-02RE1], HMPN-MW0041-035.0-20210419[AE02766-03], HMPN-MW0044-045.0-20210419[AE02766-04], HMPN-MW0030-025.0-20210419[AE02766-05RE1], HMPN-MW0031-035.0-20210419[AE02766-06], HMPN-MW0029-015.0-20210419[AE02766-07], HMPN-MW0036-015.0-20210420[AE02766-08], HMPN-MW0011-025.0-20210420[AE02766-09], HMPN-MW0009-020.0-20210420[AE02766-10RE1], HMPN-MW0033-047.5-20210420[AE02766-11], HMPN-MW0032-042.5-20210420[AE02766-12], HMPN-MW0047-025.0-20210421[AE02766-13], HMPN-MW0046-015.0-20210421[AE02766-14], HMPN-MW0038-020.0-20210421[AE02766-15], HMPN-MW0037-010.0-20210421[AE02766-16], HMPN-MW0027-042.5-20210421[AE02766-17], HMPN-MW0028-047.5-20210421[AE02766-18], HMPN-MW0004-010.0-20210421[AE02766-19], HMPN-MW0016-010.0-20210421[AE02766-20], HMPN-MW0045-030.0-20210421[AE02766-21], HMPN-MW0024-060.0-20210422[AE02766-22], HMPN-MW0002-035.0-20210422[AE02766-23], HMPN-MW0008-025.0-20210422[AE02766-24], HMPN-MW0042-042.5-20210422[AE02766-25], HMPN-MW0043-035.0-20210422[AE02766-26], HMPN-MW0034-015.0-20210421[AE02766-27], HMPN-MW0035-035.0-20210421[AE02766-28]
The associated calibration verification standard for multiple analytes exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: 1D26010-BS1, HMPN-MW0040-042.5-20210419[AE02766-01], HMPN-MW0041-035.0-20210419[AE02766-03], HMPN-MW0031-035.0-20210419[AE02766-06], HMPN-MW0036-015.0-20210420[AE02766-08], HMPN-MW0011-025.0-20210420[AE02766-09], HMPN-MW0033-047.5-20210420[AE02766-11], HMPN-MW0032-042.5-20210420[AE02766-12], HMPN-MW0047-025.0-20210421[AE02766-13], HMPN-MW0046-015.0-20210421[AE02766-14], HMPN-MW0038-020.0-20210421[AE02766-15], HMPN-MW0037-010.0-20210421[AE02766-16], HMPN-MW0016-010.0-20210421[AE02766-20], HMPN-MW0045-030.0-20210421[AE02766-21], HMPN-MW0024-060.0-20210422[AE02766-22]
The associated laboratory control sample for Freon 113 exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: HMPN-MW0040-042.5-20210419[AE02766-01], 1D26010-MS1, 1D26010-MSD1
Matrix spike recovery was outside acceptance limits for benzene and Freon 113.

Affected Samples: HMPN-MW0039-035.0-20210419[AE02766-02],
HMPN-MW0044-045.0-20210419[AE02766-04], HMPN-MW0030-025.0-20210419[AE02766-05],
HMPN-MW0031-035.0-20210419[AE02766-06], HMPN-MW0009-020.0-20210420[AE02766-10],
HMPN-MW0033-047.5-20210420[AE02766-11], HMPN-MW0032-042.5-20210420[AE02766-12],
HMPN-MW0027-042.5-20210421[AE02766-17], HMPN-MW0028-047.5-20210421[AE02766-18],
HMPN-MW0002-035.0-20210422[AE02766-23], HMPN-MW0042-042.5-20210422[AE02766-25]
Sample was analyzed at a dilution due to suspected matrix interference.

Affected Samples: HMPN-MW0039-035.0-20210419[AE02766-02],
HMPN-MW0030-025.0-20210419[AE02766-05], HMPN-MW0009-020.0-20210420[AE02766-10]
Initial analysis was over diluted. Sample was reanalyzed at a lower dilution.

Affected Samples: 1D27005-BS1, HMPN-MW0039-035.0-20210419[AE02766-02RE1],
HMPN-MW0044-045.0-20210419[AE02766-04], HMPN-MW0029-015.0-20210419[AE02766-07],
HMPN-MW0009-020.0-20210420[AE02766-10RE1], HMPN-MW0027-042.5-20210421[AE02766-17],
HMPN-MW0028-047.5-20210421[AE02766-18], HMPN-MW0004-010.0-20210421[AE02766-19],
HMPN-MW0002-035.0-20210422[AE02766-23], HMPN-MW0008-025.0-20210422[AE02766-24],
HMPN-MW0042-042.5-20210422[AE02766-25], HMPN-MW0043-035.0-20210422[AE02766-26],
HMPN-MW0034-015.0-20210421[AE02766-27], HMPN-MW0035-035.0-20210421[AE02766-28]
The associated laboratory control sample for benzene and carbon disulfide exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: HMPN-MW0041-035.0-20210419[AE02766-03]
Initial result for cis-1,2-dichloroethene was over the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: 1D28033-BS1, HMPN-MW0030-025.0-20210419[AE02766-05RE1]
The associated laboratory control sample for 1,1-dichloroethane, cyclohexane, and methyl acetate exhibited high bias. Analyte(s) not detected in the sample.

Affected Samples: HMPN-MW0030-025.0-20210419[AE02766-05RE1]
Sample reanalyzed as RE2 due to laboratory control sample outside acceptance limits for trans-1,2-dichloroethane.

Affected Samples: HMPN-MW0031-035.0-20210419[AE02766-06]
Initial result for cis-1,2-dichloroethene and trichloroethene were over the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: HMPN-MW0036-015.0-20210420[AE02766-08]
Sample was reanalyzed due to suspected carry over.

Affected Samples: HMPN-MW0037-010.0-20210421[AE02766-16]
Initial result for vinyl chloride was over the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: HMPN-MW0028-047.5-20210421[AE02766-18]
Initial result for trichloroethene was over the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: 1D27005-MS1, 1D27005-MSD1, 1D27020-MS1, 1D27020-MSD1, 1D28033-MS1, 1D28033-MSD1
Matrix spike recovery was outside acceptance limits for multiple analytes.

Affected Samples: 1D27005-MS1, 1D27005-MSD1, 1D27020-MS1, 1D27020-MSD1, 1D28033-MS1, 1D28033-MSD1
Precision between duplicate matrix spikes of the same sample was outside acceptance limits for multiple analytes.

Affected Samples: AA66091-CCV1, AA66113-CCV1
The continuing calibration verification standard exhibited low bias for 1,2-dibromo-3-chloropropane; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: AA66133-CCV1
The continuing calibration verification standard exhibited low bias for 1,2-dibromo-3-chloropropane. Reported analytes were not affected.

Affected Samples: AA66142-CCV1
The continuing calibration verification standard exhibited low bias for bromoform; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: AA65289-SCV1
Recovery for bromomethane was outside acceptance limits. Analyte was not detected in the samples.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0040-042.5-20210419 **Lab ID: AE02766-01** **Sampled: 04/19/21 10:30** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/26/21 00:00	04/26/21 10:55

Client ID: HMPN-MW0039-035.0-20210419 **Lab ID: AE02766-02RE1** **Sampled: 04/19/21 11:10** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/27/21 00:00	04/27/21 12:37

Client ID: HMPN-MW0041-035.0-20210419 **Lab ID: AE02766-03** **Sampled: 04/19/21 12:00** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/26/21 00:00	04/26/21 11:53

Client ID: HMPN-MW0041-035.0-20210419 **Lab ID: AE02766-03RE1** **Sampled: 04/19/21 12:00** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/27/21 09:01	04/27/21 10:54

Client ID: HMPN-MW0044-045.0-20210419 **Lab ID: AE02766-04** **Sampled: 04/19/21 12:50** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/27/21 00:00	04/27/21 13:06

Client ID: HMPN-MW0030-025.0-20210419 **Lab ID: AE02766-05RE1** **Sampled: 04/19/21 14:10** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/28/21 10:09	04/28/21 11:45

Client ID: HMPN-MW0030-025.0-20210419 **Lab ID: AE02766-05RE2** **Sampled: 04/19/21 14:10** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/28/21 00:00	04/28/21 13:03

Client ID: HMPN-MW0031-035.0-20210419 **Lab ID: AE02766-06** **Sampled: 04/19/21 15:45** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/26/21 00:00	04/26/21 12:21

Client ID: HMPN-MW0031-035.0-20210419 **Lab ID: AE02766-06RE1** **Sampled: 04/19/21 15:45** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/27/21 09:01	04/27/21 11:22

Client ID: HMPN-MW0029-015.0-20210419 **Lab ID: AE02766-07** **Sampled: 04/19/21 16:20** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/03/21	04/27/21 00:00	04/27/21 14:03

Client ID: HMPN-MW0036-015.0-20210420 **Lab ID: AE02766-08** **Sampled: 04/20/21 11:25** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/04/21	04/26/21 00:00	04/26/21 12:50

Client ID: HMPN-MW0036-015.0-20210420 **Lab ID: AE02766-08RE1** **Sampled: 04/20/21 11:25** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/04/21	04/27/21 09:01	04/27/21 11:50

Client ID: HMPN-MW0011-025.0-20210420 **Lab ID: AE02766-09** **Sampled: 04/20/21 12:00** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/04/21	04/26/21 00:00	04/26/21 13:18

Client ID: HMPN-MW0009-020.0-20210420 **Lab ID: AE02766-10RE1** **Sampled: 04/20/21 12:45** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/04/21	04/27/21 00:00	04/27/21 14:32

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0033-047.5-20210420 **Lab ID: AE02766-11** **Sampled: 04/20/21 13:30** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/04/21	04/26/21 00:00	04/26/21 14:16

Client ID: HMPN-MW0032-042.5-20210420 **Lab ID: AE02766-12** **Sampled: 04/20/21 15:20** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/04/21	04/26/21 00:00	04/26/21 14:44

Client ID: HMPN-MW0047-025.0-20210421 **Lab ID: AE02766-13** **Sampled: 04/21/21 09:40** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/26/21 00:00	04/26/21 15:13

Client ID: HMPN-MW0046-015.0-20210421 **Lab ID: AE02766-14** **Sampled: 04/21/21 10:20** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/26/21 00:00	04/26/21 15:41

Client ID: HMPN-MW0038-020.0-20210421 **Lab ID: AE02766-15** **Sampled: 04/21/21 10:50** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/26/21 00:00	04/26/21 16:10

Client ID: HMPN-MW0037-010.0-20210421 **Lab ID: AE02766-16** **Sampled: 04/21/21 11:30** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/26/21 00:00	04/26/21 16:39

Client ID: HMPN-MW0037-010.0-20210421 **Lab ID: AE02766-16RE1** **Sampled: 04/21/21 11:30** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/27/21 09:01	04/27/21 12:18

Client ID: HMPN-MW0027-042.5-20210421 **Lab ID: AE02766-17** **Sampled: 04/21/21 12:10** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/27/21 00:00	04/27/21 15:00

Client ID: HMPN-MW0028-047.5-20210421 **Lab ID: AE02766-18** **Sampled: 04/21/21 12:50** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/27/21 00:00	04/27/21 15:29

Client ID: HMPN-MW0028-047.5-20210421 **Lab ID: AE02766-18RE1** **Sampled: 04/21/21 12:50** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/28/21 10:09	04/28/21 12:13

Client ID: HMPN-MW0004-010.0-20210421 **Lab ID: AE02766-19** **Sampled: 04/21/21 13:25** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/27/21 00:00	04/27/21 15:57

Client ID: HMPN-MW0016-010.0-20210421 **Lab ID: AE02766-20** **Sampled: 04/21/21 14:05** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/26/21 00:00	04/26/21 17:07

Client ID: HMPN-MW0045-030.0-20210421 **Lab ID: AE02766-21** **Sampled: 04/21/21 14:50** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/26/21 00:00	04/26/21 17:36

Client ID: HMPN-MW0024-060.0-20210422 **Lab ID: AE02766-22** **Sampled: 04/22/21 11:40** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/06/21	04/26/21 00:00	04/26/21 18:04

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0002-035.0-20210422 **Lab ID: AE02766-23** **Sampled: 04/22/21 12:20** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/06/21	04/27/21 00:00	04/27/21 16:26

Client ID: HMPN-MW0008-025.0-20210422 **Lab ID: AE02766-24** **Sampled: 04/22/21 12:55** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/06/21	04/27/21 00:00	04/27/21 16:55

Client ID: HMPN-MW0042-042.5-20210422 **Lab ID: AE02766-25** **Sampled: 04/22/21 13:45** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/06/21	04/27/21 00:00	04/27/21 17:23

Client ID: HMPN-MW0043-035.0-20210422 **Lab ID: AE02766-26** **Sampled: 04/22/21 14:45** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/06/21	04/27/21 00:00	04/27/21 17:52

Client ID: HMPN-MW0034-015.0-20210421 **Lab ID: AE02766-27** **Sampled: 04/21/21 15:30** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/27/21 00:00	04/27/21 18:20

Client ID: HMPN-MW0035-035.0-20210421 **Lab ID: AE02766-28** **Sampled: 04/21/21 16:10** **Received: 04/22/21 14:51**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	05/05/21	04/27/21 00:00	04/27/21 18:49

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0040-042.5-20210419 **Lab ID: AE02766-01**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	17		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	2.2	I	0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.5	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0039-035.0-20210419 **Lab ID: AE02766-02RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	680		5.3	25	ug/L	EPA 8260D	
Trichloroethene	11	I	8.9	25	ug/L	EPA 8260D	
Vinyl chloride	200		7.1	25	ug/L	EPA 8260D	

Client ID: HMPN-MW0041-035.0-20210419 **Lab ID: AE02766-03**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	1.6	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	52		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	43		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0041-035.0-20210419 **Lab ID: AE02766-03RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	210		5.3	25	ug/L	EPA 8260D	

Client ID: HMPN-MW0044-045.0-20210419 **Lab ID: AE02766-04**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	900	I	210	1000	ug/L	EPA 8260D	
Freon 113	27000		290	1000	ug/L	EPA 8260D	
Trichloroethene	460	I	360	1000	ug/L	EPA 8260D	

Client ID: HMPN-MW0030-025.0-20210419 **Lab ID: AE02766-05RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	66		0.53	2.5	ug/L	EPA 8260D	
Freon 113	6.0		0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	61		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	5.5		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0031-035.0-20210419 **Lab ID: AE02766-06**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
trans-1,2-Dichloroethene	7.4	I	7.3	25	ug/L	EPA 8260D	
Vinyl chloride	46		7.1	25	ug/L	EPA 8260D	

Client ID: HMPN-MW0031-035.0-20210419 **Lab ID: AE02766-06RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	1500		26	120	ug/L	EPA 8260D	
Trichloroethene	1400		44	120	ug/L	EPA 8260D	

Client ID: HMPN-MW0029-015.0-20210419 **Lab ID: AE02766-07**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	21		0.53	2.5	ug/L	EPA 8260D	
Freon 113	1.3	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	13		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.6	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0036-015.0-20210420 **Lab ID: AE02766-08RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2.5		0.53	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0011-025.0-20210420 **Lab ID: AE02766-09**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	11		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	4.3		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0009-020.0-20210420 **Lab ID: AE02766-10RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	74		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	13		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	9.2		0.71	2.5	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0033-047.5-20210420 **Lab ID: AE02766-11**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	21000		210	1000	ug/L	EPA 8260D	
Trichloroethene	23000		360	1000	ug/L	EPA 8260D	
Vinyl chloride	910	I	280	1000	ug/L	EPA 8260D	

Client ID: HMPN-MW0032-042.5-20210420 **Lab ID: AE02766-12**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	5200		53	250	ug/L	EPA 8260D	
Trichloroethene	5400		89	250	ug/L	EPA 8260D	
Vinyl chloride	170	I	71	250	ug/L	EPA 8260D	

Client ID: HMPN-MW0047-025.0-20210421 **Lab ID: AE02766-13**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2.4	I	0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	0.90	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0046-015.0-20210421 **Lab ID: AE02766-14**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	0.99	I	0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	2.5		0.53	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0038-020.0-20210421 **Lab ID: AE02766-15**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	11		0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	0.58	I	0.53	2.5	ug/L	EPA 8260D	
Toluene	0.95	I	0.72	2.5	ug/L	EPA 8260D	
Vinyl chloride	22		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0037-010.0-20210421 **Lab ID: AE02766-16**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	34		0.62	2.5	ug/L	EPA 8260D	
Chloroethane	1.6	I	0.98	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	3.1		0.53	2.5	ug/L	EPA 8260D	
Toluene	3.0		0.72	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	1.4	I	0.73	2.5	ug/L	EPA 8260D	
Xylenes (Total)	3.9	I	1.3	5.0	ug/L	EPA 8260D	

Client ID: HMPN-MW0037-010.0-20210421 **Lab ID: AE02766-16RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Vinyl chloride	120		3.6	12	ug/L	EPA 8260D	

Client ID: HMPN-MW0027-042.5-20210421 **Lab ID: AE02766-17**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	3200		530	2500	ug/L	EPA 8260D	
Freon 113	27000		730	2500	ug/L	EPA 8260D	
Trichloroethene	98000		890	2500	ug/L	EPA 8260D	

Client ID: HMPN-MW0028-047.5-20210421 **Lab ID: AE02766-18**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	16000		2600	12000	ug/L	EPA 8260D	
Freon 113	140000		3600	12000	ug/L	EPA 8260D	

Client ID: HMPN-MW0028-047.5-20210421 **Lab ID: AE02766-18RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	430000		8900	25000	ug/L	EPA 8260D	

Client ID: HMPN-MW0004-010.0-20210421 **Lab ID: AE02766-19**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	6.5		0.53	2.5	ug/L	EPA 8260D	
Freon 113	1.4	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	29		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0016-010.0-20210421 **Lab ID: AE02766-20**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	66		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	5.7		0.73	2.5	ug/L	EPA 8260D	
Vinyl chloride	10		0.71	2.5	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0045-030.0-20210421 **Lab ID:** AE02766-21

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	6.2		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	1.2	I	0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.6	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0024-060.0-20210422 **Lab ID:** AE02766-22

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	0.90	I	0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0002-035.0-20210422 **Lab ID:** AE02766-23

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	86		5.3	25	ug/L	EPA 8260D	
Freon 113	850		7.3	25	ug/L	EPA 8260D	
Trichloroethene	320		8.9	25	ug/L	EPA 8260D	

Client ID: HMPN-MW0008-025.0-20210422 **Lab ID:** AE02766-24

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	42		0.53	2.5	ug/L	EPA 8260D	
Freon 113	2.1	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	14		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.6	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0042-042.5-20210422 **Lab ID:** AE02766-25

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	3800		26	120	ug/L	EPA 8260D	
Trichloroethene	960		44	120	ug/L	EPA 8260D	
Vinyl chloride	180		36	120	ug/L	EPA 8260D	

Client ID: HMPN-MW0043-035.0-20210422 **Lab ID:** AE02766-26

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	52		0.53	2.5	ug/L	EPA 8260D	
Freon 113	14		0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	7.8		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0034-015.0-20210421 **Lab ID:** AE02766-27

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	11		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	6.4		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0035-035.0-20210421 **Lab ID:** AE02766-28

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	18		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	2.5		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	0.95	I	0.71	2.5	ug/L	EPA 8260D	

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ANALYTICAL RESULTS

Description: HMPN-MW0040-042.5-20210419 **Lab Sample ID:** AE02766-01 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 10:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 10:55	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 10:55	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 10:55	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	QM-07, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**17**		ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	QL-02, QM-19
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Trichloroethene [79-01-6]^	**2.2**	I	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	

ANALYTICAL RESULTS

Description: HMPN-MW0040-042.5-20210419 **Lab Sample ID:** AE02766-01 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 10:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**1.5**	I	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 10:55	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 10:55	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 10:55*	*nmc*	
Dibromofluoromethane	*48*	*1*	*50.0*	*95 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 10:55*	*nmc*	
Toluene-d8	*56*	*1*	*50.0*	*112 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 10:55*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0039-035.0-20210419 **Lab Sample ID:** AE02766-02 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 11:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
2-Butanone [78-93-3]^	45	U	ug/L	10	45	120	1D27005	EPA 8260D	04/27/21 12:37	nmc	QV-01
2-Hexanone [591-78-6]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 12:37	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 12:37	nmc	QV-01
Acetone [67-64-1]^	100	U	ug/L	10	100	250	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Benzene [71-43-2]^	7.1	U	ug/L	10	7.1	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	QV-01
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	QV-01
Carbon disulfide [75-15-0]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 12:37	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**680**		ug/L	10	5.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	QV-01
Cyclohexane [110-82-7]^	9.3	U	ug/L	10	9.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Ethylbenzene [100-41-4]^	6.9	U	ug/L	10	6.9	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Freon 113 [76-13-1]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Isopropylbenzene [98-82-8]^	6.7	U	ug/L	10	6.7	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Methyl acetate [79-20-9]^	9.5	U	ug/L	10	9.5	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Methylene Chloride [75-09-2]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	6.0	U	ug/L	10	6.0	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Styrene [100-42-5]^	6.1	U	ug/L	10	6.1	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Toluene [108-88-3]^	7.2	U	ug/L	10	7.2	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Trichloroethene [79-01-6]^	**11**	I	ug/L	10	8.9	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	

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ANALYTICAL RESULTS

Description: HMPN-MW0039-035.0-20210419 **Lab Sample ID:** AE02766-02 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 11:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**200**		ug/L	10	7.1	25	1D27005	EPA 8260D	04/27/21 12:37	nmc	
Xylenes (Total) [1330-20-7]	13	U	ug/L	10	13	50	1D27005	EPA 8260D	04/27/21 12:37	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 12:37*	*nmc*	
Dibromofluoromethane	*50*	*1*	*50.0*	*101 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 12:37*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*113 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 12:37*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0041-035.0-20210419 **Lab Sample ID:** AE02766-03 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 12:00 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 11:53	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 11:53	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 11:53	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**210**		ug/L	10	5.3	25	1D27020	EPA 8260D	04/27/21 10:54	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
trans-1,2-Dichloroethene [156-60-5]^	**1.6**	I	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Trichloroethene [79-01-6]^	**52**		ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Vinyl chloride [75-01-4]^	**43**		ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 11:53	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 11:53	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0041-035.0-20210419 **Lab Sample ID:** AE02766-03 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 12:00 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 11:53*	*nmc*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*1D27020*	*EPA 8260D*	*04/27/21 10:54*	*kkw*	
Dibromofluoromethane	*47*	*1*	*50.0*	*94 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 11:53*	*nmc*	
Dibromofluoromethane	*56*	*1*	*50.0*	*113 %*	*53-146*	*1D27020*	*EPA 8260D*	*04/27/21 10:54*	*kkw*	
Toluene-d8	*55*	*1*	*50.0*	*111 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 11:53*	*nmc*	
Toluene-d8	*56*	*1*	*50.0*	*111 %*	*41-146*	*1D27020*	*EPA 8260D*	*04/27/21 10:54*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0044-045.0-20210419 **Lab Sample ID:** AE02766-04 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 12:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	320	U	ug/L	400	320	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	220	U	ug/L	400	220	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,1,2-Trichloroethane [79-00-5]^	300	U	ug/L	400	300	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,1-Dichloroethane [75-34-3]^	250	U	ug/L	400	250	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,1-Dichloroethene [75-35-4]^	380	U	ug/L	400	380	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	280	U	ug/L	400	280	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	380	U	ug/L	400	380	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,2-Dibromoethane [106-93-4]^	310	U	ug/L	400	310	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,2-Dichlorobenzene [95-50-1]^	290	U	ug/L	400	290	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,2-Dichloroethane [107-06-2]^	250	U	ug/L	400	250	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,2-Dichloropropane [78-87-5]^	320	U	ug/L	400	320	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,3-Dichlorobenzene [541-73-1]^	310	U	ug/L	400	310	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
1,4-Dichlorobenzene [106-46-7]^	300	U	ug/L	400	300	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
2-Butanone [78-93-3]^	1800	U	ug/L	400	1800	5000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QV-01
2-Hexanone [591-78-6]^	1000	U	ug/L	400	1000	5000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	1000	U	ug/L	400	1000	5000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QV-01
Acetone [67-64-1]^	4000	U	ug/L	400	4000	10000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Benzene [71-43-2]^	280	U	ug/L	400	280	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	210	U	ug/L	400	210	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QV-01
Bromoform [75-25-2]^	300	U	ug/L	400	300	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Bromomethane [74-83-9]^	380	U	ug/L	400	380	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QV-01
Carbon disulfide [75-15-0]^	1000	U	ug/L	400	1000	5000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	380	U	ug/L	400	380	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Chlorobenzene [108-90-7]^	290	U	ug/L	400	290	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Chloroethane [75-00-3]^	390	U	ug/L	400	390	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Chloroform [67-66-3]^	320	U	ug/L	400	320	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Chloromethane [74-87-3]^	330	U	ug/L	400	330	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**900**	I	ug/L	400	210	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	240	U	ug/L	400	240	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	QV-01
Cyclohexane [110-82-7]^	370	U	ug/L	400	370	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Dibromochloromethane [124-48-1]^	200	U	ug/L	400	200	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Dichlorodifluoromethane [75-71-8]^	300	U	ug/L	400	300	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Ethylbenzene [100-41-4]^	280	U	ug/L	400	280	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Freon 113 [76-13-1]^	**27000**		ug/L	400	290	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Isopropylbenzene [98-82-8]^	270	U	ug/L	400	270	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Methyl acetate [79-20-9]^	380	U	ug/L	400	380	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Methylene Chloride [75-09-2]^	1000	U	ug/L	400	1000	5000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	240	U	ug/L	400	240	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Styrene [100-42-5]^	240	U	ug/L	400	240	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Tetrachloroethene [127-18-4]^	300	U	ug/L	400	300	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Toluene [108-88-3]^	290	U	ug/L	400	290	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
trans-1,2-Dichloroethene [156-60-5]^	290	U	ug/L	400	290	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	290	U	ug/L	400	290	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Trichloroethene [79-01-6]^	**460**	I	ug/L	400	360	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Trichlorofluoromethane [75-69-4]^	380	U	ug/L	400	380	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0044-045.0-20210419 **Lab Sample ID:** AE02766-04 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 12:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	280	U	ug/L	400	280	1000	1D27005	EPA 8260D	04/27/21 13:06	nmc	
Xylenes (Total) [1330-20-7]	520	U	ug/L	400	520	2000	1D27005	EPA 8260D	04/27/21 13:06	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 13:06*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 13:06*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*114 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 13:06*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0030-025.0-20210419 **Lab Sample ID:** AE02766-05 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 14:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	QL-02, QV-01
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D28033	EPA 8260D	04/28/21 11:45	kkw	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D28033	EPA 8260D	04/28/21 11:45	kkw	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D28033	EPA 8260D	04/28/21 11:45	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	QV-01
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**66**		ug/L	1	0.53	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	QL-02
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Freon 113 [76-13-1]^	**6.0**		ug/L	1	0.73	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	QL-02, QV-01
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D28019	EPA 8260D	04/28/21 13:03	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Trichloroethene [79-01-6]^	**61**		ug/L	1	0.89	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	

ANALYTICAL RESULTS

Description: HMPN-MW0030-025.0-20210419 **Lab Sample ID:** AE02766-05 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 14:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**5.5**		ug/L	1	0.71	2.5	1D28033	EPA 8260D	04/28/21 11:45	kkw	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D28033	EPA 8260D	04/28/21 11:45	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*56*	*1*	*50.0*	*112 %*	*41-142*	*1D28033*	*EPA 8260D*	*04/28/21 11:45*	*kkw*	
4-Bromofluorobenzene	*42*	*1*	*50.0*	*85 %*	*41-142*	*1D28019*	*EPA 8260D*	*04/28/21 13:03*	*nmc*	
Dibromofluoromethane	*59*	*1*	*50.0*	*118 %*	*53-146*	*1D28033*	*EPA 8260D*	*04/28/21 11:45*	*kkw*	
Dibromofluoromethane	*44*	*1*	*50.0*	*87 %*	*53-146*	*1D28019*	*EPA 8260D*	*04/28/21 13:03*	*nmc*	
Toluene-d8	*63*	*1*	*50.0*	*126 %*	*41-146*	*1D28033*	*EPA 8260D*	*04/28/21 11:45*	*kkw*	
Toluene-d8	*53*	*1*	*50.0*	*105 %*	*41-146*	*1D28019*	*EPA 8260D*	*04/28/21 13:03*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0031-035.0-20210419 **Lab Sample ID:** AE02766-06 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 15:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
2-Butanone [78-93-3]^	45	U	ug/L	10	45	120	1D26010	EPA 8260D	04/26/21 12:21	nmc	
2-Hexanone [591-78-6]^	25	U	ug/L	10	25	120	1D26010	EPA 8260D	04/26/21 12:21	nmc	
4-Methyl-2-pentanone [108-10-1]^	25	U	ug/L	10	25	120	1D26010	EPA 8260D	04/26/21 12:21	nmc	QV-01
Acetone [67-64-1]^	100	U	ug/L	10	100	250	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Benzene [71-43-2]^	7.1	U	ug/L	10	7.1	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	QV-01
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	QV-01
Carbon disulfide [75-15-0]^	25	U	ug/L	10	25	120	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**1500**		ug/L	50	26	120	1D27020	EPA 8260D	04/27/21 11:22	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	QV-01
Cyclohexane [110-82-7]^	9.3	U	ug/L	10	9.3	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Ethylbenzene [100-41-4]^	6.9	U	ug/L	10	6.9	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Freon 113 [76-13-1]^	7.3	U	ug/L	10	7.3	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	QL-02
Isopropylbenzene [98-82-8]^	6.7	U	ug/L	10	6.7	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Methyl acetate [79-20-9]^	9.5	U	ug/L	10	9.5	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Methylene Chloride [75-09-2]^	25	U	ug/L	10	25	120	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	6.0	U	ug/L	10	6.0	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Styrene [100-42-5]^	6.1	U	ug/L	10	6.1	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Toluene [108-88-3]^	7.2	U	ug/L	10	7.2	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
trans-1,2-Dichloroethene [156-60-5]^	**7.4**	I	ug/L	10	7.3	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Trichloroethene [79-01-6]^	**1400**		ug/L	50	44	120	1D27020	EPA 8260D	04/27/21 11:22	kkw	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Vinyl chloride [75-01-4]^	**46**		ug/L	10	7.1	25	1D26010	EPA 8260D	04/26/21 12:21	nmc	
Xylenes (Total) [1330-20-7]	13	U	ug/L	10	13	50	1D26010	EPA 8260D	04/26/21 12:21	nmc	

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ANALYTICAL RESULTS

Description: HMPN-MW0031-035.0-20210419 **Lab Sample ID:** AE02766-06 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 15:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 12:21*	*nmc*	
4-Bromofluorobenzene	*54*	*1*	*50.0*	*108 %*	*41-142*	*1D27020*	*EPA 8260D*	*04/27/21 11:22*	*kkw*	
Dibromofluoromethane	*47*	*1*	*50.0*	*94 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 12:21*	*nmc*	
Dibromofluoromethane	*56*	*1*	*50.0*	*111 %*	*53-146*	*1D27020*	*EPA 8260D*	*04/27/21 11:22*	*kkw*	
Toluene-d8	*55*	*1*	*50.0*	*110 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 12:21*	*nmc*	
Toluene-d8	*55*	*1*	*50.0*	*110 %*	*41-146*	*1D27020*	*EPA 8260D*	*04/27/21 11:22*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0029-015.0-20210419 **Lab Sample ID:** AE02766-07 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 16:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 14:03	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:03	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:03	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:03	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**21**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Freon 113 [76-13-1]^	**1.3**	I	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Trichloroethene [79-01-6]^	**13**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0029-015.0-20210419 **Lab Sample ID:** AE02766-07 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/19/21 16:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**1.6**	I	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 14:03	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 14:03	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 14:03*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 14:03*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*114 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 14:03*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0036-015.0-20210420 **Lab Sample ID:** AE02766-08 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 11:25 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 12:50	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 12:50	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 12:50	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**2.5**		ug/L	1	0.53	2.5	1D27020	EPA 8260D	04/27/21 11:50	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D27020	EPA 8260D	04/27/21 11:50	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 12:50	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 12:50	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0036-015.0-20210420 **Lab Sample ID:** AE02766-08 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 11:25 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 12:50*	*nmc*	
4-Bromofluorobenzene	*56*	*1*	*50.0*	*112 %*	*41-142*	*1D27020*	*EPA 8260D*	*04/27/21 11:50*	*kkw*	
Dibromofluoromethane	*48*	*1*	*50.0*	*96 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 12:50*	*nmc*	
Dibromofluoromethane	*57*	*1*	*50.0*	*114 %*	*53-146*	*1D27020*	*EPA 8260D*	*04/27/21 11:50*	*kkw*	
Toluene-d8	*55*	*1*	*50.0*	*109 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 12:50*	*nmc*	
Toluene-d8	*54*	*1*	*50.0*	*108 %*	*41-146*	*1D27020*	*EPA 8260D*	*04/27/21 11:50*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0011-025.0-20210420 **Lab Sample ID:** AE02766-09 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 12:00 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 13:18	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 13:18	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 13:18	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**11**		ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Vinyl chloride [75-01-4]^	**4.3**		ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 13:18	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 13:18	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0011-025.0-20210420 **Lab Sample ID:** AE02766-09 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 12:00 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 13:18*	*nmc*	
Dibromofluoromethane	*47*	*1*	*50.0*	*95 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 13:18*	*nmc*	
Toluene-d8	*55*	*1*	*50.0*	*110 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 13:18*	*nmc*	

ANALYTICAL RESULTS

Description: HMPN-MW0009-020.0-20210420 **Lab Sample ID:** AE02766-10 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 12:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 14:32	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:32	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:32	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:32	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**74**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Trichloroethene [79-01-6]^	**13**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0009-020.0-20210420 **Lab Sample ID:** AE02766-10 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 12:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**9.2**		ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 14:32	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 14:32	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 14:32*	*nmc*	
Dibromofluoromethane	*50*	*1*	*50.0*	*100 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 14:32*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*114 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 14:32*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0033-047.5-20210420 **Lab Sample ID:** AE02766-11 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 13:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	320	U	ug/L	400	320	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	220	U	ug/L	400	220	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,1,2-Trichloroethane [79-00-5]^	300	U	ug/L	400	300	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,1-Dichloroethane [75-34-3]^	250	U	ug/L	400	250	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,1-Dichloroethene [75-35-4]^	380	U	ug/L	400	380	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	280	U	ug/L	400	280	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	380	U	ug/L	400	380	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,2-Dibromoethane [106-93-4]^	310	U	ug/L	400	310	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,2-Dichlorobenzene [95-50-1]^	290	U	ug/L	400	290	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,2-Dichloroethane [107-06-2]^	250	U	ug/L	400	250	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,2-Dichloropropane [78-87-5]^	320	U	ug/L	400	320	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,3-Dichlorobenzene [541-73-1]^	310	U	ug/L	400	310	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
1,4-Dichlorobenzene [106-46-7]^	300	U	ug/L	400	300	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
2-Butanone [78-93-3]^	1800	U	ug/L	400	1800	5000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
2-Hexanone [591-78-6]^	1000	U	ug/L	400	1000	5000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
4-Methyl-2-pentanone [108-10-1]^	1000	U	ug/L	400	1000	5000	1D26010	EPA 8260D	04/26/21 14:16	nmc	QV-01
Acetone [67-64-1]^	4000	U	ug/L	400	4000	10000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Benzene [71-43-2]^	280	U	ug/L	400	280	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	QV-01
Bromodichloromethane [75-27-4]^	210	U	ug/L	400	210	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Bromoform [75-25-2]^	300	U	ug/L	400	300	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Bromomethane [74-83-9]^	380	U	ug/L	400	380	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	QV-01
Carbon disulfide [75-15-0]^	1000	U	ug/L	400	1000	5000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Carbon Tetrachloride [56-23-5]^	380	U	ug/L	400	380	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Chlorobenzene [108-90-7]^	290	U	ug/L	400	290	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Chloroethane [75-00-3]^	390	U	ug/L	400	390	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Chloroform [67-66-3]^	320	U	ug/L	400	320	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Chloromethane [74-87-3]^	330	U	ug/L	400	330	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**21000**		ug/L	400	210	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	240	U	ug/L	400	240	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	QV-01
Cyclohexane [110-82-7]^	370	U	ug/L	400	370	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Dibromochloromethane [124-48-1]^	200	U	ug/L	400	200	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Dichlorodifluoromethane [75-71-8]^	300	U	ug/L	400	300	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Ethylbenzene [100-41-4]^	280	U	ug/L	400	280	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Freon 113 [76-13-1]^	290	U	ug/L	400	290	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	QL-02
Isopropylbenzene [98-82-8]^	270	U	ug/L	400	270	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Methyl acetate [79-20-9]^	380	U	ug/L	400	380	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Methylene Chloride [75-09-2]^	1000	U	ug/L	400	1000	5000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	240	U	ug/L	400	240	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Styrene [100-42-5]^	240	U	ug/L	400	240	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Tetrachloroethene [127-18-4]^	300	U	ug/L	400	300	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Toluene [108-88-3]^	290	U	ug/L	400	290	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
trans-1,2-Dichloroethene [156-60-5]^	290	U	ug/L	400	290	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	290	U	ug/L	400	290	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Trichloroethene [79-01-6]^	**23000**		ug/L	400	360	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Trichlorofluoromethane [75-69-4]^	380	U	ug/L	400	380	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Vinyl chloride [75-01-4]^	**910**	I	ug/L	400	280	1000	1D26010	EPA 8260D	04/26/21 14:16	nmc	
Xylenes (Total) [1330-20-7]	520	U	ug/L	400	520	2000	1D26010	EPA 8260D	04/26/21 14:16	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0033-047.5-20210420 **Lab Sample ID:** AE02766-11 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 13:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*85 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 14:16*	*nmc*	
Dibromofluoromethane	*49*	*1*	*50.0*	*97 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 14:16*	*nmc*	
Toluene-d8	*55*	*1*	*50.0*	*111 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 14:16*	*nmc*	

ANALYTICAL RESULTS

Description: HMPN-MW0032-042.5-20210420 **Lab Sample ID:** AE02766-12 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 15:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	80	U	ug/L	100	80	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	54	U	ug/L	100	54	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,1,2-Trichloroethane [79-00-5]^	76	U	ug/L	100	76	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,1-Dichloroethane [75-34-3]^	62	U	ug/L	100	62	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,1-Dichloroethene [75-35-4]^	94	U	ug/L	100	94	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	70	U	ug/L	100	70	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	96	U	ug/L	100	96	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,2-Dibromoethane [106-93-4]^	78	U	ug/L	100	78	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,2-Dichlorobenzene [95-50-1]^	73	U	ug/L	100	73	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,2-Dichloroethane [107-06-2]^	63	U	ug/L	100	63	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,2-Dichloropropane [78-87-5]^	80	U	ug/L	100	80	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,3-Dichlorobenzene [541-73-1]^	77	U	ug/L	100	77	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
1,4-Dichlorobenzene [106-46-7]^	76	U	ug/L	100	76	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
2-Butanone [78-93-3]^	450	U	ug/L	100	450	1200	1D26010	EPA 8260D	04/26/21 14:44	nmc	
2-Hexanone [591-78-6]^	250	U	ug/L	100	250	1200	1D26010	EPA 8260D	04/26/21 14:44	nmc	
4-Methyl-2-pentanone [108-10-1]^	250	U	ug/L	100	250	1200	1D26010	EPA 8260D	04/26/21 14:44	nmc	QV-01
Acetone [67-64-1]^	1000	U	ug/L	100	1000	2500	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Benzene [71-43-2]^	71	U	ug/L	100	71	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	QV-01
Bromodichloromethane [75-27-4]^	52	U	ug/L	100	52	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Bromoform [75-25-2]^	75	U	ug/L	100	75	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Bromomethane [74-83-9]^	95	U	ug/L	100	95	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	QV-01
Carbon disulfide [75-15-0]^	250	U	ug/L	100	250	1200	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Carbon Tetrachloride [56-23-5]^	94	U	ug/L	100	94	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Chlorobenzene [108-90-7]^	72	U	ug/L	100	72	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Chloroethane [75-00-3]^	98	U	ug/L	100	98	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Chloroform [67-66-3]^	80	U	ug/L	100	80	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Chloromethane [74-87-3]^	82	U	ug/L	100	82	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**5200**		ug/L	100	53	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	59	U	ug/L	100	59	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	QV-01
Cyclohexane [110-82-7]^	93	U	ug/L	100	93	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Dibromochloromethane [124-48-1]^	50	U	ug/L	100	50	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Dichlorodifluoromethane [75-71-8]^	74	U	ug/L	100	74	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Ethylbenzene [100-41-4]^	69	U	ug/L	100	69	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Freon 113 [76-13-1]^	73	U	ug/L	100	73	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	QL-02
Isopropylbenzene [98-82-8]^	67	U	ug/L	100	67	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Methyl acetate [79-20-9]^	95	U	ug/L	100	95	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Methylene Chloride [75-09-2]^	250	U	ug/L	100	250	1200	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	60	U	ug/L	100	60	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Styrene [100-42-5]^	61	U	ug/L	100	61	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Tetrachloroethene [127-18-4]^	76	U	ug/L	100	76	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Toluene [108-88-3]^	72	U	ug/L	100	72	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
trans-1,2-Dichloroethene [156-60-5]^	73	U	ug/L	100	73	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	73	U	ug/L	100	73	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Trichloroethene [79-01-6]^	**5400**		ug/L	100	89	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Trichlorofluoromethane [75-69-4]^	94	U	ug/L	100	94	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Vinyl chloride [75-01-4]^	**170**	I	ug/L	100	71	250	1D26010	EPA 8260D	04/26/21 14:44	nmc	
Xylenes (Total) [1330-20-7]	130	U	ug/L	100	130	500	1D26010	EPA 8260D	04/26/21 14:44	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0032-042.5-20210420 **Lab Sample ID:** AE02766-12 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/20/21 15:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 14:44*	*nmc*	
Dibromofluoromethane	*47*	*1*	*50.0*	*94 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 14:44*	*nmc*	
Toluene-d8	*54*	*1*	*50.0*	*109 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 14:44*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0047-025.0-20210421 **Lab Sample ID:** AE02766-13 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 09:40 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 15:13	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:13	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:13	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**2.4**	I	ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Vinyl chloride [75-01-4]^	**0.90**	I	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 15:13	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 15:13	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0047-025.0-20210421 **Lab Sample ID:** AE02766-13 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 09:40 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 15:13*	*nmc*	
Dibromofluoromethane	*48*	*1*	*50.0*	*97 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 15:13*	*nmc*	
Toluene-d8	*55*	*1*	*50.0*	*110 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 15:13*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0046-015.0-20210421 **Lab Sample ID:** AE02766-14 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 10:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,1-Dichloroethane [75-34-3]^	**0.99**	I	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 15:41	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:41	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:41	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**2.5**		ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 15:41	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 15:41	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0046-015.0-20210421 **Lab Sample ID:** AE02766-14 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 10:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 15:41*	*nmc*	
Dibromofluoromethane	*49*	*1*	*50.0*	*98 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 15:41*	*nmc*	
Toluene-d8	*56*	*1*	*50.0*	*111 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 15:41*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0038-020.0-20210421 **Lab Sample ID:** AE02766-15 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 10:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,1-Dichloroethane [75-34-3]^	**11**		ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 16:10	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:10	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:10	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**0.58**	I	ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Toluene [108-88-3]^	**0.95**	I	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Vinyl chloride [75-01-4]^	**22**		ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 16:10	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 16:10	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0038-020.0-20210421 **Lab Sample ID:** AE02766-15 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 10:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*44*	*1*	*50.0*	*88 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 16:10*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 16:10*	*nmc*	
Toluene-d8	*58*	*1*	*50.0*	*117 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 16:10*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0037-010.0-20210421 **Lab Sample ID:** AE02766-16 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 11:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,1-Dichloroethane [75-34-3]^	**34**		ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 16:39	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:39	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:39	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Chloroethane [75-00-3]^	**1.6**	I	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**3.1**		ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Toluene [108-88-3]^	**3.0**		ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
trans-1,2-Dichloroethene [156-60-5]^	**1.4**	I	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 16:39	nmc	
Vinyl chloride [75-01-4]^	**120**		ug/L	5	3.6	12	1D27020	EPA 8260D	04/27/21 12:18	kkw	
Xylenes (Total) [1330-20-7]	**3.9**	I	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 16:39	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0037-010.0-20210421 **Lab Sample ID:** AE02766-16 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 11:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 16:39*	*nmc*	
4-Bromofluorobenzene	*52*	*1*	*50.0*	*104 %*	*41-142*	*1D27020*	*EPA 8260D*	*04/27/21 12:18*	*kkw*	
Dibromofluoromethane	*49*	*1*	*50.0*	*99 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 16:39*	*nmc*	
Dibromofluoromethane	*54*	*1*	*50.0*	*107 %*	*53-146*	*1D27020*	*EPA 8260D*	*04/27/21 12:18*	*kkw*	
Toluene-d8	*56*	*1*	*50.0*	*111 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 16:39*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*113 %*	*41-146*	*1D27020*	*EPA 8260D*	*04/27/21 12:18*	*kkw*	

ANALYTICAL RESULTS

Description: HMPN-MW0027-042.5-20210421 **Lab Sample ID:** AE02766-17 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 12:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	800	U	ug/L	1000	800	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	540	U	ug/L	1000	540	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,1,2-Trichloroethane [79-00-5]^	760	U	ug/L	1000	760	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,1-Dichloroethane [75-34-3]^	620	U	ug/L	1000	620	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,1-Dichloroethene [75-35-4]^	940	U	ug/L	1000	940	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	700	U	ug/L	1000	700	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	960	U	ug/L	1000	960	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,2-Dibromoethane [106-93-4]^	780	U	ug/L	1000	780	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,2-Dichlorobenzene [95-50-1]^	730	U	ug/L	1000	730	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,2-Dichloroethane [107-06-2]^	630	U	ug/L	1000	630	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,2-Dichloropropane [78-87-5]^	800	U	ug/L	1000	800	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,3-Dichlorobenzene [541-73-1]^	770	U	ug/L	1000	770	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
1,4-Dichlorobenzene [106-46-7]^	760	U	ug/L	1000	760	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
2-Butanone [78-93-3]^	4500	U	ug/L	1000	4500	12000	1D27005	EPA 8260D	04/27/21 15:00	nmc	QV-01
2-Hexanone [591-78-6]^	2500	U	ug/L	1000	2500	12000	1D27005	EPA 8260D	04/27/21 15:00	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2500	U	ug/L	1000	2500	12000	1D27005	EPA 8260D	04/27/21 15:00	nmc	QV-01
Acetone [67-64-1]^	10000	U	ug/L	1000	10000	25000	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Benzene [71-43-2]^	710	U	ug/L	1000	710	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	520	U	ug/L	1000	520	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	QV-01
Bromoform [75-25-2]^	750	U	ug/L	1000	750	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Bromomethane [74-83-9]^	950	U	ug/L	1000	950	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	QV-01
Carbon disulfide [75-15-0]^	2500	U	ug/L	1000	2500	12000	1D27005	EPA 8260D	04/27/21 15:00	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	940	U	ug/L	1000	940	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Chlorobenzene [108-90-7]^	720	U	ug/L	1000	720	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Chloroethane [75-00-3]^	980	U	ug/L	1000	980	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Chloroform [67-66-3]^	800	U	ug/L	1000	800	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Chloromethane [74-87-3]^	820	U	ug/L	1000	820	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**3200**		ug/L	1000	530	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	590	U	ug/L	1000	590	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	QV-01
Cyclohexane [110-82-7]^	930	U	ug/L	1000	930	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Dibromochloromethane [124-48-1]^	500	U	ug/L	1000	500	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Dichlorodifluoromethane [75-71-8]^	740	U	ug/L	1000	740	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Ethylbenzene [100-41-4]^	690	U	ug/L	1000	690	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Freon 113 [76-13-1]^	**27000**		ug/L	1000	730	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Isopropylbenzene [98-82-8]^	670	U	ug/L	1000	670	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Methyl acetate [79-20-9]^	950	U	ug/L	1000	950	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Methylene Chloride [75-09-2]^	2500	U	ug/L	1000	2500	12000	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	600	U	ug/L	1000	600	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Styrene [100-42-5]^	610	U	ug/L	1000	610	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Tetrachloroethene [127-18-4]^	760	U	ug/L	1000	760	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Toluene [108-88-3]^	720	U	ug/L	1000	720	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
trans-1,2-Dichloroethene [156-60-5]^	730	U	ug/L	1000	730	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	730	U	ug/L	1000	730	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Trichloroethene [79-01-6]^	**98000**		ug/L	1000	890	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Trichlorofluoromethane [75-69-4]^	940	U	ug/L	1000	940	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0027-042.5-20210421 **Lab Sample ID:** AE02766-17 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 12:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	710	U	ug/L	1000	710	2500	1D27005	EPA 8260D	04/27/21 15:00	nmc	
Xylenes (Total) [1330-20-7]	1300	U	ug/L	1000	1300	5000	1D27005	EPA 8260D	04/27/21 15:00	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 15:00*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 15:00*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*115 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 15:00*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0028-047.5-20210421 **Lab Sample ID:** AE02766-18 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 12:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4000	U	ug/L	5000	4000	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	2700	U	ug/L	5000	2700	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,1,2-Trichloroethane [79-00-5]^	3800	U	ug/L	5000	3800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,1-Dichloroethane [75-34-3]^	3100	U	ug/L	5000	3100	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,1-Dichloroethene [75-35-4]^	4700	U	ug/L	5000	4700	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	3500	U	ug/L	5000	3500	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	4800	U	ug/L	5000	4800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,2-Dibromoethane [106-93-4]^	3900	U	ug/L	5000	3900	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,2-Dichlorobenzene [95-50-1]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,2-Dichloroethane [107-06-2]^	3200	U	ug/L	5000	3200	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,2-Dichloropropane [78-87-5]^	4000	U	ug/L	5000	4000	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,3-Dichlorobenzene [541-73-1]^	3800	U	ug/L	5000	3800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
1,4-Dichlorobenzene [106-46-7]^	3800	U	ug/L	5000	3800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
2-Butanone [78-93-3]^	22000	U	ug/L	5000	22000	62000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QV-01
2-Hexanone [591-78-6]^	12000	U	ug/L	5000	12000	62000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	12000	U	ug/L	5000	12000	62000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QV-01
Acetone [67-64-1]^	50000	U	ug/L	5000	50000	120000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Benzene [71-43-2]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	2600	U	ug/L	5000	2600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QV-01
Bromoform [75-25-2]^	3800	U	ug/L	5000	3800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Bromomethane [74-83-9]^	4800	U	ug/L	5000	4800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QV-01
Carbon disulfide [75-15-0]^	12000	U	ug/L	5000	12000	62000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	4700	U	ug/L	5000	4700	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Chlorobenzene [108-90-7]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Chloroethane [75-00-3]^	4900	U	ug/L	5000	4900	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Chloroform [67-66-3]^	4000	U	ug/L	5000	4000	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Chloromethane [74-87-3]^	4100	U	ug/L	5000	4100	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**16000**		ug/L	5000	2600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	3000	U	ug/L	5000	3000	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	QV-01
Cyclohexane [110-82-7]^	4600	U	ug/L	5000	4600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Dibromochloromethane [124-48-1]^	2500	U	ug/L	5000	2500	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Dichlorodifluoromethane [75-71-8]^	3700	U	ug/L	5000	3700	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Ethylbenzene [100-41-4]^	3400	U	ug/L	5000	3400	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Freon 113 [76-13-1]^	**140000**		ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Isopropylbenzene [98-82-8]^	3400	U	ug/L	5000	3400	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Methyl acetate [79-20-9]^	4800	U	ug/L	5000	4800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Methylene Chloride [75-09-2]^	12000	U	ug/L	5000	12000	62000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	3000	U	ug/L	5000	3000	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Styrene [100-42-5]^	3000	U	ug/L	5000	3000	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Tetrachloroethene [127-18-4]^	3800	U	ug/L	5000	3800	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Toluene [108-88-3]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
trans-1,2-Dichloroethene [156-60-5]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Trichloroethene [79-01-6]^	**430000**		ug/L	10000	8900	25000	1D28033	EPA 8260D	04/28/21 12:13	kkw	
Trichlorofluoromethane [75-69-4]^	4700	U	ug/L	5000	4700	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0028-047.5-20210421 **Lab Sample ID:** AE02766-18 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 12:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	3600	U	ug/L	5000	3600	12000	1D27005	EPA 8260D	04/27/21 15:29	nmc	
Xylenes (Total) [1330-20-7]	6500	U	ug/L	5000	6500	25000	1D27005	EPA 8260D	04/27/21 15:29	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*43*	*1*	*50.0*	*86 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 15:29*	*nmc*	
4-Bromofluorobenzene	*55*	*1*	*50.0*	*110 %*	*41-142*	*1D28033*	*EPA 8260D*	*04/28/21 12:13*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 15:29*	*nmc*	
Dibromofluoromethane	*62*	*1*	*50.0*	*124 %*	*53-146*	*1D28033*	*EPA 8260D*	*04/28/21 12:13*	*kkw*	
Toluene-d8	*59*	*1*	*50.0*	*118 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 15:29*	*nmc*	
Toluene-d8	*60*	*1*	*50.0*	*121 %*	*41-146*	*1D28033*	*EPA 8260D*	*04/28/21 12:13*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0004-010.0-20210421 **Lab Sample ID:** AE02766-19 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 13:25 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01, QL-02
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 15:57	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**6.5**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Freon 113 [76-13-1]^	**1.4**	I	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Trichloroethene [79-01-6]^	**29**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0004-010.0-20210421 **Lab Sample ID:** AE02766-19 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 13:25 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 15:57	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 15:57	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 15:57*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 15:57*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*114 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 15:57*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0016-010.0-20210421 **Lab Sample ID:** AE02766-20 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 14:05 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 17:07	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:07	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:07	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**66**		ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
trans-1,2-Dichloroethene [156-60-5]^	**5.7**		ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Vinyl chloride [75-01-4]^	**10**		ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 17:07	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 17:07	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0016-010.0-20210421 **Lab Sample ID:** AE02766-20 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 14:05 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*85 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 17:07*	*nmc*	
Dibromofluoromethane	*49*	*1*	*50.0*	*98 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 17:07*	*nmc*	
Toluene-d8	*56*	*1*	*50.0*	*112 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 17:07*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0045-030.0-20210421 **Lab Sample ID:** AE02766-21 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 14:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 17:36	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:36	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:36	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**6.2**		ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Trichloroethene [79-01-6]^	**1.2**	I	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Vinyl chloride [75-01-4]^	**1.6**	I	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 17:36	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 17:36	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0045-030.0-20210421 **Lab Sample ID:** AE02766-21 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 14:50 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 17:36*	*nmc*	
Dibromofluoromethane	*49*	*1*	*50.0*	*97 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 17:36*	*nmc*	
Toluene-d8	*55*	*1*	*50.0*	*110 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 17:36*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0024-060.0-20210422 **Lab Sample ID:** AE02766-22 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 11:40 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D26010	EPA 8260D	04/26/21 18:04	nmc	
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 18:04	nmc	
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 18:04	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	QL-02
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Trichloroethene [79-01-6]^	**0.90**	I	ug/L	1	0.89	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1D26010	EPA 8260D	04/26/21 18:04	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D26010	EPA 8260D	04/26/21 18:04	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0024-060.0-20210422 **Lab Sample ID:** AE02766-22 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 11:40 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Surrogates	Results	DF	Spike Lvl	% Rec	% Rec Limits	Batch	Method	Analyzed	By	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D26010*	*EPA 8260D*	*04/26/21 18:04*	*nmc*	
Dibromofluoromethane	*48*	*1*	*50.0*	*96 %*	*53-146*	*1D26010*	*EPA 8260D*	*04/26/21 18:04*	*nmc*	
Toluene-d8	*55*	*1*	*50.0*	*111 %*	*41-146*	*1D26010*	*EPA 8260D*	*04/26/21 18:04*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0002-035.0-20210422 **Lab Sample ID:** AE02766-23 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 12:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
2-Butanone [78-93-3]^	45	U	ug/L	10	45	120	1D27005	EPA 8260D	04/27/21 16:26	nmc	QV-01
2-Hexanone [591-78-6]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 16:26	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 16:26	nmc	QV-01
Acetone [67-64-1]^	100	U	ug/L	10	100	250	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Benzene [71-43-2]^	7.1	U	ug/L	10	7.1	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	QV-01
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	QV-01
Carbon disulfide [75-15-0]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 16:26	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**86**		ug/L	10	5.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	QV-01
Cyclohexane [110-82-7]^	9.3	U	ug/L	10	9.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Ethylbenzene [100-41-4]^	6.9	U	ug/L	10	6.9	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Freon 113 [76-13-1]^	**850**		ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Isopropylbenzene [98-82-8]^	6.7	U	ug/L	10	6.7	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Methyl acetate [79-20-9]^	9.5	U	ug/L	10	9.5	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Methylene Chloride [75-09-2]^	25	U	ug/L	10	25	120	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	6.0	U	ug/L	10	6.0	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Styrene [100-42-5]^	6.1	U	ug/L	10	6.1	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Toluene [108-88-3]^	7.2	U	ug/L	10	7.2	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Trichloroethene [79-01-6]^	**320**		ug/L	10	8.9	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	

ANALYTICAL RESULTS

Description: HMPN-MW0002-035.0-20210422 **Lab Sample ID:** AE02766-23 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 12:20 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	7.1	U	ug/L	10	7.1	25	1D27005	EPA 8260D	04/27/21 16:26	nmc	
Xylenes (Total) [1330-20-7]	13	U	ug/L	10	13	50	1D27005	EPA 8260D	04/27/21 16:26	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 16:26*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 16:26*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*115 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 16:26*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0008-025.0-20210422 **Lab Sample ID:** AE02766-24 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 12:55 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 16:55	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 16:55	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 16:55	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 16:55	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**42**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Freon 113 [76-13-1]^	**2.1**	I	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Trichloroethene [79-01-6]^	**14**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0008-025.0-20210422 **Lab Sample ID:** AE02766-24 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 12:55 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**1.6**	I	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 16:55	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 16:55	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*83 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 16:55*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 16:55*	*nmc*	
Toluene-d8	*58*	*1*	*50.0*	*115 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 16:55*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0042-042.5-20210422 **Lab Sample ID:** AE02766-25 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 13:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
2-Butanone [78-93-3]^	220	U	ug/L	50	220	620	1D27005	EPA 8260D	04/27/21 17:23	nmc	QV-01
2-Hexanone [591-78-6]^	120	U	ug/L	50	120	620	1D27005	EPA 8260D	04/27/21 17:23	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	120	U	ug/L	50	120	620	1D27005	EPA 8260D	04/27/21 17:23	nmc	QV-01
Acetone [67-64-1]^	500	U	ug/L	50	500	1200	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Benzene [71-43-2]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	QV-01
Bromoform [75-25-2]^	38	U	ug/L	50	38	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	QV-01
Carbon disulfide [75-15-0]^	120	U	ug/L	50	120	620	1D27005	EPA 8260D	04/27/21 17:23	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Chloroform [67-66-3]^	40	U	ug/L	50	40	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**3800**		ug/L	50	26	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	QV-01
Cyclohexane [110-82-7]^	46	U	ug/L	50	46	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Dibromochloromethane [124-48-1]^	25	U	ug/L	50	25	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Ethylbenzene [100-41-4]^	34	U	ug/L	50	34	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Freon 113 [76-13-1]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Isopropylbenzene [98-82-8]^	34	U	ug/L	50	34	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Methyl acetate [79-20-9]^	48	U	ug/L	50	48	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Methylene Chloride [75-09-2]^	120	U	ug/L	50	120	620	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	30	U	ug/L	50	30	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Styrene [100-42-5]^	30	U	ug/L	50	30	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Toluene [108-88-3]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Trichloroethene [79-01-6]^	**960**		ug/L	50	44	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0042-042.5-20210422 **Lab Sample ID:** AE02766-25 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 13:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**180**		ug/L	50	36	120	1D27005	EPA 8260D	04/27/21 17:23	nmc	
Xylenes (Total) [1330-20-7]	65	U	ug/L	50	65	250	1D27005	EPA 8260D	04/27/21 17:23	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*42*	*1*	*50.0*	*84 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 17:23*	*nmc*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 17:23*	*nmc*	
Toluene-d8	*57*	*1*	*50.0*	*115 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 17:23*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0043-035.0-20210422 **Lab Sample ID:** AE02766-26 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 14:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 17:52	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 17:52	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 17:52	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 17:52	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**52**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Freon 113 [76-13-1]^	**14**		ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Trichloroethene [79-01-6]^	**7.8**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0043-035.0-20210422 **Lab Sample ID:** AE02766-26 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/22/21 14:45 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 17:52	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 17:52	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*44*	*1*	*50.0*	*87 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 17:52*	*nmc*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 17:52*	*nmc*	
Toluene-d8	*60*	*1*	*50.0*	*120 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 17:52*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0034-015.0-20210421 **Lab Sample ID:** AE02766-27 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 15:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 18:20	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:20	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:20	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:20	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**11**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Trichloroethene [79-01-6]^	**6.4**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	

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ANALYTICAL RESULTS

Description: HMPN-MW0034-015.0-20210421 **Lab Sample ID:** AE02766-27 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 15:30 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 18:20	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 18:20	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*83 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 18:20*	*nmc*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 18:20*	*nmc*	
Toluene-d8	*56*	*1*	*50.0*	*113 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 18:20*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0035-035.0-20210421 **Lab Sample ID:** AE02766-28 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 16:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
2-Butanone [78-93-3]^	4.5	U	ug/L	1	4.5	12	1D27005	EPA 8260D	04/27/21 18:49	nmc	QV-01
2-Hexanone [591-78-6]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:49	nmc	QV-01
4-Methyl-2-pentanone [108-10-1]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:49	nmc	QV-01
Acetone [67-64-1]^	10	U	ug/L	1	10	25	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Benzene [71-43-2]^	0.71	U	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	QL-02, QV-01
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	QV-01
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	QV-01
Carbon disulfide [75-15-0]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:49	nmc	QL-02, QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
cis-1,2-Dichloroethene [156-59-2]^	**18**		ug/L	1	0.53	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	QV-01
Cyclohexane [110-82-7]^	0.93	U	ug/L	1	0.93	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Ethylbenzene [100-41-4]^	0.69	U	ug/L	1	0.69	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Isopropylbenzene [98-82-8]^	0.67	U	ug/L	1	0.67	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Methyl acetate [79-20-9]^	0.95	U	ug/L	1	0.95	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Methylene Chloride [75-09-2]^	2.5	U	ug/L	1	2.5	12	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Methyl-tert-Butyl Ether [1634-04-4]^	0.60	U	ug/L	1	0.60	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Styrene [100-42-5]^	0.61	U	ug/L	1	0.61	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Toluene [108-88-3]^	0.72	U	ug/L	1	0.72	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Trichloroethene [79-01-6]^	**2.5**		ug/L	1	0.89	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	

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ANALYTICAL RESULTS

Description: HMPN-MW0035-035.0-20210421 **Lab Sample ID:** AE02766-28 **Received:** 04/22/21 14:51

Matrix: Ground Water **Sampled:** 04/21/21 16:10 **Work Order:** AE02766

Project: NASA KSC HMFN SWMU 090 **Sampled By:** Melissa Bennett

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
Vinyl chloride [75-01-4]^	**0.95**	I	ug/L	1	0.71	2.5	1D27005	EPA 8260D	04/27/21 18:49	nmc	
Xylenes (Total) [1330-20-7]	1.3	U	ug/L	1	1.3	5.0	1D27005	EPA 8260D	04/27/21 18:49	nmc	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*41*	*1*	*50.0*	*82 %*	*41-142*	*1D27005*	*EPA 8260D*	*04/27/21 18:49*	*nmc*	
Dibromofluoromethane	*50*	*1*	*50.0*	*101 %*	*53-146*	*1D27005*	*EPA 8260D*	*04/27/21 18:49*	*nmc*	
Toluene-d8	*56*	*1*	*50.0*	*112 %*	*41-146*	*1D27005*	*EPA 8260D*	*04/27/21 18:49*	*nmc*	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D26010 - EPA 5030B_MS

Blank (1D26010-BLK1) Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 09:58

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*44*	*I*		*ug/L*	*50.0*		*88*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*102*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D26010 - EPA 5030B_MS - Continued

Blank (1D26010-BLK1) Continued Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 09:58

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*58*			*ug/L*	*50.0*		*117*	*41-146*			

LCS (1D26010-BS1) Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 08:04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	19		2.5	ug/L	20.0		94	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0		103	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		99	57-141			
1,1-Dichloroethane	20		2.5	ug/L	20.0		98	57-142			
1,1-Dichloroethene	20		2.5	ug/L	20.0		98	47-139			
1,2,4-Trichlorobenzene	21		2.5	ug/L	20.0		106	52-159			
1,2-Dibromo-3-chloropropane	16		2.5	ug/L	20.0		79	48-150			
1,2-Dibromoethane	18		2.5	ug/L	20.0		92	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0		97	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0		98	50-156			
1,2-Dichloropropane	21		2.5	ug/L	20.0		107	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		98	66-129			
1,4-Dichlorobenzene	19		2.5	ug/L	20.0		94	65-133			
2-Butanone	130		12	ug/L	100		130	10-180			
2-Hexanone	100		12	ug/L	100		101	12-180			
4-Methyl-2-pentanone	110		12	ug/L	100		113	19-180			
Acetone	95		25	ug/L	100		95	10-180			
Benzene	26		2.5	ug/L	20.0		129	56-136			
Bromodichloromethane	22		2.5	ug/L	20.0		112	58-135			
Bromoform	23		2.5	ug/L	20.0		115	46-148			
Bromomethane	9.9		2.5	ug/L	20.0		50	10-173			
Carbon disulfide	25		12	ug/L	20.0		124	43-153			
Carbon Tetrachloride	19		2.5	ug/L	20.0		95	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		98	51-139			
Chloroethane	20		2.5	ug/L	20.0		98	27-180			
Chloroform	21		2.5	ug/L	20.0		104	58-139			
Chloromethane	16		2.5	ug/L	20.0		82	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0		111	56-128			
cis-1,3-Dichloropropene	22		2.5	ug/L	20.0		111	64-128			
Cyclohexane	21		2.5	ug/L	20.0		104	70-130			
Dibromochloromethane	18		2.5	ug/L	20.0		90	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0		82	10-180			
Ethylbenzene	19		2.5	ug/L	20.0		96	63-133			
Freon 113	40		2.5	ug/L	20.0		201	47-173			QL-02
Isopropylbenzene	19		2.5	ug/L	20.0		97	60-132			
m,p-Xylenes	38		5.0	ug/L	40.0		96	64-133			
Methyl acetate	20		2.5	ug/L	20.0		98	70-130			
Methylene Chloride	20		12	ug/L	20.0		101	43-142			
Methyl-tert-Butyl Ether	20		2.5	ug/L	20.0		100	51-145			
o-Xylene	20		2.5	ug/L	20.0		98	61-129			
Styrene	20		2.5	ug/L	20.0		98	59-136			
Tetrachloroethene	24		2.5	ug/L	20.0		118	60-147			
Toluene	21		2.5	ug/L	20.0		104	64-131			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0		108	54-134			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D26010 - EPA 5030B_MS - Continued

LCS (1D26010-BS1) Continued Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 08:04

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0		101	65-149			
Trichloroethene	22		2.5	ug/L	20.0		112	62-135			
Trichlorofluoromethane	18		2.5	ug/L	20.0		88	56-155			
Vinyl chloride	19		2.5	ug/L	20.0		94	20-167			
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*85*	*41-142*			
Dibromofluoromethane	*46*	*I*		*ug/L*	*50.0*		*93*	*53-146*			
Toluene-d8	*55*			*ug/L*	*50.0*		*111*	*41-146*			

Matrix Spike (1D26010-MS1) Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 08:33

Source: AE02766-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	20		2.5	ug/L	20.0	0.80 U	101	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	106	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0	0.76 U	102	57-141			
1,1-Dichloroethane	21		2.5	ug/L	20.0	0.62 U	107	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0	0.94 U	106	47-139			
1,2,4-Trichlorobenzene	21		2.5	ug/L	20.0	0.70 U	103	52-159			
1,2-Dibromo-3-chloropropane	16		2.5	ug/L	20.0	0.96 U	82	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	96	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0	0.73 U	100	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	102	50-156			
1,2-Dichloropropane	23		2.5	ug/L	20.0	0.80 U	113	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0	0.77 U	100	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	98	65-133			
2-Butanone	130		12	ug/L	100	4.5 U	127	10-180			
2-Hexanone	110		12	ug/L	100	2.5 U	113	12-180			
4-Methyl-2-pentanone	120		12	ug/L	100	2.5 U	122	19-180			
Acetone	99		25	ug/L	100	10 U	99	10-180			
Benzene	28		2.5	ug/L	20.0	0.71 U	138	56-136			QM-07
Bromodichloromethane	24		2.5	ug/L	20.0	0.52 U	118	58-135			
Bromoform	23		2.5	ug/L	20.0	0.75 U	117	46-148			
Bromomethane	12		2.5	ug/L	20.0	0.95 U	58	10-173			
Carbon disulfide	24		12	ug/L	20.0	2.5 U	119	43-153			
Carbon Tetrachloride	20		2.5	ug/L	20.0	0.94 U	102	54-156			
Chlorobenzene	20		2.5	ug/L	20.0	0.72 U	102	51-139			
Chloroethane	20		2.5	ug/L	20.0	0.98 U	99	27-180			
Chloroform	21		2.5	ug/L	20.0	0.80 U	107	58-139			
Chloromethane	18		2.5	ug/L	20.0	0.82 U	88	33-154			
cis-1,2-Dichloroethene	40		2.5	ug/L	20.0	17	113	56-128			
cis-1,3-Dichloropropene	23		2.5	ug/L	20.0	0.59 U	116	64-128			
Cyclohexane	22		2.5	ug/L	20.0	0.93 U	108	70-130			
Dibromochloromethane	18		2.5	ug/L	20.0	0.50 U	92	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0	0.74 U	82	10-180			
Ethylbenzene	21		2.5	ug/L	20.0	0.69 U	103	63-133			
Freon 113	41		2.5	ug/L	20.0	0.73 U	203	47-173			QM-19
Isopropylbenzene	20		2.5	ug/L	20.0	0.67 U	102	60-132			
m,p-Xylenes	40		5.0	ug/L	40.0	1.3 U	101	64-133			
Methyl acetate	21		2.5	ug/L	20.0	0.95 U	105	70-130			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D26010 - EPA 5030B_MS - Continued

Matrix Spike (1D26010-MS1) Continued Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 08:33

Source: AE02766-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methylene Chloride	21		12	ug/L	20.0	2.5 U	105	43-142			
Methyl-tert-Butyl Ether	21		2.5	ug/L	20.0	0.60 U	106	51-145			
o-Xylene	21		2.5	ug/L	20.0	0.53 U	104	61-129			
Styrene	21		2.5	ug/L	20.0	0.61 U	103	59-136			
Tetrachloroethene	24		2.5	ug/L	20.0	0.76 U	122	60-147			
Toluene	23		2.5	ug/L	20.0	0.72 U	113	64-131			
trans-1,2-Dichloroethene	23		2.5	ug/L	20.0	0.73 U	116	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	105	65-149			
Trichloroethene	26		2.5	ug/L	20.0	2.2	118	62-135			
Trichlorofluoromethane	18		2.5	ug/L	20.0	0.94 U	90	56-155			
Vinyl chloride	21		2.5	ug/L	20.0	1.5	99	20-167			
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*87*	*41-142*			
Dibromofluoromethane	*47*	*I*		*ug/L*	*50.0*		*94*	*53-146*			
Toluene-d8	*56*			*ug/L*	*50.0*		*112*	*41-146*			

Matrix Spike Dup (1D26010-MSD1) Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 09:01

Source: AE02766-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	19		2.5	ug/L	20.0	0.80 U	97	57-148	4	25	
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0	0.54 U	102	60-139	5	17	
1,1,2-Trichloroethane	20		2.5	ug/L	20.0	0.76 U	100	57-141	2	16	
1,1-Dichloroethane	21		2.5	ug/L	20.0	0.62 U	103	57-142	4	24	
1,1-Dichloroethene	20		2.5	ug/L	20.0	0.94 U	100	47-139	6	16	
1,2,4-Trichlorobenzene	20		2.5	ug/L	20.0	0.70 U	98	52-159	5	24	
1,2-Dibromo-3-chloropropane	16		2.5	ug/L	20.0	0.96 U	78	48-150	6	21	
1,2-Dibromoethane	18		2.5	ug/L	20.0	0.78 U	91	57-140	6	16	
1,2-Dichlorobenzene	19		2.5	ug/L	20.0	0.73 U	96	63-131	5	25	
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	100	50-156	2	18	
1,2-Dichloropropane	22		2.5	ug/L	20.0	0.80 U	109	61-133	4	26	
1,3-Dichlorobenzene	19		2.5	ug/L	20.0	0.77 U	96	66-129	4	23	
1,4-Dichlorobenzene	19		2.5	ug/L	20.0	0.76 U	95	65-133	3	23	
2-Butanone	120		12	ug/L	100	4.5 U	121	10-180	5	29	
2-Hexanone	110		12	ug/L	100	2.5 U	109	12-180	4	28	
4-Methyl-2-pentanone	120		12	ug/L	100	2.5 U	120	19-180	2	24	
Acetone	95		25	ug/L	100	10 U	95	10-180	4	19	
Benzene	27		2.5	ug/L	20.0	0.71 U	134	56-136	3	14	
Bromodichloromethane	23		2.5	ug/L	20.0	0.52 U	113	58-135	5	19	
Bromoform	22		2.5	ug/L	20.0	0.75 U	112	46-148	4	18	
Bromomethane	12		2.5	ug/L	20.0	0.95 U	60	10-173	3	29	
Carbon disulfide	22		12	ug/L	20.0	2.5 U	112	43-153	6	26	
Carbon Tetrachloride	20		2.5	ug/L	20.0	0.94 U	99	54-156	3	27	
Chlorobenzene	20		2.5	ug/L	20.0	0.72 U	98	51-139	4	13	
Chloroethane	19		2.5	ug/L	20.0	0.98 U	97	27-180	2	22	
Chloroform	21		2.5	ug/L	20.0	0.80 U	104	58-139	3	17	
Chloromethane	17		2.5	ug/L	20.0	0.82 U	84	33-154	4	31	
cis-1,2-Dichloroethene	39		2.5	ug/L	20.0	17	108	56-128	3	17	
cis-1,3-Dichloropropene	22		2.5	ug/L	20.0	0.59 U	112	64-128	3	20	
Cyclohexane	21		2.5	ug/L	20.0	0.93 U	104	70-130	5	20	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D26010 - EPA 5030B_MS - Continued

Matrix Spike Dup (1D26010-MSD1) Continued Prepared: 04/26/2021 00:00 Analyzed: 04/26/2021 09:01

Source: AE02766-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Dibromochloromethane	18		2.5	ug/L	20.0	0.50 U	91	50-140	1	18	
Dichlorodifluoromethane	16		2.5	ug/L	20.0	0.74 U	78	10-180	4	26	
Ethylbenzene	19		2.5	ug/L	20.0	0.69 U	97	63-133	5	18	
Freon 113	38		2.5	ug/L	20.0	0.73 U	192	47-173	5	30	QM-19
Isopropylbenzene	20		2.5	ug/L	20.0	0.67 U	98	60-132	4	23	
m,p-Xylenes	38		5.0	ug/L	40.0	1.3 U	96	64-133	5	18	
Methyl acetate	19		2.5	ug/L	20.0	0.95 U	97	70-130	8	20	
Methylene Chloride	20		12	ug/L	20.0	2.5 U	102	43-142	3	23	
Methyl-tert-Butyl Ether	21		2.5	ug/L	20.0	0.60 U	104	51-145	2	22	
o-Xylene	20		2.5	ug/L	20.0	0.53 U	99	61-129	5	16	
Styrene	19		2.5	ug/L	20.0	0.61 U	97	59-136	6	32	
Tetrachloroethene	23		2.5	ug/L	20.0	0.76 U	116	60-147	5	21	
Toluene	21		2.5	ug/L	20.0	0.72 U	106	64-131	6	16	
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.73 U	111	54-134	4	20	
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.73 U	101	65-149	4	17	
Trichloroethene	25		2.5	ug/L	20.0	2.2	114	62-135	3	20	
Trichlorofluoromethane	17		2.5	ug/L	20.0	0.94 U	86	56-155	5	22	
Vinyl chloride	20		2.5	ug/L	20.0	1.5	95	20-167	4	24	
4-Bromofluorobenzene	*42*	*I*		*ug/L*	*50.0*		*85*	*41-142*			
Dibromofluoromethane	*46*	*I*		*ug/L*	*50.0*		*92*	*53-146*			
Toluene-d8	*55*			*ug/L*	*50.0*		*110*	*41-146*			

Batch 1D27005 - EPA 5030B_MS

Blank (1D27005-BLK1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 10:14

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27005 - EPA 5030B_MS - Continued

Blank (1D27005-BLK1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 10:14

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*42*	*I*		*ug/L*	*50.0*		*83*	*41-142*			
Dibromofluoromethane	*50*			*ug/L*	*50.0*		*100*	*53-146*			
Toluene-d8	*55*			*ug/L*	*50.0*		*111*	*41-146*			

LCS (1D27005-BS1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 08:18

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.5	ug/L	20.0		107	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0		105	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		101	57-141			
1,1-Dichloroethane	23		2.5	ug/L	20.0		116	57-142			
1,1-Dichloroethene	24		2.5	ug/L	20.0		122	47-139			
1,2,4-Trichlorobenzene	22		2.5	ug/L	20.0		108	52-159			
1,2-Dibromo-3-chloropropane	16		2.5	ug/L	20.0		79	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0		96	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0		101	63-131			
1,2-Dichloroethane	22		2.5	ug/L	20.0		111	50-156			
1,2-Dichloropropane	23		2.5	ug/L	20.0		117	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		101	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		98	65-133			
2-Butanone	170		12	ug/L	100		168	10-180			
2-Hexanone	110		12	ug/L	100		112	12-180			
4-Methyl-2-pentanone	120		12	ug/L	100		123	19-180			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27005 - EPA 5030B_MS - Continued

LCS (1D27005-BS1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 08:18

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Acetone	110		25	ug/L	100		110	10-180			
Benzene	28		2.5	ug/L	20.0		142	56-136			QL-02
Bromodichloromethane	25		2.5	ug/L	20.0		124	58-135			
Bromoform	23		2.5	ug/L	20.0		116	46-148			
Bromomethane	9.0		2.5	ug/L	20.0		45	10-173			
Carbon disulfide	33		12	ug/L	20.0		164	43-153			QL-02
Carbon Tetrachloride	21		2.5	ug/L	20.0		106	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		103	51-139			
Chloroethane	19		2.5	ug/L	20.0		97	27-180			
Chloroform	24		2.5	ug/L	20.0		118	58-139			
Chloromethane	16		2.5	ug/L	20.0		82	33-154			
cis-1,2-Dichloroethene	25		2.5	ug/L	20.0		124	56-128			
cis-1,3-Dichloropropene	24		2.5	ug/L	20.0		122	64-128			
Cyclohexane	24		2.5	ug/L	20.0		120	70-130			
Dibromochloromethane	18		2.5	ug/L	20.0		92	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0		81	10-180			
Ethylbenzene	20		2.5	ug/L	20.0		101	63-133			
Freon 113	23		2.5	ug/L	20.0		115	47-173			
Isopropylbenzene	20		2.5	ug/L	20.0		101	60-132			
m,p-Xylenes	40		5.0	ug/L	40.0		100	64-133			
Methyl acetate	23		2.5	ug/L	20.0		113	70-130			
Methylene Chloride	24		12	ug/L	20.0		118	43-142			
Methyl-tert-Butyl Ether	23		2.5	ug/L	20.0		113	51-145			
o-Xylene	21		2.5	ug/L	20.0		103	61-129			
Styrene	20		2.5	ug/L	20.0		102	59-136			
Tetrachloroethene	24		2.5	ug/L	20.0		120	60-147			
Toluene	22		2.5	ug/L	20.0		109	64-131			
trans-1,2-Dichloroethene	25		2.5	ug/L	20.0		127	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0		107	65-149			
Trichloroethene	25		2.5	ug/L	20.0		124	62-135			
Trichlorofluoromethane	17		2.5	ug/L	20.0		86	56-155			
Vinyl chloride	19		2.5	ug/L	20.0		96	20-167			
4-Bromofluorobenzene	*44*	*I*		*ug/L*	*50.0*		*88*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*101*	*53-146*			
Toluene-d8	*59*			*ug/L*	*50.0*		*118*	*41-146*			

Matrix Spike (1D27005-MS1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 08:48

Source: AE03398-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0	0.80 U	115	57-148			
1,1,2,2-Tetrachloroethane	22		2.5	ug/L	20.0	0.54 U	110	60-139			
1,1,2-Trichloroethane	22		2.5	ug/L	20.0	0.76 U	108	57-141			
1,1-Dichloroethane	25		2.5	ug/L	20.0	0.62 U	124	57-142			
1,1-Dichloroethene	26		2.5	ug/L	20.0	0.94 U	132	47-139			
1,2,4-Trichlorobenzene	22		2.5	ug/L	20.0	0.70 U	108	52-159			
1,2-Dibromo-3-chloropropane	16		2.5	ug/L	20.0	0.96 U	81	48-150			
1,2-Dibromoethane	20		2.5	ug/L	20.0	0.78 U	98	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	103	63-131			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27005 - EPA 5030B_MS - Continued

Matrix Spike (1D27005-MS1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 08:48

Source: AE03398-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	23		2.5	ug/L	20.0	0.63 U	114	50-156			
1,2-Dichloropropane	25		2.5	ug/L	20.0	0.80 U	124	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0	0.77 U	105	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	100	65-133			
2-Butanone	170		12	ug/L	100	4.5 U	173	10-180			
2-Hexanone	120		12	ug/L	100	2.5 U	122	12-180			
4-Methyl-2-pentanone	130		12	ug/L	100	2.5 U	133	19-180			
Acetone	160		25	ug/L	100	55	107	10-180			
Benzene	30		2.5	ug/L	20.0	0.71 U	152	56-136			QM-19
Bromodichloromethane	27		2.5	ug/L	20.0	0.98	132	58-135			
Bromoform	25		2.5	ug/L	20.0	0.75 U	125	46-148			
Bromomethane	9.1		2.5	ug/L	20.0	0.95 U	45	10-173			
Carbon disulfide	32		12	ug/L	20.0	2.5 U	162	43-153			QM-19
Carbon Tetrachloride	23		2.5	ug/L	20.0	0.94 U	117	54-156			
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	108	51-139			
Chloroethane	20		2.5	ug/L	20.0	0.98 U	98	27-180			QM-11
Chloroform	25		2.5	ug/L	20.0	0.80 U	125	58-139			
Chloromethane	18		2.5	ug/L	20.0	0.82 U	92	33-154			
cis-1,2-Dichloroethene	26		2.5	ug/L	20.0	0.53 U	130	56-128			QM-07
cis-1,3-Dichloropropene	26		2.5	ug/L	20.0	0.59 U	128	64-128			
Cyclohexane	26		2.5	ug/L	20.0	0.93 U	129	70-130			
Dibromochloromethane	21		2.5	ug/L	20.0	1.4	97	50-140			
Dichlorodifluoromethane	17		2.5	ug/L	20.0	0.74 U	86	10-180			
Ethylbenzene	22		2.5	ug/L	20.0	0.69 U	109	63-133			
Freon 113	25		2.5	ug/L	20.0	0.73 U	124	47-173			
Isopropylbenzene	22		2.5	ug/L	20.0	0.67 U	110	60-132			
m,p-Xylenes	42		5.0	ug/L	40.0	1.3 U	106	64-133			
Methyl acetate	24		2.5	ug/L	20.0	0.95 U	119	70-130			
Methylene Chloride	24		12	ug/L	20.0	2.5 U	122	43-142			
Methyl-tert-Butyl Ether	22		2.5	ug/L	20.0	0.60 U	108	51-145			
o-Xylene	22		2.5	ug/L	20.0	0.53 U	109	61-129			
Styrene	22		2.5	ug/L	20.0	0.61 U	108	59-136			
Tetrachloroethene	26		2.5	ug/L	20.0	0.76 U	130	60-147			
Toluene	24		2.5	ug/L	20.0	0.72 U	120	64-131			
trans-1,2-Dichloroethene	27		2.5	ug/L	20.0	0.73 U	136	54-134			QM-07
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	107	65-149			
Trichloroethene	27		2.5	ug/L	20.0	0.89 U	135	62-135			
Trichlorofluoromethane	18		2.5	ug/L	20.0	0.94 U	92	56-155			
Vinyl chloride	21		2.5	ug/L	20.0	0.71 U	104	20-167			
4-Bromofluorobenzene	*42*	*I*		*ug/L*	*50.0*		*84*	*41-142*			
Dibromofluoromethane	*48*	*I*		*ug/L*	*50.0*		*96*	*53-146*			
Toluene-d8	*57*			*ug/L*	*50.0*		*113*	*41-146*			

Matrix Spike Dup (1D27005-MSD1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 09:17

Source: AE03398-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0	0.80 U	117	57-148	2	25	
1,1,2,2-Tetrachloroethane	23		2.5	ug/L	20.0	0.54 U	113	60-139	3	17	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27005 - EPA 5030B_MS - Continued

Matrix Spike Dup (1D27005-MSD1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 09:17

Source: AE03398-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	107	57-141	0.7	16	
1,1-Dichloroethane	25		2.5	ug/L	20.0	0.62 U	126	57-142	2	24	
1,1-Dichloroethene	26		2.5	ug/L	20.0	0.94 U	131	47-139	0.9	16	
1,2,4-Trichlorobenzene	21		2.5	ug/L	20.0	0.70 U	106	52-159	2	24	
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0	0.96 U	84	48-150	4	21	
1,2-Dibromoethane	20		2.5	ug/L	20.0	0.78 U	100	57-140	2	16	
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	105	63-131	2	25	
1,2-Dichloroethane	23		2.5	ug/L	20.0	0.63 U	115	50-156	1	18	
1,2-Dichloropropane	25		2.5	ug/L	20.0	0.80 U	124	61-133	0.2	26	
1,3-Dichlorobenzene	21		2.5	ug/L	20.0	0.77 U	103	66-129	2	23	
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	102	65-133	2	23	
2-Butanone	180		12	ug/L	100	4.5 U	176	10-180	2	29	
2-Hexanone	120		12	ug/L	100	2.5 U	124	12-180	2	28	
4-Methyl-2-pentanone	140		12	ug/L	100	2.5 U	138	19-180	3	24	
Acetone	170		25	ug/L	100	55	113	10-180	3	19	
Benzene	31		2.5	ug/L	20.0	0.71 U	153	56-136	0.6	14	QM-19
Bromodichloromethane	27		2.5	ug/L	20.0	0.98	132	58-135	0.5	19	
Bromoform	25		2.5	ug/L	20.0	0.75 U	127	46-148	2	18	
Bromomethane	8.9		2.5	ug/L	20.0	0.95 U	45	10-173	2	29	
Carbon disulfide	32		12	ug/L	20.0	2.5 U	160	43-153	2	26	QM-19
Carbon Tetrachloride	23		2.5	ug/L	20.0	0.94 U	116	54-156	0.3	27	
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	108	51-139	0.3	13	
Chloroethane	28		2.5	ug/L	20.0	0.98 U	140	27-180	35	22	QM-11
Chloroform	26		2.5	ug/L	20.0	0.80 U	129	58-139	3	17	
Chloromethane	19		2.5	ug/L	20.0	0.82 U	93	33-154	0.9	31	
cis-1,2-Dichloroethene	26		2.5	ug/L	20.0	0.53 U	128	56-128	1	17	
cis-1,3-Dichloropropene	26		2.5	ug/L	20.0	0.59 U	128	64-128	0.6	20	
Cyclohexane	26		2.5	ug/L	20.0	0.93 U	129	70-130	0.08	20	
Dibromochloromethane	21		2.5	ug/L	20.0	1.4	97	50-140	0.1	18	
Dichlorodifluoromethane	17		2.5	ug/L	20.0	0.74 U	85	10-180	1	26	
Ethylbenzene	21		2.5	ug/L	20.0	0.69 U	107	63-133	1	18	
Freon 113	24		2.5	ug/L	20.0	0.73 U	122	47-173	2	30	
Isopropylbenzene	21		2.5	ug/L	20.0	0.67 U	107	60-132	2	23	
m,p-Xylenes	43		5.0	ug/L	40.0	1.3 U	107	64-133	1	18	
Methyl acetate	25		2.5	ug/L	20.0	0.95 U	127	70-130	6	20	
Methylene Chloride	25		12	ug/L	20.0	2.5 U	124	43-142	1	23	
Methyl-tert-Butyl Ether	23		2.5	ug/L	20.0	0.60 U	114	51-145	5	22	
o-Xylene	22		2.5	ug/L	20.0	0.53 U	109	61-129	0.09	16	
Styrene	22		2.5	ug/L	20.0	0.61 U	109	59-136	0.1	32	
Tetrachloroethene	26		2.5	ug/L	20.0	0.76 U	130	60-147	0.4	21	
Toluene	24		2.5	ug/L	20.0	0.72 U	120	64-131	0.3	16	
trans-1,2-Dichloroethene	27		2.5	ug/L	20.0	0.73 U	136	54-134	0.04	20	QM-07
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0	0.73 U	112	65-149	5	17	
Trichloroethene	27		2.5	ug/L	20.0	0.89 U	136	62-135	0.9	20	QM-07
Trichlorofluoromethane	18		2.5	ug/L	20.0	0.94 U	92	56-155	0.5	22	
Vinyl chloride	20		2.5	ug/L	20.0	0.71 U	102	20-167	1	24	
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*86*	*41-142*			
Dibromofluoromethane	*49*	*I*		*ug/L*	*50.0*		*98*	*53-146*			
Toluene-d8	*58*			*ug/L*	*50.0*		*115*	*41-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27020 - EPA 5030B_MS

Blank (1D27020-BLK1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 09:31

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*103*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*110*	*53-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27020 - EPA 5030B_MS - Continued

Blank (1D27020-BLK1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 09:31

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

LCS (1D27020-BS1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 08:35

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	21		2.5	ug/L	20.0		105	57-148			
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0		101	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0		107	57-141			
1,1-Dichloroethane	26		2.5	ug/L	20.0		129	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		104	47-139			
1,2,4-Trichlorobenzene	25		2.5	ug/L	20.0		125	52-159			
1,2-Dibromo-3-chloropropane	21		2.5	ug/L	20.0		104	48-150			
1,2-Dibromoethane	21		2.5	ug/L	20.0		103	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		106	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0		102	50-156			
1,2-Dichloropropane	25		2.5	ug/L	20.0		124	61-133			
1,3-Dichlorobenzene	19		2.5	ug/L	20.0		96	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		105	65-133			
2-Butanone	89		12	ug/L	100		89	10-180			
2-Hexanone	120		12	ug/L	100		117	12-180			
4-Methyl-2-pentanone	110		12	ug/L	100		106	19-180			
Acetone	120		25	ug/L	100		120	10-180			
Benzene	21		2.5	ug/L	20.0		106	56-136			
Bromodichloromethane	21		2.5	ug/L	20.0		107	58-135			
Bromoform	18		2.5	ug/L	20.0		90	46-148			
Bromomethane	19		2.5	ug/L	20.0		97	10-173			
Carbon disulfide	22		12	ug/L	20.0		112	43-153			
Carbon Tetrachloride	24		2.5	ug/L	20.0		120	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		105	51-139			
Chloroethane	23		2.5	ug/L	20.0		116	27-180			
Chloroform	21		2.5	ug/L	20.0		103	58-139			
Chloromethane	30		2.5	ug/L	20.0		148	33-154			
cis-1,2-Dichloroethene	23		2.5	ug/L	20.0		116	56-128			
cis-1,3-Dichloropropene	21		2.5	ug/L	20.0		104	64-128			
Cyclohexane	27		2.5	ug/L	20.0		133	70-130			QL-02
Dibromochloromethane	19		2.5	ug/L	20.0		95	50-140			
Dichlorodifluoromethane	18		2.5	ug/L	20.0		92	10-180			
Ethylbenzene	20		2.5	ug/L	20.0		101	63-133			
Freon 113	17		2.5	ug/L	20.0		87	47-173			
Isopropylbenzene	22		2.5	ug/L	20.0		108	60-132			
m,p-Xylenes	40		5.0	ug/L	40.0		100	64-133			
Methyl acetate	33		2.5	ug/L	20.0		163	70-130			QL-02
Methylene Chloride	25		12	ug/L	20.0		126	43-142			
Methyl-tert-Butyl Ether	26		2.5	ug/L	20.0		128	51-145			
o-Xylene	21		2.5	ug/L	20.0		104	61-129			
Styrene	21		2.5	ug/L	20.0		105	59-136			
Tetrachloroethene	20		2.5	ug/L	20.0		99	60-147			
Toluene	21		2.5	ug/L	20.0		104	64-131			
trans-1,2-Dichloroethene	25		2.5	ug/L	20.0		123	54-134			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27020 - EPA 5030B_MS - Continued

LCS (1D27020-BS1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 08:35

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0		107	65-149			
Trichloroethene	20		2.5	ug/L	20.0		101	62-135			
Trichlorofluoromethane	22		2.5	ug/L	20.0		109	56-155			
Vinyl chloride	23		2.5	ug/L	20.0		117	20-167			
4-Bromofluorobenzene	*54*			*ug/L*	*50.0*		*108*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*113*	*53-146*			
Toluene-d8	*58*			*ug/L*	*50.0*		*116*	*41-146*			

Matrix Spike (1D27020-MS1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 18:18

Source: AE03392-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0	0.80 U	112	57-148			
1,1,2,2-Tetrachloroethane	18		2.5	ug/L	20.0	0.54 U	92	60-139			
1,1,2-Trichloroethane	17		2.5	ug/L	20.0	0.76 U	87	57-141			QM-11
1,1-Dichloroethane	31		2.5	ug/L	20.0	0.62 U	156	57-142			QM-07
1,1-Dichloroethene	27		2.5	ug/L	20.0	0.94 U	135	47-139			
1,2,4-Trichlorobenzene	22		2.5	ug/L	20.0	0.70 U	108	52-159			
1,2-Dibromo-3-chloropropane	13		2.5	ug/L	20.0	0.96 U	66	48-150			QM-11
1,2-Dibromoethane	20		2.5	ug/L	20.0	0.78 U	98	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0	0.73 U	100	63-131			
1,2-Dichloroethane	21		2.5	ug/L	20.0	0.63 U	104	50-156			
1,2-Dichloropropane	26		2.5	ug/L	20.0	0.80 U	131	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0	0.77 U	104	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	105	65-133			
2-Butanone	110		12	ug/L	100	4.5 U	113	10-180			
2-Hexanone	99		12	ug/L	100	2.5 U	99	12-180			
4-Methyl-2-pentanone	76		12	ug/L	100	2.5 U	76	19-180			QM-11
Acetone	110		25	ug/L	100	10 U	111	10-180			
Benzene	20		2.5	ug/L	20.0	0.71 U	102	56-136			
Bromodichloromethane	22		2.5	ug/L	20.0	0.52 U	109	58-135			
Bromoform	17		2.5	ug/L	20.0	0.75 U	83	46-148			
Bromomethane	22		2.5	ug/L	20.0	0.95 U	109	10-173			
Carbon disulfide	27		12	ug/L	20.0	2.5 U	137	43-153			
Carbon Tetrachloride	24		2.5	ug/L	20.0	0.94 U	119	54-156			
Chlorobenzene	23		2.5	ug/L	20.0	0.72 U	115	51-139			
Chloroethane	26		2.5	ug/L	20.0	0.98 U	128	27-180			
Chloroform	24		2.5	ug/L	20.0	0.80 U	120	58-139			
Chloromethane	33		2.5	ug/L	20.0	0.82 U	163	33-154			QM-07
cis-1,2-Dichloroethene	28		2.5	ug/L	20.0	0.53 U	139	56-128			QM-07, QM-11
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.59 U	100	64-128			
Cyclohexane	33		2.5	ug/L	20.0	0.93 U	164	70-130			QM-19
Dibromochloromethane	17		2.5	ug/L	20.0	0.50 U	86	50-140			QM-11
Dichlorodifluoromethane	21		2.5	ug/L	20.0	0.74 U	104	10-180			
Ethylbenzene	23		2.5	ug/L	20.0	0.69 U	115	63-133			
Freon 113	21		2.5	ug/L	20.0	0.73 U	106	47-173			
Isopropylbenzene	23		2.5	ug/L	20.0	0.67 U	116	60-132			
m,p-Xylenes	44		5.0	ug/L	40.0	1.3 U	110	64-133			
Methyl acetate	28		2.5	ug/L	20.0	0.95 U	142	70-130			QM-19

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27020 - EPA 5030B_MS - Continued

Matrix Spike (1D27020-MS1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 18:18

Source: AE03392-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methylene Chloride	28		12	ug/L	20.0	2.5 U	139	43-142			
Methyl-tert-Butyl Ether	25		2.5	ug/L	20.0	0.60 U	126	51-145			
o-Xylene	22		2.5	ug/L	20.0	0.53 U	110	61-129			
Styrene	22		2.5	ug/L	20.0	0.61 U	112	59-136			
Tetrachloroethene	16		2.5	ug/L	20.0	0.76 U	82	60-147			QM-11
Toluene	22		2.5	ug/L	20.0	0.72 U	108	64-131			QM-11
trans-1,2-Dichloroethene	25		2.5	ug/L	20.0	0.73 U	125	54-134			
trans-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.73 U	90	65-149			QM-11
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	108	62-135			
Trichlorofluoromethane	25		2.5	ug/L	20.0	0.94 U	126	56-155			
Vinyl chloride	26		2.5	ug/L	20.0	0.71 U	130	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*101*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*112*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*101*	*41-146*			

Matrix Spike Dup (1D27020-MSD1) Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 18:46

Source: AE03392-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	24		2.5	ug/L	20.0	0.80 U	120	57-148	7	25	
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	107	60-139	16	17	
1,1,2-Trichloroethane	22		2.5	ug/L	20.0	0.76 U	111	57-141	24	16	QM-11
1,1-Dichloroethane	29		2.5	ug/L	20.0	0.62 U	144	57-142	8	24	QM-07
1,1-Dichloroethene	26		2.5	ug/L	20.0	0.94 U	130	47-139	4	16	
1,2,4-Trichlorobenzene	21		2.5	ug/L	20.0	0.70 U	105	52-159	2	24	
1,2-Dibromo-3-chloropropane	18		2.5	ug/L	20.0	0.96 U	88	48-150	29	21	QM-11
1,2-Dibromoethane	21		2.5	ug/L	20.0	0.78 U	103	57-140	5	16	
1,2-Dichlorobenzene	24		2.5	ug/L	20.0	0.73 U	118	63-131	16	25	
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	99	50-156	5	18	
1,2-Dichloropropane	23		2.5	ug/L	20.0	0.80 U	117	61-133	11	26	
1,3-Dichlorobenzene	20		2.5	ug/L	20.0	0.77 U	98	66-129	6	23	
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	102	65-133	3	23	
2-Butanone	110		12	ug/L	100	4.5 U	114	10-180	0.6	29	
2-Hexanone	120		12	ug/L	100	2.5 U	117	12-180	17	28	
4-Methyl-2-pentanone	99		12	ug/L	100	2.5 U	99	19-180	26	24	QM-11
Acetone	110		25	ug/L	100	10 U	114	10-180	3	19	
Benzene	22		2.5	ug/L	20.0	0.71 U	112	56-136	9	14	
Bromodichloromethane	20		2.5	ug/L	20.0	0.52 U	101	58-135	8	19	
Bromoform	19		2.5	ug/L	20.0	0.75 U	96	46-148	14	18	
Bromomethane	23		2.5	ug/L	20.0	0.95 U	114	10-173	4	29	
Carbon disulfide	25		12	ug/L	20.0	2.5 U	127	43-153	7	26	
Carbon Tetrachloride	26		2.5	ug/L	20.0	0.94 U	131	54-156	10	27	
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	110	51-139	4	13	
Chloroethane	24		2.5	ug/L	20.0	0.98 U	118	27-180	8	22	
Chloroform	22		2.5	ug/L	20.0	0.80 U	112	58-139	7	17	
Chloromethane	30		2.5	ug/L	20.0	0.82 U	150	33-154	9	31	
cis-1,2-Dichloroethene	23		2.5	ug/L	20.0	0.53 U	113	56-128	20	17	QM-11
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0	0.59 U	96	64-128	4	20	
Cyclohexane	29		2.5	ug/L	20.0	0.93 U	144	70-130	13	20	QM-19

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D27020 - EPA 5030B_MS - Continued

Matrix Spike Dup (1D27020-MSD1) Continued Prepared: 04/27/2021 00:00 Analyzed: 04/27/2021 18:46

Source: AE03392-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Dibromochloromethane	22		2.5	ug/L	20.0	0.50 U	108	50-140	22	18	QM-11
Dichlorodifluoromethane	19		2.5	ug/L	20.0	0.74 U	97	10-180	6	26	
Ethylbenzene	22		2.5	ug/L	20.0	0.69 U	112	63-133	3	18	
Freon 113	20		2.5	ug/L	20.0	0.73 U	98	47-173	8	30	
Isopropylbenzene	26		2.5	ug/L	20.0	0.67 U	132	60-132	12	23	
m,p-Xylenes	43		5.0	ug/L	40.0	1.3 U	108	64-133	1	18	
Methyl acetate	30		2.5	ug/L	20.0	0.95 U	151	70-130	6	20	QM-19
Methylene Chloride	26		12	ug/L	20.0	2.5 U	132	43-142	5	23	
Methyl-tert-Butyl Ether	27		2.5	ug/L	20.0	0.60 U	133	51-145	6	22	
o-Xylene	24		2.5	ug/L	20.0	0.53 U	120	61-129	9	16	
Styrene	25		2.5	ug/L	20.0	0.61 U	127	59-136	12	32	
Tetrachloroethene	22		2.5	ug/L	20.0	0.76 U	108	60-147	28	21	QM-11
Toluene	26		2.5	ug/L	20.0	0.72 U	129	64-131	17	16	QM-11
trans-1,2-Dichloroethene	26		2.5	ug/L	20.0	0.73 U	130	54-134	3	20	
trans-1,3-Dichloropropene	23		2.5	ug/L	20.0	0.73 U	113	65-149	23	17	QM-11
Trichloroethene	21		2.5	ug/L	20.0	0.89 U	106	62-135	1	20	
Trichlorofluoromethane	23		2.5	ug/L	20.0	0.94 U	116	56-155	8	22	
Vinyl chloride	24		2.5	ug/L	20.0	0.71 U	118	20-167	10	24	
4-Bromofluorobenzene	*60*			*ug/L*	*50.0*		*119*	*41-142*			
Dibromofluoromethane	*58*			*ug/L*	*50.0*		*116*	*53-146*			
Toluene-d8	*57*			*ug/L*	*50.0*		*114*	*41-146*			

Batch 1D28019 - EPA 5030B_MS

Blank (1D28019-BLK1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 10:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28019 - EPA 5030B_MS - Continued

Blank (1D28019-BLK1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 10:11

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*42*	*I*		*ug/L*	*50.0*		*85*	*41-142*			
Dibromofluoromethane	*43*	*I*		*ug/L*	*50.0*		*86*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

LCS (1D28019-BS1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 08:17

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	19		2.5	ug/L	20.0		94	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0		107	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0		104	57-141			
1,1-Dichloroethane	20		2.5	ug/L	20.0		101	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		106	47-139			
1,2,4-Trichlorobenzene	23		2.5	ug/L	20.0		113	52-159			
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0		86	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0		97	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		105	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0		102	50-156			
1,2-Dichloropropane	22		2.5	ug/L	20.0		110	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0		106	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		102	65-133			
2-Butanone	150		12	ug/L	100		147	10-180			
2-Hexanone	100		12	ug/L	100		104	12-180			
4-Methyl-2-pentanone	110		12	ug/L	100		111	19-180			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28019 - EPA 5030B_MS - Continued

LCS (1D28019-BS1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 08:17

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Acetone	96		25	ug/L	100		96	10-180			
Benzene	26		2.5	ug/L	20.0		132	56-136			
Bromodichloromethane	23		2.5	ug/L	20.0		115	58-135			
Bromoform	24		2.5	ug/L	20.0		119	46-148			
Bromomethane	7.6		2.5	ug/L	20.0		38	10-173			
Carbon disulfide	28		12	ug/L	20.0		142	43-153			
Carbon Tetrachloride	20		2.5	ug/L	20.0		100	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		104	51-139			
Chloroethane	18		2.5	ug/L	20.0		92	27-180			
Chloroform	21		2.5	ug/L	20.0		103	58-139			
Chloromethane	16		2.5	ug/L	20.0		79	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0		106	56-128			
cis-1,3-Dichloropropene	23		2.5	ug/L	20.0		114	64-128			
Cyclohexane	21		2.5	ug/L	20.0		107	70-130			
Dibromochloromethane	19		2.5	ug/L	20.0		94	50-140			
Dichlorodifluoromethane	16		2.5	ug/L	20.0		78	10-180			
Ethylbenzene	20		2.5	ug/L	20.0		102	63-133			
Freon 113	20		2.5	ug/L	20.0		101	47-173			
Isopropylbenzene	20		2.5	ug/L	20.0		102	60-132			
m,p-Xylenes	40		5.0	ug/L	40.0		101	64-133			
Methyl acetate	19		2.5	ug/L	20.0		96	70-130			
Methylene Chloride	23		12	ug/L	20.0		117	43-142			
Methyl-tert-Butyl Ether	20		2.5	ug/L	20.0		98	51-145			
o-Xylene	21		2.5	ug/L	20.0		105	61-129			
Styrene	20		2.5	ug/L	20.0		102	59-136			
Tetrachloroethene	25		2.5	ug/L	20.0		125	60-147			
Toluene	22		2.5	ug/L	20.0		111	64-131			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0		110	54-134			
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0		108	65-149			
Trichloroethene	23		2.5	ug/L	20.0		115	62-135			
Trichlorofluoromethane	17		2.5	ug/L	20.0		83	56-155			
Vinyl chloride	18		2.5	ug/L	20.0		92	20-167			
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*94*	*41-142*			
Dibromofluoromethane	*45*	*I*		*ug/L*	*50.0*		*90*	*53-146*			
Toluene-d8	*57*			*ug/L*	*50.0*		*113*	*41-146*			

Matrix Spike (1D28019-MS1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 08:46

Source: AE03252-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2000		250	ug/L	2000	80 U	98	57-148			
1,1,2,2-Tetrachloroethane	2000		250	ug/L	2000	54 U	102	60-139			
1,1,2-Trichloroethane	2100		250	ug/L	2000	76 U	104	57-141			
1,1-Dichloroethane	2100		250	ug/L	2000	62 U	103	57-142			
1,1-Dichloroethene	2200		250	ug/L	2000	94 U	110	47-139			
1,2,4-Trichlorobenzene	2100		250	ug/L	2000	70 U	105	52-159			
1,2-Dibromo-3-chloropropane	1500		250	ug/L	2000	96 U	76	48-150			
1,2-Dibromoethane	1900		250	ug/L	2000	78 U	94	57-140			
1,2-Dichlorobenzene	2100		250	ug/L	2000	73 U	104	63-131			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28019 - EPA 5030B_MS - Continued

Matrix Spike (1D28019-MS1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 08:46

Source: AE03252-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	2000		250	ug/L	2000	63 U	101	50-156			
1,2-Dichloropropane	2200		250	ug/L	2000	80 U	110	61-133			
1,3-Dichlorobenzene	2100		250	ug/L	2000	77 U	106	66-129			
1,4-Dichlorobenzene	2000		250	ug/L	2000	76 U	100	65-133			
2-Butanone	14000		1200	ug/L	10000	450 U	138	10-180			
2-Hexanone	10000		1200	ug/L	10000	250 U	100	12-180			
4-Methyl-2-pentanone	11000		1200	ug/L	10000	250 U	109	19-180			
Acetone	9000		2500	ug/L	10000	1000 U	90	10-180			
Benzene	2700		250	ug/L	2000	71 U	136	56-136			
Bromodichloromethane	2400		250	ug/L	2000	52 U	118	58-135			
Bromoform	2300		250	ug/L	2000	75 U	113	46-148			
Bromomethane	990		250	ug/L	2000	95 U	49	10-173			
Carbon disulfide	2600		1200	ug/L	2000	250 U	132	43-153			
Carbon Tetrachloride	2100		250	ug/L	2000	94 U	104	54-156			
Chlorobenzene	2100		250	ug/L	2000	72 U	105	51-139			
Chloroethane	2000		250	ug/L	2000	98 U	100	27-180			
Chloroform	2100		250	ug/L	2000	80 U	105	58-139			
Chloromethane	1700		250	ug/L	2000	82 U	84	33-154			
cis-1,2-Dichloroethene	2200		250	ug/L	2000	53 U	108	56-128			
cis-1,3-Dichloropropene	2300		250	ug/L	2000	59 U	115	64-128			
Cyclohexane	2100		250	ug/L	2000	93 U	106	70-130			
Dibromochloromethane	1900		250	ug/L	2000	50 U	95	50-140			
Dichlorodifluoromethane	1500		250	ug/L	2000	74 U	77	10-180			
Ethylbenzene	2100		250	ug/L	2000	69 U	104	63-133			
Freon 113	2000		250	ug/L	2000	73 U	100	47-173			
Isopropylbenzene	2100		250	ug/L	2000	67 U	105	60-132			
m,p-Xylenes	4100		500	ug/L	4000	130 U	102	64-133			
Methyl acetate	2000		250	ug/L	2000	95 U	98	70-130			
Methylene Chloride	2100		1200	ug/L	2000	250 U	106	43-142			
Methyl-tert-Butyl Ether	1900		250	ug/L	2000	60 U	96	51-145			
o-Xylene	2100		250	ug/L	2000	53 U	105	61-129			
Styrene	2100		250	ug/L	2000	61 U	104	59-136			
Tetrachloroethene	2500		250	ug/L	2000	76 U	127	60-147			
Toluene	2400		250	ug/L	2000	72 U	119	64-131			
trans-1,2-Dichloroethene	2200		250	ug/L	2000	73 U	111	54-134			
trans-1,3-Dichloropropene	2200		250	ug/L	2000	73 U	109	65-149			
Trichloroethene	2400		250	ug/L	2000	89 U	118	62-135			
Trichlorofluoromethane	1700		250	ug/L	2000	94 U	87	56-155			
Vinyl chloride	1900		250	ug/L	2000	71 U	97	20-167			
4-Bromofluorobenzene	*4400*	*I*		*ug/L*	*5000*		*87*	*41-142*			
Dibromofluoromethane	*4200*	*I*		*ug/L*	*5000*		*84*	*53-146*			
Toluene-d8	*5300*			*ug/L*	*5000*		*106*	*41-146*			

Matrix Spike Dup (1D28019-MSD1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 09:14

Source: AE03252-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1900		250	ug/L	2000	80 U	93	57-148	5	25	
1,1,2,2-Tetrachloroethane	2000		250	ug/L	2000	54 U	101	60-139	2	17	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28019 - EPA 5030B_MS - Continued

Matrix Spike Dup (1D28019-MSD1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 09:14

Source: AE03252-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,2-Trichloroethane	2000		250	ug/L	2000	76 U	98	57-141	6	16	
1,1-Dichloroethane	2000		250	ug/L	2000	62 U	100	57-142	3	24	
1,1-Dichloroethene	2100		250	ug/L	2000	94 U	105	47-139	5	16	
1,2,4-Trichlorobenzene	2000		250	ug/L	2000	70 U	102	52-159	3	24	
1,2-Dibromo-3-chloropropane	1500		250	ug/L	2000	96 U	77	48-150	2	21	
1,2-Dibromoethane	1800		250	ug/L	2000	78 U	91	57-140	4	16	
1,2-Dichlorobenzene	2000		250	ug/L	2000	73 U	101	63-131	3	25	
1,2-Dichloroethane	2000		250	ug/L	2000	63 U	98	50-156	3	18	
1,2-Dichloropropane	2100		250	ug/L	2000	80 U	107	61-133	2	26	
1,3-Dichlorobenzene	2000		250	ug/L	2000	77 U	102	66-129	4	23	
1,4-Dichlorobenzene	2000		250	ug/L	2000	76 U	98	65-133	2	23	
2-Butanone	14000		1200	ug/L	10000	450 U	137	10-180	0.5	29	
2-Hexanone	9700		1200	ug/L	10000	250 U	97	12-180	3	28	
4-Methyl-2-pentanone	11000		1200	ug/L	10000	250 U	108	19-180	0.9	24	
Acetone	8600		2500	ug/L	10000	1000 U	86	10-180	5	19	
Benzene	2600		250	ug/L	2000	71 U	130	56-136	5	14	
Bromodichloromethane	2300		250	ug/L	2000	52 U	113	58-135	5	19	
Bromoform	2200		250	ug/L	2000	75 U	112	46-148	0.8	18	
Bromomethane	1100		250	ug/L	2000	95 U	55	10-173	10	29	
Carbon disulfide	2500		1200	ug/L	2000	250 U	123	43-153	6	26	
Carbon Tetrachloride	2000		250	ug/L	2000	94 U	98	54-156	6	27	
Chlorobenzene	2000		250	ug/L	2000	72 U	102	51-139	3	13	
Chloroethane	1900		250	ug/L	2000	98 U	96	27-180	4	22	
Chloroform	2000		250	ug/L	2000	80 U	101	58-139	4	17	
Chloromethane	1600		250	ug/L	2000	82 U	81	33-154	4	31	
cis-1,2-Dichloroethene	2100		250	ug/L	2000	53 U	104	56-128	4	17	
cis-1,3-Dichloropropene	2200		250	ug/L	2000	59 U	110	64-128	4	20	
Cyclohexane	2000		250	ug/L	2000	93 U	100	70-130	5	20	
Dibromochloromethane	1800		250	ug/L	2000	50 U	92	50-140	3	18	
Dichlorodifluoromethane	1500		250	ug/L	2000	74 U	73	10-180	6	26	
Ethylbenzene	2000		250	ug/L	2000	69 U	101	63-133	3	18	
Freon 113	1900		250	ug/L	2000	73 U	93	47-173	7	30	
Isopropylbenzene	2000		250	ug/L	2000	67 U	102	60-132	3	23	
m,p-Xylenes	4000		500	ug/L	4000	130 U	99	64-133	3	18	
Methyl acetate	1900		250	ug/L	2000	95 U	95	70-130	2	20	
Methylene Chloride	2000		1200	ug/L	2000	250 U	101	43-142	5	23	
Methyl-tert-Butyl Ether	1900		250	ug/L	2000	60 U	94	51-145	2	22	
o-Xylene	2000		250	ug/L	2000	53 U	101	61-129	4	16	
Styrene	2000		250	ug/L	2000	61 U	101	59-136	2	32	
Tetrachloroethene	2400		250	ug/L	2000	76 U	121	60-147	5	21	
Toluene	2300		250	ug/L	2000	72 U	114	64-131	4	16	
trans-1,2-Dichloroethene	2100		250	ug/L	2000	73 U	107	54-134	4	20	
trans-1,3-Dichloropropene	2100		250	ug/L	2000	73 U	105	65-149	4	17	
Trichloroethene	2300		250	ug/L	2000	89 U	115	62-135	3	20	
Trichlorofluoromethane	1700		250	ug/L	2000	94 U	83	56-155	6	22	
Vinyl chloride	1900		250	ug/L	2000	71 U	93	20-167	4	24	
4-Bromofluorobenzene	*4300*	*I*		*ug/L*	*5000*		*87*	*41-142*			
Dibromofluoromethane	*4200*	*I*		*ug/L*	*5000*		*84*	*53-146*			
Toluene-d8	*5200*			*ug/L*	*5000*		*104*	*41-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28033 - EPA 5030B_MS

Blank (1D28033-BLK1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 10:17

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
2-Butanone	4.5	U	12	ug/L							
2-Hexanone	2.5	U	12	ug/L							
4-Methyl-2-pentanone	2.5	U	12	ug/L							
Acetone	10	U	25	ug/L							
Benzene	0.71	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon disulfide	2.5	U	12	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Cyclohexane	0.93	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Ethylbenzene	0.69	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Isopropylbenzene	0.67	U	2.5	ug/L							
Methyl acetate	0.95	U	2.5	ug/L							
Methylene Chloride	2.5	U	12	ug/L							
Methyl-tert-Butyl Ether	0.60	U	2.5	ug/L							
Styrene	0.61	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
Toluene	0.72	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
Xylenes (Total)	1.3	U	5.0	ug/L							
4-Bromofluorobenzene	*53*			*ug/L*	*50.0*		*106*	*41-142*			
Dibromofluoromethane	*61*			*ug/L*	*50.0*		*122*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28033 - EPA 5030B_MS - Continued

Blank (1D28033-BLK1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 10:17

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*57*			*ug/L*	*50.0*		*114*	*41-146*			

LCS (1D28033-BS1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 11:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0		112	57-148			
1,1,2,2-Tetrachloroethane	18		2.5	ug/L	20.0		91	60-139			
1,1,2-Trichloroethane	19		2.5	ug/L	20.0		97	57-141			
1,1-Dichloroethane	29		2.5	ug/L	20.0		146	57-142			QL-02
1,1-Dichloroethene	25		2.5	ug/L	20.0		123	47-139			
1,2,4-Trichlorobenzene	23		2.5	ug/L	20.0		117	52-159			
1,2-Dibromo-3-chloropropane	18		2.5	ug/L	20.0		91	48-150			
1,2-Dibromoethane	18		2.5	ug/L	20.0		89	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0		97	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0		93	50-156			
1,2-Dichloropropane	25		2.5	ug/L	20.0		126	61-133			
1,3-Dichlorobenzene	18		2.5	ug/L	20.0		92	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0		99	65-133			
2-Butanone	140		12	ug/L	100		135	10-180			
2-Hexanone	100		12	ug/L	100		105	12-180			
4-Methyl-2-pentanone	90		12	ug/L	100		90	19-180			
Acetone	140		25	ug/L	100		143	10-180			
Benzene	22		2.5	ug/L	20.0		110	56-136			
Bromodichloromethane	20		2.5	ug/L	20.0		100	58-135			
Bromoform	15		2.5	ug/L	20.0		73	46-148			
Bromomethane	20		2.5	ug/L	20.0		100	10-173			
Carbon disulfide	26		12	ug/L	20.0		128	43-153			
Carbon Tetrachloride	23		2.5	ug/L	20.0		116	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		105	51-139			
Chloroethane	25		2.5	ug/L	20.0		123	27-180			
Chloroform	21		2.5	ug/L	20.0		107	58-139			
Chloromethane	29		2.5	ug/L	20.0		143	33-154			
cis-1,2-Dichloroethene	24		2.5	ug/L	20.0		120	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0		97	64-128			
Cyclohexane	31		2.5	ug/L	20.0		153	70-130			QL-02
Dibromochloromethane	18		2.5	ug/L	20.0		91	50-140			
Dichlorodifluoromethane	19		2.5	ug/L	20.0		94	10-180			
Ethylbenzene	20		2.5	ug/L	20.0		101	63-133			
Freon 113	20		2.5	ug/L	20.0		101	47-173			
Isopropylbenzene	21		2.5	ug/L	20.0		104	60-132			
m,p-Xylenes	40		5.0	ug/L	40.0		100	64-133			
Methyl acetate	32		2.5	ug/L	20.0		162	70-130			QL-02
Methylene Chloride	27		12	ug/L	20.0		136	43-142			
Methyl-tert-Butyl Ether	28		2.5	ug/L	20.0		141	51-145			
o-Xylene	21		2.5	ug/L	20.0		106	61-129			
Styrene	21		2.5	ug/L	20.0		106	59-136			
Tetrachloroethene	17		2.5	ug/L	20.0		87	60-147			
Toluene	20		2.5	ug/L	20.0		101	64-131			
trans-1,2-Dichloroethene	27		2.5	ug/L	20.0		137	54-134			QL-02

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28033 - EPA 5030B_MS - Continued

LCS (1D28033-BS1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 11:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0		94	65-149			
Trichloroethene	20		2.5	ug/L	20.0		99	62-135			
Trichlorofluoromethane	21		2.5	ug/L	20.0		106	56-155			
Vinyl chloride	23		2.5	ug/L	20.0		116	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*101*	*41-142*			
Dibromofluoromethane	*60*			*ug/L*	*50.0*		*119*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*105*	*41-146*			

Matrix Spike (1D28033-MS1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 18:13

Source: AE03539-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0	0.80 U	115	57-148			
1,1,2,2-Tetrachloroethane	17		2.5	ug/L	20.0	0.54 U	87	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	104	57-141			
1,1-Dichloroethane	31		2.5	ug/L	20.0	0.62 U	157	57-142			QM-19
1,1-Dichloroethene	27		2.5	ug/L	20.0	0.94 U	133	47-139			
1,2,4-Trichlorobenzene	25		2.5	ug/L	20.0	0.70 U	127	52-159			
1,2-Dibromo-3-chloropropane	11		2.5	ug/L	20.0	0.96 U	55	48-150			QM-11
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	93	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0	0.73 U	96	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	101	50-156			
1,2-Dichloropropane	25		2.5	ug/L	20.0	0.80 U	126	61-133			
1,3-Dichlorobenzene	19		2.5	ug/L	20.0	0.77 U	97	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	98	65-133			
2-Butanone	130		12	ug/L	100	4.5 U	126	10-180			
2-Hexanone	100		12	ug/L	100	2.5 U	101	12-180			
4-Methyl-2-pentanone	86		12	ug/L	100	2.5 U	86	19-180			
Acetone	120		25	ug/L	100	10 U	124	10-180			
Benzene	23		2.5	ug/L	20.0	0.71 U	117	56-136			
Bromodichloromethane	22		2.5	ug/L	20.0	0.52 U	112	58-135			
Bromoform	14		2.5	ug/L	20.0	0.75 U	70	46-148			
Bromomethane	24		2.5	ug/L	20.0	0.95 U	121	10-173			
Carbon disulfide	29		12	ug/L	20.0	2.5 U	146	43-153			
Carbon Tetrachloride	26		2.5	ug/L	20.0	0.94 U	129	54-156			
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	110	51-139			
Chloroethane	27		2.5	ug/L	20.0	0.98 U	134	27-180			
Chloroform	24		2.5	ug/L	20.0	0.80 U	119	58-139			
Chloromethane	30		2.5	ug/L	20.0	0.82 U	148	33-154			
cis-1,2-Dichloroethene	26		2.5	ug/L	20.0	0.53 U	128	56-128			
cis-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.59 U	104	64-128			
Cyclohexane	30		2.5	ug/L	20.0	0.93 U	152	70-130			QM-19
Dibromochloromethane	17		2.5	ug/L	20.0	0.50 U	87	50-140			
Dichlorodifluoromethane	20		2.5	ug/L	20.0	0.74 U	102	10-180			
Ethylbenzene	22		2.5	ug/L	20.0	0.69 U	111	63-133			
Freon 113	22		2.5	ug/L	20.0	0.73 U	109	47-173			
Isopropylbenzene	21		2.5	ug/L	20.0	0.67 U	105	60-132			
m,p-Xylenes	45		5.0	ug/L	40.0	1.3 U	113	64-133			
Methyl acetate	30		2.5	ug/L	20.0	0.95 U	148	70-130			QM-19

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28033 - EPA 5030B_MS - Continued

Matrix Spike (1D28033-MS1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 18:13

Source: AE03539-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Methylene Chloride	29		12	ug/L	20.0	2.5 U	144	43-142			QM-07
Methyl-tert-Butyl Ether	27		2.5	ug/L	20.0	0.60 U	134	51-145			
o-Xylene	19		2.5	ug/L	20.0	0.53 U	97	61-129			
Styrene	22		2.5	ug/L	20.0	0.61 U	111	59-136			
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	105	60-147			
Toluene	24		2.5	ug/L	20.0	0.72 U	118	64-131			
trans-1,2-Dichloroethene	26		2.5	ug/L	20.0	0.73 U	128	54-134			
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.73 U	102	65-149			
Trichloroethene	23		2.5	ug/L	20.0	0.89 U	113	62-135			
Trichlorofluoromethane	24		2.5	ug/L	20.0	0.94 U	119	56-155			
Vinyl chloride	24		2.5	ug/L	20.0	0.71 U	119	20-167			
4-Bromofluorobenzene	*46*	*I*		*ug/L*	*50.0*		*92*	*41-142*			
Dibromofluoromethane	*61*			*ug/L*	*50.0*		*121*	*53-146*			
Toluene-d8	*57*			*ug/L*	*50.0*		*115*	*41-146*			

Matrix Spike Dup (1D28033-MSD1) Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 18:41

Source: AE03539-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0	0.80 U	114	57-148	1	25	
1,1,2,2-Tetrachloroethane	16		2.5	ug/L	20.0	0.54 U	80	60-139	9	17	
1,1,2-Trichloroethane	22		2.5	ug/L	20.0	0.76 U	109	57-141	5	16	
1,1-Dichloroethane	30		2.5	ug/L	20.0	0.62 U	149	57-142	5	24	QM-19
1,1-Dichloroethene	25		2.5	ug/L	20.0	0.94 U	127	47-139	5	16	
1,2,4-Trichlorobenzene	28		2.5	ug/L	20.0	0.70 U	139	52-159	9	24	
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0	0.96 U	84	48-150	41	21	QM-11
1,2-Dibromoethane	18		2.5	ug/L	20.0	0.78 U	91	57-140	2	16	
1,2-Dichlorobenzene	23		2.5	ug/L	20.0	0.73 U	115	63-131	18	25	
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	96	50-156	5	18	
1,2-Dichloropropane	25		2.5	ug/L	20.0	0.80 U	125	61-133	0.6	26	
1,3-Dichlorobenzene	20		2.5	ug/L	20.0	0.77 U	100	66-129	3	23	
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	99	65-133	1	23	
2-Butanone	120		12	ug/L	100	4.5 U	123	10-180	2	29	
2-Hexanone	110		12	ug/L	100	2.5 U	113	12-180	11	28	
4-Methyl-2-pentanone	110		12	ug/L	100	2.5 U	105	19-180	20	24	
Acetone	130		25	ug/L	100	10 U	128	10-180	4	19	
Benzene	23		2.5	ug/L	20.0	0.71 U	116	56-136	0.6	14	
Bromodichloromethane	22		2.5	ug/L	20.0	0.52 U	108	58-135	4	19	
Bromoform	14		2.5	ug/L	20.0	0.75 U	72	46-148	3	18	
Bromomethane	25		2.5	ug/L	20.0	0.95 U	126	10-173	4	29	
Carbon disulfide	29		12	ug/L	20.0	2.5 U	144	43-153	2	26	
Carbon Tetrachloride	26		2.5	ug/L	20.0	0.94 U	129	54-156	0.2	27	
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	108	51-139	1	13	
Chloroethane	27		2.5	ug/L	20.0	0.98 U	134	27-180	0.04	22	
Chloroform	23		2.5	ug/L	20.0	0.80 U	114	58-139	4	17	
Chloromethane	31		2.5	ug/L	20.0	0.82 U	154	33-154	4	31	
cis-1,2-Dichloroethene	25		2.5	ug/L	20.0	0.53 U	124	56-128	3	17	
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.59 U	101	64-128	3	20	
Cyclohexane	30		2.5	ug/L	20.0	0.93 U	150	70-130	1	20	QM-19

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1D28033 - EPA 5030B_MS - Continued

Matrix Spike Dup (1D28033-MSD1) Continued Prepared: 04/28/2021 00:00 Analyzed: 04/28/2021 18:41

Source: AE03539-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Dibromochloromethane	18		2.5	ug/L	20.0	0.50 U	92	50-140	6	18	
Dichlorodifluoromethane	21		2.5	ug/L	20.0	0.74 U	104	10-180	1	26	
Ethylbenzene	22		2.5	ug/L	20.0	0.69 U	108	63-133	3	18	
Freon 113	21		2.5	ug/L	20.0	0.73 U	105	47-173	4	30	
Isopropylbenzene	21		2.5	ug/L	20.0	0.67 U	105	60-132	0.1	23	
m,p-Xylenes	42		5.0	ug/L	40.0	1.3 U	105	64-133	7	18	
Methyl acetate	28		2.5	ug/L	20.0	0.95 U	139	70-130	6	20	QM-19
Methylene Chloride	28		12	ug/L	20.0	2.5 U	140	43-142	3	23	
Methyl-tert-Butyl Ether	26		2.5	ug/L	20.0	0.60 U	130	51-145	3	22	
o-Xylene	21		2.5	ug/L	20.0	0.53 U	107	61-129	9	16	
Styrene	22		2.5	ug/L	20.0	0.61 U	110	59-136	0.8	32	
Tetrachloroethene	20		2.5	ug/L	20.0	0.76 U	100	60-147	5	21	
Toluene	24		2.5	ug/L	20.0	0.72 U	121	64-131	2	16	
trans-1,2-Dichloroethene	27		2.5	ug/L	20.0	0.73 U	135	54-134	5	20	QM-19
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	103	65-149	0.8	17	
Trichloroethene	21		2.5	ug/L	20.0	0.89 U	103	62-135	9	20	
Trichlorofluoromethane	24		2.5	ug/L	20.0	0.94 U	118	56-155	1	22	
Vinyl chloride	21		2.5	ug/L	20.0	0.71 U	107	20-167	11	24	
4-Bromofluorobenzene	*43*	*I*		*ug/L*	*50.0*		*87*	*41-142*			
Dibromofluoromethane	*59*			*ug/L*	*50.0*		*118*	*53-146*			
Toluene-d8	*58*			*ug/L*	*50.0*		*115*	*41-146*			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
J-05	Result may be biased low. Associated calibration verification standard did not meet the minimum control limit.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-19	The spike recovery was outside acceptance limits for the MS and/or MSD.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

AE027660

Tetra Tech, Inc. | **CHAIN OF CUSTODY** | **NUMBER** No. 2376 | **PAGE** 1 **OF** 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	HMPN HMFN	Chris Hook	412-921-8790	ENCO
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Melissa Bennett	**PHONE NUMBER** 321-914-9394	**ADDRESS**
		CARRIER/WAYBILL NUMBER		**CITY, STATE** Orlando, FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2021)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: VOC	COMMENTS
4/9	1030	HMPN-MW0040-042.5-20210419	40	40	45	GW	G	3	X			
4/19	1110	HMPN-MW0039-035.0-20210419	39	30	40	GW	G	3	X			
4/19	1200	HMPN-MW0041-035.0-20210419	41	30	40	GW	G	3	X			
4/19	1250	HMPN-MW0044-045.0-20210419	44	40	50	GW	G	3	X			
4/19	1410	HMPN-MW0030-025.0-20210419	30	20	30	GW	G	3	X			
4/19	1545	HMPN-MW0031-035.0-20210419	31	30	40	GW	G	3	X			
4/19	1620	HMPN-MW0029-015.0-20210419	29	10	20	GW	G	3	X			
4/20	1125	HMPN-MW0036-015.0-20210420 ~~20210419~~ MB	36	10	20	GW	G	3	X			
4/20	1200	HMPN-MW0011-025.0-20210420	11	20	30	GW	G	3	X			
4/20	1245	HMPN-MW0009-020.0-20210420	9	15	25	GW	G	3	X			
4/20	1330	HMPN-MW0033-042.5-20210420	33	45	50	GW	G	3	X			
4/20	1520	HMPN-MW0032-042.5-20210420	32	40	45	GW	G	3	X			
4/21	0940	HMPN-MW0047-025.0-20210421	47	20	30	GW	G	3	X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	22 Apr	1457	1. RECEIVED BY James W Gregory	4/22/21	1457
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: Cr(VI) 2.5Q

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

AE027160

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2377 | PAGE 2 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08982	HMFN	Chris Hook	412-921-8790	ENCO
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER: Melissa Bennett	PHONE NUMBER: 321-914-9394	ADDRESS
		CARRIER/WAYBILL NUMBER		CITY, STATE: Orlando, FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: VOC	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	COMMENTS
4/21	1020	HMPN-MW0046-015.0-20210421	46	10	20	GW	G	3	X			
4/21	1050	HMPN-MW0038-020.0-20210421	38	15	25			3	X			
4/21	1130	HMPN-MW0037-010.0-20210421	37	5	15			3	X			
4/21	1210	HMPN-MW0027-042.5-20210421	27	40	45			3	X			
4/21	1250	HMPN-MW0028-047.5-20210421	28	45	50			3	X			
4/21	1325	HMPN-MW0004-010.0-20210421	4	5	15			3	X			
4/21	1405	HMPN-MW0016-010.0-20210421	16	5	15			3	X			
4/21	1450	HMPN-MW0045-030.0-20210421	45	25	35			3	X			
4/22	1140	HMPN-MW0024-060.0-20210421	24	55	65			3	X			
4/22	1220	HMPN-MW0002-035.0-20210422	2	30	40			3	X			
4/22	1255	HMPN-MW0008-025.0-20210422	8	20	30			3	X			
4/22	1345	HMPN-MW0042-042.5-20210422	42	40	45			3	X			
4/22	1445	HMPN-MW0043-035.0-20210422	43	30	40			3	X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	22 Apr 21	1457	1. RECEIVED BY James W Gregory	4/22/21	1457
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: C/2161 2.5°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

4/23/2021

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN SWMU 090 / 112G08982
Purchase Order # : 1170718

Lab Reference # : AE02766 Lab Receipt Date: 22-Apr-21 14:51
Anticipated ***(Estimated)*** Completion Date: 29-Apr-21 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN SWMU 090
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0040-042.5-20210419(Lab ID: AE02766-01), Matrix: Ground Water, Sampled: 19-Apr-21 10:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0039-035.0-20210419(Lab ID: AE02766-02), Matrix: Ground Water, Sampled: 19-Apr-21 11:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0041-035.0-20210419(Lab ID: AE02766-03), Matrix: Ground Water, Sampled: 19-Apr-21 12:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0044-045.0-20210419(Lab ID: AE02766-04), Matrix: Ground Water, Sampled: 19-Apr-21 12:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0030-025.0-20210419(Lab ID: AE02766-05), Matrix: Ground Water, Sampled: 19-Apr-21 14:10 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on containers says 1400, JAJ 4/23/21.			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0031-035.0-20210419(Lab ID: AE02766-06), Matrix: Ground Water, Sampled: 19-Apr-21 15:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0029-015.0-20210419(Lab ID: AE02766-07), Matrix: Ground Water, Sampled: 19-Apr-21 16:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-May-21 23:59	Received
Sample ID: HMPN-MW0036-015.0-20210420(Lab ID: AE02766-08), Matrix: Ground Water, Sampled: 20-Apr-21 11:25 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-May-21 23:59	Received

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN SWMU 090
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0011-025.0-20210420(Lab ID: AE02766-09), Matrix: Ground Water, Sampled: 20-Apr-21 12:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-May-21 23:59	Received
Sample ID: HMPN-MW0009-020.0-20210420(Lab ID: AE02766-10), Matrix: Ground Water, Sampled: 20-Apr-21 12:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-May-21 23:59	Received
Sample ID: HMPN-MW0033-047.5-20210420(Lab ID: AE02766-11), Matrix: Ground Water, Sampled: 20-Apr-21 13:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-May-21 23:59	Received
Sample ID: HMPN-MW0032-042.5-20210420(Lab ID: AE02766-12), Matrix: Ground Water, Sampled: 20-Apr-21 15:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-May-21 23:59	Received
Sample ID: HMPN-MW0047-025.0-20210421(Lab ID: AE02766-13), Matrix: Ground Water, Sampled: 21-Apr-21 09:40 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0046-015.0-20210421(Lab ID: AE02766-14), Matrix: Ground Water, Sampled: 21-Apr-21 10:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0038-020.0-20210421(Lab ID: AE02766-15), Matrix: Ground Water, Sampled: 21-Apr-21 10:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0037-010.0-20210421(Lab ID: AE02766-16), Matrix: Ground Water, Sampled: 21-Apr-21 11:30 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0027-042.5-20210421(Lab ID: AE02766-17), Matrix: Ground Water, Sampled: 21-Apr-21 12:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0028-047.5-20210421(Lab ID: AE02766-18), Matrix: Ground Water, Sampled: 21-Apr-21 12:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0004-010.0-20210421(Lab ID: AE02766-19), Matrix: Ground Water, Sampled: 21-Apr-21 13:25 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0016-010.0-20210421(Lab ID: AE02766-20), Matrix: Ground Water, Sampled: 21-Apr-21 14:05 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0045-030.0-20210421(Lab ID: AE02766-21), Matrix: Ground Water, Sampled: 21-Apr-21 14:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0024-060.0-20210422(Lab ID: AE02766-22), Matrix: Ground Water, Sampled: 22-Apr-21 11:40 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	06-May-21 23:59	Received
Sample ID: HMPN-MW0002-035.0-20210422(Lab ID: AE02766-23), Matrix: Ground Water, Sampled: 22-Apr-21 12:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	06-May-21 23:59	Received
Sample ID: HMPN-MW0008-025.0-20210422(Lab ID: AE02766-24), Matrix: Ground Water, Sampled: 22-Apr-21 12:55 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	06-May-21 23:59	Received
Sample ID: HMPN-MW0042-042.5-20210422(Lab ID: AE02766-25), Matrix: Ground Water, Sampled: 22-Apr-21 13:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	06-May-21 23:59	Received

Client: Tetra Tech NUS, Inc. (TE015)
Requested TAT: 5

Project Name: NASA KSC HMFN SWMU 090
Project Number: 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0043-035.0-20210422(Lab ID: AE02766-26), Matrix: Ground Water, Sampled: 22-Apr-21 14:45 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on containers says 1415, JAJ 4/23/21.			
8260D TCL SOM01.2 CLP-LIKE	5	06-May-21 23:59	Received
Sample ID: HMPN-MW0035-035.0-20210421(Lab ID: AE02766-27), Matrix: Ground Water, Sampled: 21-Apr-21 10:10 (GMT-05:00) Eastern Time (US &			
Sample Comments: Sample not on COC, JAJ 4/23/21.			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received
Sample ID: HMPN-MW0034-015.0-20210421(Lab ID: AE02766-28), Matrix: Ground Water, Sampled: 21-Apr-21 15:30 (GMT-05:00) Eastern Time (US &			
Sample Comments: Sample not on COC, JAJ 4/23/21.			
8260D TCL SOM01.2 CLP-LIKE	5	05-May-21 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AE02766-TE015

CLASS: 01_VOA_MS

METHOD: EPA 8260D

ANALYSES DATA PACKAGE COVER PAGE

EPA 8260D

Laboratory: ENCO Orlando

SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015)

Project: NASA KSC HMFN SWMU 090

Client Sample Id:	Lab Sample Id:
HMPN-MW0040-042.5-20210419	AE02766-01
HMPN-MW0039-035.0-20210419	AE02766-02
HMPN-MW0039-035.0-20210419	AE02766-02RE1
HMPN-MW0041-035.0-20210419	AE02766-03
HMPN-MW0041-035.0-20210419	AE02766-03RE1
HMPN-MW0044-045.0-20210419	AE02766-04
HMPN-MW0030-025.0-20210419	AE02766-05
HMPN-MW0030-025.0-20210419	AE02766-05RE1
HMPN-MW0030-025.0-20210419	AE02766-05RE2
HMPN-MW0031-035.0-20210419	AE02766-06
HMPN-MW0031-035.0-20210419	AE02766-06RE1
HMPN-MW0029-015.0-20210419	AE02766-07
HMPN-MW0036-015.0-20210420	AE02766-08
HMPN-MW0036-015.0-20210420	AE02766-08RE1
HMPN-MW0011-025.0-20210420	AE02766-09
HMPN-MW0009-020.0-20210420	AE02766-10
HMPN-MW0009-020.0-20210420	AE02766-10RE1
HMPN-MW0033-047.5-20210420	AE02766-11
HMPN-MW0032-042.5-20210420	AE02766-12
HMPN-MW0047-025.0-20210421	AE02766-13
HMPN-MW0046-015.0-20210421	AE02766-14
HMPN-MW0038-020.0-20210421	AE02766-15
HMPN-MW0037-010.0-20210421	AE02766-16
HMPN-MW0037-010.0-20210421	AE02766-16RE1
HMPN-MW0027-042.5-20210421	AE02766-17
HMPN-MW0028-047.5-20210421	AE02766-18
HMPN-MW0028-047.5-20210421	AE02766-18RE1
HMPN-MW0004-010.0-20210421	AE02766-19
HMPN-MW0016-010.0-20210421	AE02766-20
HMPN-MW0045-030.0-20210421	AE02766-21
HMPN-MW0024-060.0-20210422	AE02766-22
HMPN-MW0002-035.0-20210422	AE02766-23
HMPN-MW0008-025.0-20210422	AE02766-24
HMPN-MW0042-042.5-20210422	AE02766-25
HMPN-MW0043-035.0-20210422	AE02766-26
HMPN-MW0034-015.0-20210421	AE02766-27
HMPN-MW0035-035.0-20210421	AE02766-28

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-01
File ID: 212DU009.D
Sampled: 04/19/21 10:30
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 10:55
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.5	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	17		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	2.2	J	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-01
File ID: 212DU009.D
Sampled: 04/19/21 10:30
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 10:55
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	95	53 - 146	
Toluene-d8	50.0	56	112	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	247273	11.48	231702	11.44	
1,4-Difluorobenzene	408798	12.03	427152	11.99	
Chlorobenzene-d5	234492	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	193819	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210419

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE02766-02RE1 File ID: 212DV012.D

Sampled: 04/19/21 11:10 Prepared: 04/27/21 00:00 Analyzed: 04/27/21 12:37

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1D27005 Sequence: AA66113 Calibration: 2103054 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	10	7.4	UD	7.4	25
74-87-3	Chloromethane	10	8.2	UD	8.2	25
75-01-4	Vinyl chloride	10	200	D	7.1	25
74-83-9	Bromomethane	10	9.5	UD	9.5	25
75-00-3	Chloroethane	10	9.8	UD	9.8	25
75-69-4	Trichlorofluoromethane	10	9.4	UD	9.4	25
76-13-1	Freon 113	10	7.3	UD	7.3	25
67-64-1	Acetone	10	100	UD	100	250
75-35-4	1,1-Dichloroethene	10	9.4	UD	9.4	25
75-15-0	Carbon disulfide	10	25	UD	25	120
75-09-2	Methylene Chloride	10	25	UD	25	120
1634-04-4	Methyl-tert-Butyl Ether	10	6.0	UD	6.0	25
156-60-5	trans-1,2-Dichloroethene	10	7.3	UD	7.3	25
156-59-2	cis-1,2-Dichloroethene	10	680	D	5.3	25
75-34-3	1,1-Dichloroethane	10	6.2	UD	6.2	25
78-93-3	2-Butanone	10	45	UD	45	120
67-66-3	Chloroform	10	8.0	UD	8.0	25
71-55-6	1,1,1-Trichloroethane	10	8.0	UD	8.0	25
79-20-9	Methyl acetate	10	9.5	UD	9.5	25
110-82-7	Cyclohexane	10	9.3	UD	9.3	25
56-23-5	Carbon Tetrachloride	10	9.4	UD	9.4	25
107-06-2	1,2-Dichloroethane	10	6.3	UD	6.3	25
71-43-2	Benzene	10	7.1	UD	7.1	25
79-01-6	Trichloroethene	10	11	JD	8.9	25
78-87-5	1,2-Dichloropropane	10	8.0	UD	8.0	25
75-27-4	Bromodichloromethane	10	5.2	UD	5.2	25
108-10-1	4-Methyl-2-pentanone	10	25	UD	25	120
591-78-6	2-Hexanone	10	25	UD	25	120
10061-01-5	cis-1,3-Dichloropropene	10	5.9	UD	5.9	25
108-88-3	Toluene	10	7.2	UD	7.2	25
10061-02-6	trans-1,3-Dichloropropene	10	7.3	UD	7.3	25
79-00-5	1,1,2-Trichloroethane	10	7.6	UD	7.6	25
127-18-4	Tetrachloroethene	10	7.6	UD	7.6	25
124-48-1	Dibromochloromethane	10	5.0	UD	5.0	25
106-93-4	1,2-Dibromoethane	10	7.8	UD	7.8	25
108-90-7	Chlorobenzene	10	7.2	UD	7.2	25
100-41-4	Ethylbenzene	10	6.9	UD	6.9	25
75-25-2	Bromoform	10	7.5	UD	7.5	25
100-42-5	Styrene	10	6.1	UD	6.1	25
98-82-8	Isopropylbenzene	10	6.7	UD	6.7	25
79-34-5	1,1,2,2-Tetrachloroethane	10	5.4	UD	5.4	25

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-02RE1
File ID: 212DV012.D
Sampled: 04/19/21 11:10
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 12:37
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	10	7.0	UD	7.0	25
541-73-1	1,3-Dichlorobenzene	10	7.7	UD	7.7	25
106-46-7	1,4-Dichlorobenzene	10	7.6	UD	7.6	25
95-50-1	1,2-Dichlorobenzene	10	7.3	UD	7.3	25
96-12-8	1,2-Dibromo-3-chloropropane	10	9.6	UD	9.6	25
1330-20-7	Xylenes (Total)	10	13	UD	13	50

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	101	53 - 146	
Toluene-d8	50.0	57	113	41 - 146	
4-Bromofluorobenzene	50.0	41	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	232570	11.47	231702	11.44	
1,4-Difluorobenzene	397565	12.02	427152	11.99	
Chlorobenzene-d5	237741	14.61	207404	14.59	
1,4-Dichlorobenzene-d4	202175	16.98	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-03
File ID: 212DU011.D
Sampled: 04/19/21 12:00
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 11:53
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	43		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	1.6	J	0.73	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	52		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-03
File ID: 212DU011.D
Sampled: 04/19/21 12:00
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 11:53
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	47	94	53 - 146	
Toluene-d8	50.0	55	111	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	239954	11.48	231702	11.44	
1,4-Difluorobenzene	404276	12.03	427152	11.99	
Chlorobenzene-d5	233985	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	194101	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-03RE1
File ID: 215DV008.D
Sampled: 04/19/21 12:00
Prepared: 04/27/21 09:01
Analyzed: 04/27/21 10:54
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27020
Sequence: AA66116
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	10	210	D	5.3	25

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	113	53 - 146	
Toluene-d8	50.0	56	111	41 - 146	
4-Bromofluorobenzene	50.0	52	104	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1019636	9.857	1384465	9.851	
1,4-Difluorobenzene	2060785	10.444	2848520	10.444	
Chlorobenzene-d5	1233818	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1105987	15.485	1623575	15.486	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0044-045.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-04
File ID: 212DV013.D
Sampled: 04/19/21 12:50
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 13:06
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	400	300	UD	300	1000
74-87-3	Chloromethane	400	330	UD	330	1000
75-01-4	Vinyl chloride	400	280	UD	280	1000
74-83-9	Bromomethane	400	380	UD	380	1000
75-00-3	Chloroethane	400	390	UD	390	1000
75-69-4	Trichlorofluoromethane	400	380	UD	380	1000
76-13-1	Freon 113	400	27000	D	290	1000
67-64-1	Acetone	400	4000	UD	4000	10000
75-35-4	1,1-Dichloroethene	400	380	UD	380	1000
75-15-0	Carbon disulfide	400	1000	UD	1000	5000
75-09-2	Methylene Chloride	400	1000	UD	1000	5000
1634-04-4	Methyl-tert-Butyl Ether	400	240	UD	240	1000
156-60-5	trans-1,2-Dichloroethene	400	290	UD	290	1000
156-59-2	cis-1,2-Dichloroethene	400	900	JD	210	1000
75-34-3	1,1-Dichloroethane	400	250	UD	250	1000
78-93-3	2-Butanone	400	1800	UD	1800	5000
67-66-3	Chloroform	400	320	UD	320	1000
71-55-6	1,1,1-Trichloroethane	400	320	UD	320	1000
79-20-9	Methyl acetate	400	380	UD	380	1000
110-82-7	Cyclohexane	400	370	UD	370	1000
56-23-5	Carbon Tetrachloride	400	380	UD	380	1000
107-06-2	1,2-Dichloroethane	400	250	UD	250	1000
71-43-2	Benzene	400	280	UD	280	1000
79-01-6	Trichloroethene	400	460	JD	360	1000
78-87-5	1,2-Dichloropropane	400	320	UD	320	1000
75-27-4	Bromodichloromethane	400	210	UD	210	1000
108-10-1	4-Methyl-2-pentanone	400	1000	UD	1000	5000
591-78-6	2-Hexanone	400	1000	UD	1000	5000
10061-01-5	cis-1,3-Dichloropropene	400	240	UD	240	1000
108-88-3	Toluene	400	290	UD	290	1000
10061-02-6	trans-1,3-Dichloropropene	400	290	UD	290	1000
79-00-5	1,1,2-Trichloroethane	400	300	UD	300	1000
127-18-4	Tetrachloroethene	400	300	UD	300	1000
124-48-1	Dibromochloromethane	400	200	UD	200	1000
106-93-4	1,2-Dibromoethane	400	310	UD	310	1000
108-90-7	Chlorobenzene	400	290	UD	290	1000
100-41-4	Ethylbenzene	400	280	UD	280	1000
75-25-2	Bromoform	400	300	UD	300	1000
100-42-5	Styrene	400	240	UD	240	1000
98-82-8	Isopropylbenzene	400	270	UD	270	1000
79-34-5	1,1,2,2-Tetrachloroethane	400	220	UD	220	1000

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0044-045.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-04
File ID: 212DV013.D
Sampled: 04/19/21 12:50
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 13:06
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	400	280	UD	280	1000
541-73-1	1,3-Dichlorobenzene	400	310	UD	310	1000
106-46-7	1,4-Dichlorobenzene	400	300	UD	300	1000
95-50-1	1,2-Dichlorobenzene	400	290	UD	290	1000
96-12-8	1,2-Dibromo-3-chloropropane	400	380	UD	380	1000
1330-20-7	Xylenes (Total)	400	520	UD	520	2000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	57	114	41 - 146	
4-Bromofluorobenzene	50.0	41	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	229178	11.47	231702	11.44	
1,4-Difluorobenzene	393544	12.02	427152	11.99	
Chlorobenzene-d5	237209	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	203551	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-05RE1
File ID: 215DW009.D
Sampled: 04/19/21 14:10
Prepared: 04/28/21 10:09
Analyzed: 04/28/21 11:45
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D28033
Sequence: AA66142
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	5.5		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	6.0		0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-59-2	cis-1,2-Dichloroethene	1	66		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	61		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-05RE1
File ID: 215DW009.D
Sampled: 04/19/21 14:10
Prepared: 04/28/21 10:09
Analyzed: 04/28/21 11:45
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D28033
Sequence: AA66142
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	59	118	53 - 146	
Toluene-d8	50.0	63	126	41 - 146	
4-Bromofluorobenzene	50.0	56	112	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1126404	9.857	1384465	9.851	
1,4-Difluorobenzene	2282085	10.45	2848520	10.444	
Chlorobenzene-d5	1366501	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1261343	15.486	1623575	15.486	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-05RE2
File ID: 212DW013.D
Sampled: 04/19/21 14:10
Prepared: 04/28/21 00:00
Analyzed: 04/28/21 13:03
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D28019
Sequence: AA66133
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	44	87	53 - 146	
Toluene-d8	50.0	53	105	41 - 146	
4-Bromofluorobenzene	50.0	42	85	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	270060	11.47	231702	11.44	
1,4-Difluorobenzene	429903	12.02	427152	11.99	
Chlorobenzene-d5	234458	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	188770	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210419

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE02766-06 File ID: 212DU012.D

Sampled: 04/19/21 15:45 Prepared: 04/26/21 00:00 Analyzed: 04/26/21 12:21

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1D26010 Sequence: AA66091 Calibration: 2103054 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	10	7.4	UD	7.4	25
74-87-3	Chloromethane	10	8.2	UD	8.2	25
75-01-4	Vinyl chloride	10	46	D	7.1	25
74-83-9	Bromomethane	10	9.5	UD	9.5	25
75-00-3	Chloroethane	10	9.8	UD	9.8	25
75-69-4	Trichlorofluoromethane	10	9.4	UD	9.4	25
76-13-1	Freon 113	10	7.3	UD	7.3	25
67-64-1	Acetone	10	100	UD	100	250
75-35-4	1,1-Dichloroethene	10	9.4	UD	9.4	25
75-15-0	Carbon disulfide	10	25	UD	25	120
75-09-2	Methylene Chloride	10	25	UD	25	120
1634-04-4	Methyl-tert-Butyl Ether	10	6.0	UD	6.0	25
156-60-5	trans-1,2-Dichloroethene	10	7.4	JD	7.3	25
75-34-3	1,1-Dichloroethane	10	6.2	UD	6.2	25
78-93-3	2-Butanone	10	45	UD	45	120
67-66-3	Chloroform	10	8.0	UD	8.0	25
71-55-6	1,1,1-Trichloroethane	10	8.0	UD	8.0	25
79-20-9	Methyl acetate	10	9.5	UD	9.5	25
110-82-7	Cyclohexane	10	9.3	UD	9.3	25
56-23-5	Carbon Tetrachloride	10	9.4	UD	9.4	25
107-06-2	1,2-Dichloroethane	10	6.3	UD	6.3	25
71-43-2	Benzene	10	7.1	UD	7.1	25
78-87-5	1,2-Dichloropropane	10	8.0	UD	8.0	25
75-27-4	Bromodichloromethane	10	5.2	UD	5.2	25
108-10-1	4-Methyl-2-pentanone	10	25	UD	25	120
591-78-6	2-Hexanone	10	25	UD	25	120
10061-01-5	cis-1,3-Dichloropropene	10	5.9	UD	5.9	25
108-88-3	Toluene	10	7.2	UD	7.2	25
10061-02-6	trans-1,3-Dichloropropene	10	7.3	UD	7.3	25
79-00-5	1,1,2-Trichloroethane	10	7.6	UD	7.6	25
127-18-4	Tetrachloroethene	10	7.6	UD	7.6	25
124-48-1	Dibromochloromethane	10	5.0	UD	5.0	25
106-93-4	1,2-Dibromoethane	10	7.8	UD	7.8	25
108-90-7	Chlorobenzene	10	7.2	UD	7.2	25
100-41-4	Ethylbenzene	10	6.9	UD	6.9	25
75-25-2	Bromoform	10	7.5	UD	7.5	25
100-42-5	Styrene	10	6.1	UD	6.1	25
98-82-8	Isopropylbenzene	10	6.7	UD	6.7	25
79-34-5	1,1,2,2-Tetrachloroethane	10	5.4	UD	5.4	25
120-82-1	1,2,4-Trichlorobenzene	10	7.0	UD	7.0	25
541-73-1	1,3-Dichlorobenzene	10	7.7	UD	7.7	25

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-06
File ID: 212DU012.D
Sampled: 04/19/21 15:45
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 12:21
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	10	7.6	UD	7.6	25
95-50-1	1,2-Dichlorobenzene	10	7.3	UD	7.3	25
96-12-8	1,2-Dibromo-3-chloropropane	10	9.6	UD	9.6	25
1330-20-7	Xylenes (Total)	10	13	UD	13	50

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	47	94	53 - 146	
Toluene-d8	50.0	55	110	41 - 146	
4-Bromofluorobenzene	50.0	41	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	244576	11.48	231702	11.44	
1,4-Difluorobenzene	406912	12.03	427152	11.99	
Chlorobenzene-d5	235585	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	198728	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-06RE1
File ID: 215DV009.D
Sampled: 04/19/21 15:45
Prepared: 04/27/21 09:01
Analyzed: 04/27/21 11:22
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27020
Sequence: AA66116
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	50	1500	D	26	120
79-01-6	Trichloroethene	50	1400	D	44	120

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	111	53 - 146	
Toluene-d8	50.0	55	110	41 - 146	
4-Bromofluorobenzene	50.0	54	108	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1039264	9.851	1384465	9.851	
1,4-Difluorobenzene	2040740	10.444	2848520	10.444	
Chlorobenzene-d5	1198082	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1099581	15.485	1623575	15.486	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0029-015.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-07
File ID: 212DV015.D
Sampled: 04/19/21 16:20
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 14:03
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.6	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	1.3	J	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	21		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	13		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0029-015.0-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-07
File ID: 212DV015.D
Sampled: 04/19/21 16:20
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 14:03
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	57	114	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	230748	11.48	231702	11.44	
1,4-Difluorobenzene	395970	12.03	427152	11.99	
Chlorobenzene-d5	235153	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	199680	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-08
File ID: 212DU013.D
Sampled: 04/20/21 11:25
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 12:50
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-08
File ID: 212DU013.D
Sampled: 04/20/21 11:25
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 12:50
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	96	53 - 146	
Toluene-d8	50.0	55	109	41 - 146	
4-Bromofluorobenzene	50.0	41	82	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	245644	11.48	231702	11.44	
1,4-Difluorobenzene	412582	12.03	427152	11.99	
Chlorobenzene-d5	238185	14.63	207404	14.59	
1,4-Dichlorobenzene-d4	198102	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-08RE1
File ID: 215DV010.D
Sampled: 04/20/21 11:25
Prepared: 04/27/21 09:01
Analyzed: 04/27/21 11:50
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27020
Sequence: AA66116
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	1	2.5		0.53	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	57	114	53 - 146	
Toluene-d8	50.0	54	108	41 - 146	
4-Bromofluorobenzene	50.0	56	112	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1037274	9.857	1384465	9.851	
1,4-Difluorobenzene	2121201	10.444	2848520	10.444	
Chlorobenzene-d5	1180790	13.223	1764069	13.223	
1,4-Dichlorobenzene-d4	1152935	15.485	1623575	15.486	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0011-025.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-09
File ID: 212DU014.D
Sampled: 04/20/21 12:00
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 13:18
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	4.3		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	11		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0011-025.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-09
File ID: 212DU014.D
Sampled: 04/20/21 12:00
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 13:18
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	47	95	53 - 146	
Toluene-d8	50.0	55	110	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	246682	11.48	231702	11.44	
1,4-Difluorobenzene	410929	12.03	427152	11.99	
Chlorobenzene-d5	236466	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	198382	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-020.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-10RE1
File ID: 212DV016.D
Sampled: 04/20/21 12:45
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 14:32
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	9.2		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	74		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	13		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-020.0-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-10RE1
File ID: 212DV016.D
Sampled: 04/20/21 12:45
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 14:32
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	53 - 146	
Toluene-d8	50.0	57	114	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	232419	11.47	231702	11.44	
1,4-Difluorobenzene	396615	12.02	427152	11.99	
Chlorobenzene-d5	236906	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	199880	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0033-047.5-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-11
File ID: 212DU016.D
Sampled: 04/20/21 13:30
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 14:16
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	400	300	UD	300	1000
74-87-3	Chloromethane	400	330	UD	330	1000
75-01-4	Vinyl chloride	400	910	JD	280	1000
74-83-9	Bromomethane	400	380	UD	380	1000
75-00-3	Chloroethane	400	390	UD	390	1000
75-69-4	Trichlorofluoromethane	400	380	UD	380	1000
76-13-1	Freon 113	400	290	UD	290	1000
67-64-1	Acetone	400	4000	UD	4000	10000
75-35-4	1,1-Dichloroethene	400	380	UD	380	1000
75-15-0	Carbon disulfide	400	1000	UD	1000	5000
75-09-2	Methylene Chloride	400	1000	UD	1000	5000
1634-04-4	Methyl-tert-Butyl Ether	400	240	UD	240	1000
156-60-5	trans-1,2-Dichloroethene	400	290	UD	290	1000
156-59-2	cis-1,2-Dichloroethene	400	21000	D	210	1000
75-34-3	1,1-Dichloroethane	400	250	UD	250	1000
78-93-3	2-Butanone	400	1800	UD	1800	5000
67-66-3	Chloroform	400	320	UD	320	1000
71-55-6	1,1,1-Trichloroethane	400	320	UD	320	1000
79-20-9	Methyl acetate	400	380	UD	380	1000
110-82-7	Cyclohexane	400	370	UD	370	1000
56-23-5	Carbon Tetrachloride	400	380	UD	380	1000
107-06-2	1,2-Dichloroethane	400	250	UD	250	1000
71-43-2	Benzene	400	280	UD	280	1000
79-01-6	Trichloroethene	400	23000	D	360	1000
78-87-5	1,2-Dichloropropane	400	320	UD	320	1000
75-27-4	Bromodichloromethane	400	210	UD	210	1000
108-10-1	4-Methyl-2-pentanone	400	1000	UD	1000	5000
591-78-6	2-Hexanone	400	1000	UD	1000	5000
10061-01-5	cis-1,3-Dichloropropene	400	240	UD	240	1000
108-88-3	Toluene	400	290	UD	290	1000
10061-02-6	trans-1,3-Dichloropropene	400	290	UD	290	1000
79-00-5	1,1,2-Trichloroethane	400	300	UD	300	1000
127-18-4	Tetrachloroethene	400	300	UD	300	1000
124-48-1	Dibromochloromethane	400	200	UD	200	1000
106-93-4	1,2-Dibromoethane	400	310	UD	310	1000
108-90-7	Chlorobenzene	400	290	UD	290	1000
100-41-4	Ethylbenzene	400	280	UD	280	1000
75-25-2	Bromoform	400	300	UD	300	1000
100-42-5	Styrene	400	240	UD	240	1000
98-82-8	Isopropylbenzene	400	270	UD	270	1000
79-34-5	1,1,2,2-Tetrachloroethane	400	220	UD	220	1000

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0033-047.5-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-11
File ID: 212DU016.D
Sampled: 04/20/21 13:30
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 14:16
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	400	280	UD	280	1000
541-73-1	1,3-Dichlorobenzene	400	310	UD	310	1000
106-46-7	1,4-Dichlorobenzene	400	300	UD	300	1000
95-50-1	1,2-Dichlorobenzene	400	290	UD	290	1000
96-12-8	1,2-Dibromo-3-chloropropane	400	380	UD	380	1000
1330-20-7	Xylenes (Total)	400	520	UD	520	2000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	97	53 - 146	
Toluene-d8	50.0	55	111	41 - 146	
4-Bromofluorobenzene	50.0	42	85	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	241896	11.49	231702	11.44	
1,4-Difluorobenzene	403354	12.04	427152	11.99	
Chlorobenzene-d5	232112	14.63	207404	14.59	
1,4-Dichlorobenzene-d4	194916	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-12
File ID: 212DU017.D
Sampled: 04/20/21 15:20
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 14:44
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	100	74	UD	74	250
74-87-3	Chloromethane	100	82	UD	82	250
75-01-4	Vinyl chloride	100	170	JD	71	250
74-83-9	Bromomethane	100	95	UD	95	250
75-00-3	Chloroethane	100	98	UD	98	250
75-69-4	Trichlorofluoromethane	100	94	UD	94	250
76-13-1	Freon 113	100	73	UD	73	250
67-64-1	Acetone	100	1000	UD	1000	2500
75-35-4	1,1-Dichloroethene	100	94	UD	94	250
75-15-0	Carbon disulfide	100	250	UD	250	1200
75-09-2	Methylene Chloride	100	250	UD	250	1200
1634-04-4	Methyl-tert-Butyl Ether	100	60	UD	60	250
156-60-5	trans-1,2-Dichloroethene	100	73	UD	73	250
156-59-2	cis-1,2-Dichloroethene	100	5200	D	53	250
75-34-3	1,1-Dichloroethane	100	62	UD	62	250
78-93-3	2-Butanone	100	450	UD	450	1200
67-66-3	Chloroform	100	80	UD	80	250
71-55-6	1,1,1-Trichloroethane	100	80	UD	80	250
79-20-9	Methyl acetate	100	95	UD	95	250
110-82-7	Cyclohexane	100	93	UD	93	250
56-23-5	Carbon Tetrachloride	100	94	UD	94	250
107-06-2	1,2-Dichloroethane	100	63	UD	63	250
71-43-2	Benzene	100	71	UD	71	250
79-01-6	Trichloroethene	100	5400	D	89	250
78-87-5	1,2-Dichloropropane	100	80	UD	80	250
75-27-4	Bromodichloromethane	100	52	UD	52	250
108-10-1	4-Methyl-2-pentanone	100	250	UD	250	1200
591-78-6	2-Hexanone	100	250	UD	250	1200
10061-01-5	cis-1,3-Dichloropropene	100	59	UD	59	250
108-88-3	Toluene	100	72	UD	72	250
10061-02-6	trans-1,3-Dichloropropene	100	73	UD	73	250
79-00-5	1,1,2-Trichloroethane	100	76	UD	76	250
127-18-4	Tetrachloroethene	100	76	UD	76	250
124-48-1	Dibromochloromethane	100	50	UD	50	250
106-93-4	1,2-Dibromoethane	100	78	UD	78	250
108-90-7	Chlorobenzene	100	72	UD	72	250
100-41-4	Ethylbenzene	100	69	UD	69	250
75-25-2	Bromoform	100	75	UD	75	250
100-42-5	Styrene	100	61	UD	61	250
98-82-8	Isopropylbenzene	100	67	UD	67	250
79-34-5	1,1,2,2-Tetrachloroethane	100	54	UD	54	250

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210420

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-12
File ID: 212DU017.D
Sampled: 04/20/21 15:20
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 14:44
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	100	70	UD	70	250
541-73-1	1,3-Dichlorobenzene	100	77	UD	77	250
106-46-7	1,4-Dichlorobenzene	100	76	UD	76	250
95-50-1	1,2-Dichlorobenzene	100	73	UD	73	250
96-12-8	1,2-Dibromo-3-chloropropane	100	96	UD	96	250
1330-20-7	Xylenes (Total)	100	130	UD	130	500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	47	94	53 - 146	
Toluene-d8	50.0	54	109	41 - 146	
4-Bromofluorobenzene	50.0	41	82	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	251237	11.49	231702	11.44	
1,4-Difluorobenzene	417015	12.03	427152	11.99	
Chlorobenzene-d5	239541	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	201215	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0047-025.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-13
File ID: 212DU018.D
Sampled: 04/21/21 09:40
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 15:13
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.90	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	2.4	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0047-025.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-13
File ID: 212DU018.D
Sampled: 04/21/21 09:40
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 15:13
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	97	53 - 146	
Toluene-d8	50.0	55	110	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	246438	11.48	231702	11.44	
1,4-Difluorobenzene	410166	12.03	427152	11.99	
Chlorobenzene-d5	235790	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	198830	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0046-015.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-14
File ID: 212DU019.D
Sampled: 04/21/21 10:20
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 15:41
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	2.5		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.99	J	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0046-015.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-14
File ID: 212DU019.D
Sampled: 04/21/21 10:20
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 15:41
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	53 - 146	
Toluene-d8	50.0	56	111	41 - 146	
4-Bromofluorobenzene	50.0	41	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	244179	11.48	231702	11.44	
1,4-Difluorobenzene	410483	12.04	427152	11.99	
Chlorobenzene-d5	236047	14.63	207404	14.59	
1,4-Dichlorobenzene-d4	197245	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-15
File ID: 212DU020.D
Sampled: 04/21/21 10:50
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 16:10
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	22		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.58	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	11		0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.95	J	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-15
File ID: 212DU020.D
Sampled: 04/21/21 10:50
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 16:10
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	58	117	41 - 146	
4-Bromofluorobenzene	50.0	44	88	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	245225	11.48	231702	11.44	
1,4-Difluorobenzene	410506	12.03	427152	11.99	
Chlorobenzene-d5	236187	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	197387	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-16
File ID: 212DU021.D
Sampled: 04/21/21 11:30
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 16:39
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	1.6	J	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	1.4	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	3.1		0.53	2.5
75-34-3	1,1-Dichloroethane	1	34		0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	3.0		0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-16
File ID: 212DU021.D
Sampled: 04/21/21 11:30
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 16:39
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	3.9	J	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	99	53 - 146	
Toluene-d8	50.0	56	111	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	237143	11.48	231702	11.44	
1,4-Difluorobenzene	400119	12.04	427152	11.99	
Chlorobenzene-d5	232700	14.63	207404	14.59	
1,4-Dichlorobenzene-d4	198668	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-16RE1
File ID: 215DV011.D
Sampled: 04/21/21 11:30
Prepared: 04/27/21 09:01
Analyzed: 04/27/21 12:18
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27020
Sequence: AA66116
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-01-4	Vinyl chloride	5	120	D	3.6	12

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	107	53 - 146	
Toluene-d8	50.0	57	113	41 - 146	
4-Bromofluorobenzene	50.0	52	104	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1065094	9.851	1384465	9.851	
1,4-Difluorobenzene	2062369	10.444	2848520	10.444	
Chlorobenzene-d5	1252983	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1157187	15.485	1623575	15.486	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-17
File ID: 212DV017.D
Sampled: 04/21/21 12:10
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 15:00
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1000	740	UD	740	2500
74-87-3	Chloromethane	1000	820	UD	820	2500
75-01-4	Vinyl chloride	1000	710	UD	710	2500
74-83-9	Bromomethane	1000	950	UD	950	2500
75-00-3	Chloroethane	1000	980	UD	980	2500
75-69-4	Trichlorofluoromethane	1000	940	UD	940	2500
76-13-1	Freon 113	1000	27000	D	730	2500
67-64-1	Acetone	1000	10000	UD	10000	25000
75-35-4	1,1-Dichloroethene	1000	940	UD	940	2500
75-15-0	Carbon disulfide	1000	2500	UD	2500	12000
75-09-2	Methylene Chloride	1000	2500	UD	2500	12000
1634-04-4	Methyl-tert-Butyl Ether	1000	600	UD	600	2500
156-60-5	trans-1,2-Dichloroethene	1000	730	UD	730	2500
156-59-2	cis-1,2-Dichloroethene	1000	3200	D	530	2500
75-34-3	1,1-Dichloroethane	1000	620	UD	620	2500
78-93-3	2-Butanone	1000	4500	UD	4500	12000
67-66-3	Chloroform	1000	800	UD	800	2500
71-55-6	1,1,1-Trichloroethane	1000	800	UD	800	2500
79-20-9	Methyl acetate	1000	950	UD	950	2500
110-82-7	Cyclohexane	1000	930	UD	930	2500
56-23-5	Carbon Tetrachloride	1000	940	UD	940	2500
107-06-2	1,2-Dichloroethane	1000	630	UD	630	2500
71-43-2	Benzene	1000	710	UD	710	2500
79-01-6	Trichloroethene	1000	98000	D	890	2500
78-87-5	1,2-Dichloropropane	1000	800	UD	800	2500
75-27-4	Bromodichloromethane	1000	520	UD	520	2500
108-10-1	4-Methyl-2-pentanone	1000	2500	UD	2500	12000
591-78-6	2-Hexanone	1000	2500	UD	2500	12000
10061-01-5	cis-1,3-Dichloropropene	1000	590	UD	590	2500
108-88-3	Toluene	1000	720	UD	720	2500
10061-02-6	trans-1,3-Dichloropropene	1000	730	UD	730	2500
79-00-5	1,1,2-Trichloroethane	1000	760	UD	760	2500
127-18-4	Tetrachloroethene	1000	760	UD	760	2500
124-48-1	Dibromochloromethane	1000	500	UD	500	2500
106-93-4	1,2-Dibromoethane	1000	780	UD	780	2500
108-90-7	Chlorobenzene	1000	720	UD	720	2500
100-41-4	Ethylbenzene	1000	690	UD	690	2500
75-25-2	Bromoform	1000	750	UD	750	2500
100-42-5	Styrene	1000	610	UD	610	2500
98-82-8	Isopropylbenzene	1000	670	UD	670	2500
79-34-5	1,1,2,2-Tetrachloroethane	1000	540	UD	540	2500

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-17
File ID: 212DV017.D
Sampled: 04/21/21 12:10
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 15:00
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1000	700	UD	700	2500
541-73-1	1,3-Dichlorobenzene	1000	770	UD	770	2500
106-46-7	1,4-Dichlorobenzene	1000	760	UD	760	2500
95-50-1	1,2-Dichlorobenzene	1000	730	UD	730	2500
96-12-8	1,2-Dibromo-3-chloropropane	1000	960	UD	960	2500
1330-20-7	Xylenes (Total)	1000	1300	UD	1300	5000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	103	53 - 146	
Toluene-d8	50.0	57	115	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	230894	11.48	231702	11.44	
1,4-Difluorobenzene	394491	12.03	427152	11.99	
Chlorobenzene-d5	235382	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	200618	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-18
File ID: 212DV018.D
Sampled: 04/21/21 12:50
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 15:29
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	5000	3700	UD	3700	12000
74-87-3	Chloromethane	5000	4100	UD	4100	12000
75-01-4	Vinyl chloride	5000	3600	UD	3600	12000
74-83-9	Bromomethane	5000	4800	UD	4800	12000
75-00-3	Chloroethane	5000	4900	UD	4900	12000
75-69-4	Trichlorofluoromethane	5000	4700	UD	4700	12000
76-13-1	Freon 113	5000	140000	D	3600	12000
67-64-1	Acetone	5000	50000	UD	50000	120000
75-35-4	1,1-Dichloroethene	5000	4700	UD	4700	12000
75-15-0	Carbon disulfide	5000	12000	UD	12000	62000
75-09-2	Methylene Chloride	5000	12000	UD	12000	62000
1634-04-4	Methyl-tert-Butyl Ether	5000	3000	UD	3000	12000
156-60-5	trans-1,2-Dichloroethene	5000	3600	UD	3600	12000
156-59-2	cis-1,2-Dichloroethene	5000	16000	D	2600	12000
75-34-3	1,1-Dichloroethane	5000	3100	UD	3100	12000
78-93-3	2-Butanone	5000	22000	UD	22000	62000
67-66-3	Chloroform	5000	4000	UD	4000	12000
71-55-6	1,1,1-Trichloroethane	5000	4000	UD	4000	12000
79-20-9	Methyl acetate	5000	4800	UD	4800	12000
110-82-7	Cyclohexane	5000	4600	UD	4600	12000
56-23-5	Carbon Tetrachloride	5000	4700	UD	4700	12000
107-06-2	1,2-Dichloroethane	5000	3200	UD	3200	12000
71-43-2	Benzene	5000	3600	UD	3600	12000
78-87-5	1,2-Dichloropropane	5000	4000	UD	4000	12000
75-27-4	Bromodichloromethane	5000	2600	UD	2600	12000
108-10-1	4-Methyl-2-pentanone	5000	12000	UD	12000	62000
591-78-6	2-Hexanone	5000	12000	UD	12000	62000
10061-01-5	cis-1,3-Dichloropropene	5000	3000	UD	3000	12000
108-88-3	Toluene	5000	3600	UD	3600	12000
10061-02-6	trans-1,3-Dichloropropene	5000	3600	UD	3600	12000
79-00-5	1,1,2-Trichloroethane	5000	3800	UD	3800	12000
127-18-4	Tetrachloroethene	5000	3800	UD	3800	12000
124-48-1	Dibromochloromethane	5000	2500	UD	2500	12000
106-93-4	1,2-Dibromoethane	5000	3900	UD	3900	12000
108-90-7	Chlorobenzene	5000	3600	UD	3600	12000
100-41-4	Ethylbenzene	5000	3400	UD	3400	12000
75-25-2	Bromoform	5000	3800	UD	3800	12000
100-42-5	Styrene	5000	3000	UD	3000	12000
98-82-8	Isopropylbenzene	5000	3400	UD	3400	12000
79-34-5	1,1,2,2-Tetrachloroethane	5000	2700	UD	2700	12000
120-82-1	1,2,4-Trichlorobenzene	5000	3500	UD	3500	12000

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-18
File ID: 212DV018.D
Sampled: 04/21/21 12:50
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 15:29
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
541-73-1	1,3-Dichlorobenzene	5000	3800	UD	3800	12000
106-46-7	1,4-Dichlorobenzene	5000	3800	UD	3800	12000
95-50-1	1,2-Dichlorobenzene	5000	3600	UD	3600	12000
96-12-8	1,2-Dibromo-3-chloropropane	5000	4800	UD	4800	12000
1330-20-7	Xylenes (Total)	5000	6500	UD	6500	25000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	59	118	41 - 146	
4-Bromofluorobenzene	50.0	43	86	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	235204	11.48	231702	11.44	
1,4-Difluorobenzene	400170	12.03	427152	11.99	
Chlorobenzene-d5	239342	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	204444	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-18RE1
File ID: 215DW010.D
Sampled: 04/21/21 12:50
Prepared: 04/28/21 10:09
Analyzed: 04/28/21 12:13
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D28033
Sequence: AA66142
Calibration: 2103152
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
79-01-6	Trichloroethene	10000	430000	D	8900	25000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	62	124	53 - 146	
Toluene-d8	50.0	60	121	41 - 146	
4-Bromofluorobenzene	50.0	55	110	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1098828	9.857	1384465	9.851	
1,4-Difluorobenzene	2289725	10.45	2848520	10.444	
Chlorobenzene-d5	1365689	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1237123	15.486	1623575	15.486	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0004-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-19
File ID: 212DV019.D
Sampled: 04/21/21 13:25
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 15:57
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	1.4	J	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	6.5		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	29		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0004-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-19
File ID: 212DV019.D
Sampled: 04/21/21 13:25
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 15:57
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	57	114	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	229332	11.48	231702	11.44	
1,4-Difluorobenzene	395299	12.03	427152	11.99	
Chlorobenzene-d5	234752	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	199061	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0016-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-20
File ID: 212DU022.D
Sampled: 04/21/21 14:05
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 17:07
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	10		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	5.7		0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	66		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0016-010.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-20
File ID: 212DU022.D
Sampled: 04/21/21 14:05
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 17:07
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	98	53 - 146	
Toluene-d8	50.0	56	112	41 - 146	
4-Bromofluorobenzene	50.0	42	85	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	241256	11.49	231702	11.44	
1,4-Difluorobenzene	405049	12.03	427152	11.99	
Chlorobenzene-d5	233048	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	196025	17	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0045-030.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-21
File ID: 212DU023.D
Sampled: 04/21/21 14:50
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 17:36
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.6	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	6.2		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	1.2	J	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0045-030.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-21
File ID: 212DU023.D
Sampled: 04/21/21 14:50
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 17:36
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	97	53 - 146	
Toluene-d8	50.0	55	110	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	244219	11.48	231702	11.44	
1,4-Difluorobenzene	410683	12.03	427152	11.99	
Chlorobenzene-d5	234426	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	196160	17	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0024-060.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-22
File ID: 212DU024.D
Sampled: 04/22/21 11:40
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 18:04
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	0.90	J	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0024-060.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-22
File ID: 212DU024.D
Sampled: 04/22/21 11:40
Prepared: 04/26/21 00:00
Analyzed: 04/26/21 18:04
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D26010
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	48	96	53 - 146	
Toluene-d8	50.0	55	111	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	244725	11.49	231702	11.44	
1,4-Difluorobenzene	408514	12.04	427152	11.99	
Chlorobenzene-d5	237207	14.63	207404	14.59	
1,4-Dichlorobenzene-d4	201024	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210422

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water Laboratory ID: AE02766-23 File ID: 212DV020.D

Sampled: 04/22/21 12:20 Prepared: 04/27/21 00:00 Analyzed: 04/27/21 16:26

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1D27005 Sequence: AA66113 Calibration: 2103054 Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	10	7.4	UD	7.4	25
74-87-3	Chloromethane	10	8.2	UD	8.2	25
75-01-4	Vinyl chloride	10	7.1	UD	7.1	25
74-83-9	Bromomethane	10	9.5	UD	9.5	25
75-00-3	Chloroethane	10	9.8	UD	9.8	25
75-69-4	Trichlorofluoromethane	10	9.4	UD	9.4	25
76-13-1	Freon 113	10	850	D	7.3	25
67-64-1	Acetone	10	100	UD	100	250
75-35-4	1,1-Dichloroethene	10	9.4	UD	9.4	25
75-15-0	Carbon disulfide	10	25	UD	25	120
75-09-2	Methylene Chloride	10	25	UD	25	120
1634-04-4	Methyl-tert-Butyl Ether	10	6.0	UD	6.0	25
156-60-5	trans-1,2-Dichloroethene	10	7.3	UD	7.3	25
156-59-2	cis-1,2-Dichloroethene	10	86	D	5.3	25
75-34-3	1,1-Dichloroethane	10	6.2	UD	6.2	25
78-93-3	2-Butanone	10	45	UD	45	120
67-66-3	Chloroform	10	8.0	UD	8.0	25
71-55-6	1,1,1-Trichloroethane	10	8.0	UD	8.0	25
79-20-9	Methyl acetate	10	9.5	UD	9.5	25
110-82-7	Cyclohexane	10	9.3	UD	9.3	25
56-23-5	Carbon Tetrachloride	10	9.4	UD	9.4	25
107-06-2	1,2-Dichloroethane	10	6.3	UD	6.3	25
71-43-2	Benzene	10	7.1	UD	7.1	25
79-01-6	Trichloroethene	10	320	D	8.9	25
78-87-5	1,2-Dichloropropane	10	8.0	UD	8.0	25
75-27-4	Bromodichloromethane	10	5.2	UD	5.2	25
108-10-1	4-Methyl-2-pentanone	10	25	UD	25	120
591-78-6	2-Hexanone	10	25	UD	25	120
10061-01-5	cis-1,3-Dichloropropene	10	5.9	UD	5.9	25
108-88-3	Toluene	10	7.2	UD	7.2	25
10061-02-6	trans-1,3-Dichloropropene	10	7.3	UD	7.3	25
79-00-5	1,1,2-Trichloroethane	10	7.6	UD	7.6	25
127-18-4	Tetrachloroethene	10	7.6	UD	7.6	25
124-48-1	Dibromochloromethane	10	5.0	UD	5.0	25
106-93-4	1,2-Dibromoethane	10	7.8	UD	7.8	25
108-90-7	Chlorobenzene	10	7.2	UD	7.2	25
100-41-4	Ethylbenzene	10	6.9	UD	6.9	25
75-25-2	Bromoform	10	7.5	UD	7.5	25
100-42-5	Styrene	10	6.1	UD	6.1	25
98-82-8	Isopropylbenzene	10	6.7	UD	6.7	25
79-34-5	1,1,2,2-Tetrachloroethane	10	5.4	UD	5.4	25

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-23
File ID: 212DV020.D
Sampled: 04/22/21 12:20
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 16:26
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	10	7.0	UD	7.0	25
541-73-1	1,3-Dichlorobenzene	10	7.7	UD	7.7	25
106-46-7	1,4-Dichlorobenzene	10	7.6	UD	7.6	25
95-50-1	1,2-Dichlorobenzene	10	7.3	UD	7.3	25
96-12-8	1,2-Dibromo-3-chloropropane	10	9.6	UD	9.6	25
1330-20-7	Xylenes (Total)	10	13	UD	13	50

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	57	115	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	226398	11.48	231702	11.44	
1,4-Difluorobenzene	388821	12.03	427152	11.99	
Chlorobenzene-d5	235123	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	200604	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0008-025.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-24
File ID: 212DV021.D
Sampled: 04/22/21 12:55
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 16:55
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.6	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	2.1	J	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	42		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	14		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0008-025.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-24
File ID: 212DV021.D
Sampled: 04/22/21 12:55
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 16:55
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	103	53 - 146	
Toluene-d8	50.0	58	115	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	228126	11.48	231702	11.44	
1,4-Difluorobenzene	391088	12.03	427152	11.99	
Chlorobenzene-d5	235329	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	198535	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-25
File ID: 212DV022.D
Sampled: 04/22/21 13:45
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 17:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	50	37	UD	37	120
74-87-3	Chloromethane	50	41	UD	41	120
75-01-4	Vinyl chloride	50	180	D	36	120
74-83-9	Bromomethane	50	48	UD	48	120
75-00-3	Chloroethane	50	49	UD	49	120
75-69-4	Trichlorofluoromethane	50	47	UD	47	120
76-13-1	Freon 113	50	36	UD	36	120
67-64-1	Acetone	50	500	UD	500	1200
75-35-4	1,1-Dichloroethene	50	47	UD	47	120
75-15-0	Carbon disulfide	50	120	UD	120	620
75-09-2	Methylene Chloride	50	120	UD	120	620
1634-04-4	Methyl-tert-Butyl Ether	50	30	UD	30	120
156-60-5	trans-1,2-Dichloroethene	50	36	UD	36	120
156-59-2	cis-1,2-Dichloroethene	50	3800	D	26	120
75-34-3	1,1-Dichloroethane	50	31	UD	31	120
78-93-3	2-Butanone	50	220	UD	220	620
67-66-3	Chloroform	50	40	UD	40	120
71-55-6	1,1,1-Trichloroethane	50	40	UD	40	120
79-20-9	Methyl acetate	50	48	UD	48	120
110-82-7	Cyclohexane	50	46	UD	46	120
56-23-5	Carbon Tetrachloride	50	47	UD	47	120
107-06-2	1,2-Dichloroethane	50	32	UD	32	120
71-43-2	Benzene	50	36	UD	36	120
79-01-6	Trichloroethene	50	960	D	44	120
78-87-5	1,2-Dichloropropane	50	40	UD	40	120
75-27-4	Bromodichloromethane	50	26	UD	26	120
108-10-1	4-Methyl-2-pentanone	50	120	UD	120	620
591-78-6	2-Hexanone	50	120	UD	120	620
10061-01-5	cis-1,3-Dichloropropene	50	30	UD	30	120
108-88-3	Toluene	50	36	UD	36	120
10061-02-6	trans-1,3-Dichloropropene	50	36	UD	36	120
79-00-5	1,1,2-Trichloroethane	50	38	UD	38	120
127-18-4	Tetrachloroethene	50	38	UD	38	120
124-48-1	Dibromochloromethane	50	25	UD	25	120
106-93-4	1,2-Dibromoethane	50	39	UD	39	120
108-90-7	Chlorobenzene	50	36	UD	36	120
100-41-4	Ethylbenzene	50	34	UD	34	120
75-25-2	Bromoform	50	38	UD	38	120
100-42-5	Styrene	50	30	UD	30	120
98-82-8	Isopropylbenzene	50	34	UD	34	120
79-34-5	1,1,2,2-Tetrachloroethane	50	27	UD	27	120

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-25
File ID: 212DV022.D
Sampled: 04/22/21 13:45
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 17:23
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	50	35	UD	35	120
541-73-1	1,3-Dichlorobenzene	50	38	UD	38	120
106-46-7	1,4-Dichlorobenzene	50	38	UD	38	120
95-50-1	1,2-Dichlorobenzene	50	36	UD	36	120
96-12-8	1,2-Dibromo-3-chloropropane	50	48	UD	48	120
1330-20-7	Xylenes (Total)	50	65	UD	65	250

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	57	115	41 - 146	
4-Bromofluorobenzene	50.0	42	84	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	225772	11.48	231702	11.44	
1,4-Difluorobenzene	392179	12.02	427152	11.99	
Chlorobenzene-d5	233087	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	197314	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0043-035.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-26
File ID: 212DV023.D
Sampled: 04/22/21 14:45
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 17:52
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	14		0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	52		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	7.8		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0043-035.0-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-26
File ID: 212DV023.D
Sampled: 04/22/21 14:45
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 17:52
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	60	120	41 - 146	
4-Bromofluorobenzene	50.0	44	87	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	226106	11.49	231702	11.44	
1,4-Difluorobenzene	393079	12.04	427152	11.99	
Chlorobenzene-d5	235293	14.63	207404	14.59	
1,4-Dichlorobenzene-d4	197324	17	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-27
File ID: 212DV024.D
Sampled: 04/21/21 15:30
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 18:20
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	11		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	6.4		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-27
File ID: 212DV024.D
Sampled: 04/21/21 15:30
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 18:20
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	56	113	41 - 146	
4-Bromofluorobenzene	50.0	41	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	226379	11.48	231702	11.44	
1,4-Difluorobenzene	392284	12.03	427152	11.99	
Chlorobenzene-d5	233536	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	197762	16.99	156147	16.94	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-28
File ID: 212DV025.D
Sampled: 04/21/21 16:10
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 18:49
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.95	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
67-64-1	Acetone	1	10	U	10	25
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
75-15-0	Carbon disulfide	1	2.5	U	2.5	12
75-09-2	Methylene Chloride	1	2.5	U	2.5	12
1634-04-4	Methyl-tert-Butyl Ether	1	0.60	U	0.60	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	18		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
78-93-3	2-Butanone	1	4.5	U	4.5	12
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
79-20-9	Methyl acetate	1	0.95	U	0.95	2.5
110-82-7	Cyclohexane	1	0.93	U	0.93	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
71-43-2	Benzene	1	0.71	U	0.71	2.5
79-01-6	Trichloroethene	1	2.5		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
108-10-1	4-Methyl-2-pentanone	1	2.5	U	2.5	12
591-78-6	2-Hexanone	1	2.5	U	2.5	12
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
108-88-3	Toluene	1	0.72	U	0.72	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
100-41-4	Ethylbenzene	1	0.69	U	0.69	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
100-42-5	Styrene	1	0.61	U	0.61	2.5
98-82-8	Isopropylbenzene	1	0.67	U	0.67	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210421

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Matrix: Ground Water
Laboratory ID: AE02766-28
File ID: 212DV025.D
Sampled: 04/21/21 16:10
Prepared: 04/27/21 00:00
Analyzed: 04/27/21 18:49
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1D27005
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5
1330-20-7	Xylenes (Total)	1	1.3	U	1.3	5.0

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	101	53 - 146	
Toluene-d8	50.0	56	112	41 - 146	
4-Bromofluorobenzene	50.0	41	82	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	232031	11.48	231702	11.44	
1,4-Difluorobenzene	399685	12.03	427152	11.99	
Chlorobenzene-d5	238154	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	201122	16.99	156147	16.94	

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-MW0040-042.5-20210419	04/19/21 10:30	04/22/21 14:51	04/26/21 00:00	6.56	NA	04/26/21 10:55	7.00	14.00	
HMPN-MW0039-035.0-20210419	04/19/21 11:10	04/22/21 14:51	04/27/21 00:00	7.53	NA	04/27/21 12:37	8.00	14.00	
HMPN-MW0041-035.0-20210419	04/19/21 12:00	04/22/21 14:51	04/26/21 00:00	6.50	NA	04/26/21 11:53	7.00	14.00	
HMPN-MW0041-035.0-20210419	04/19/21 12:00	04/22/21 14:51	04/27/21 09:01	7.88	NA	04/27/21 10:54	8.00	14.00	
HMPN-MW0044-045.0-20210419	04/19/21 12:50	04/22/21 14:51	04/27/21 00:00	7.47	NA	04/27/21 13:06	8.00	14.00	
HMPN-MW0030-025.0-20210419	04/19/21 14:10	04/22/21 14:51	04/28/21 10:09	8.83	NA	04/28/21 11:45	9.00	14.00	
HMPN-MW0030-025.0-20210419	04/19/21 14:10	04/22/21 14:51	04/28/21 00:00	8.41	NA	04/28/21 13:03	9.00	14.00	
HMPN-MW0031-035.0-20210419	04/19/21 15:45	04/22/21 14:51	04/26/21 00:00	6.34	NA	04/26/21 12:21	7.00	14.00	
HMPN-MW0031-035.0-20210419	04/19/21 15:45	04/22/21 14:51	04/27/21 09:01	7.72	NA	04/27/21 11:22	8.00	14.00	
HMPN-MW0029-015.0-20210419	04/19/21 16:20	04/22/21 14:51	04/27/21 00:00	7.32	NA	04/27/21 14:03	8.00	14.00	
HMPN-MW0036-015.0-20210420	04/20/21 11:25	04/22/21 14:51	04/26/21 00:00	5.52	NA	04/26/21 12:50	6.00	14.00	
HMPN-MW0036-015.0-20210420	04/20/21 11:25	04/22/21 14:51	04/27/21 09:01	6.90	NA	04/27/21 11:50	7.00	14.00	
HMPN-MW0011-025.0-20210420	04/20/21 12:00	04/22/21 14:51	04/26/21 00:00	5.50	NA	04/26/21 13:18	6.00	14.00	
HMPN-MW0009-020.0-20210420	04/20/21 12:45	04/22/21 14:51	04/27/21 00:00	6.47	NA	04/27/21 14:32	7.00	14.00	
HMPN-MW0033-047.5-20210420	04/20/21 13:30	04/22/21 14:51	04/26/21 00:00	5.44	NA	04/26/21 14:16	6.00	14.00	
HMPN-MW0032-042.5-20210420	04/20/21 15:20	04/22/21 14:51	04/26/21 00:00	5.36	NA	04/26/21 14:44	6.00	14.00	
HMPN-MW0047-025.0-20210421	04/21/21 09:40	04/22/21 14:51	04/26/21 00:00	4.60	NA	04/26/21 15:13	5.00	14.00	
HMPN-MW0046-015.0-20210421	04/21/21 10:20	04/22/21 14:51	04/26/21 00:00	4.57	NA	04/26/21 15:41	5.00	14.00	
HMPN-MW0038-020.0-20210421	04/21/21 10:50	04/22/21 14:51	04/26/21 00:00	4.55	NA	04/26/21 16:10	5.00	14.00	
HMPN-MW0037-010.0-20210421	04/21/21 11:30	04/22/21 14:51	04/26/21 00:00	4.52	NA	04/26/21 16:39	5.00	14.00	
HMPN-MW0037-010.0-20210421	04/21/21 11:30	04/22/21 14:51	04/27/21 09:01	5.90	NA	04/27/21 12:18	6.00	14.00	
HMPN-MW0027-042.5-20210421	04/21/21 12:10	04/22/21 14:51	04/27/21 00:00	5.49	NA	04/27/21 15:00	6.00	14.00	
HMPN-MW0028-047.5-20210421	04/21/21 12:50	04/22/21 14:51	04/27/21 00:00	5.47	NA	04/27/21 15:29	6.00	14.00	

HOLDING TIME SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-MW0028-047.5-20210421	04/21/21 12:50	04/22/21 14:51	04/28/21 10:09	6.89	NA	04/28/21 12:13	7.00	14.00	
HMPN-MW0004-010.0-20210421	04/21/21 13:25	04/22/21 14:51	04/27/21 00:00	5.44	NA	04/27/21 15:57	6.00	14.00	
HMPN-MW0016-010.0-20210421	04/21/21 14:05	04/22/21 14:51	04/26/21 00:00	4.41	NA	04/26/21 17:07	5.00	14.00	
HMPN-MW0045-030.0-20210421	04/21/21 14:50	04/22/21 14:51	04/26/21 00:00	4.38	NA	04/26/21 17:36	5.00	14.00	
HMPN-MW0024-060.0-20210422	04/22/21 11:40	04/22/21 14:51	04/26/21 00:00	3.51	NA	04/26/21 18:04	4.00	14.00	
HMPN-MW0002-035.0-20210422	04/22/21 12:20	04/22/21 14:51	04/27/21 00:00	4.49	NA	04/27/21 16:26	5.00	14.00	
HMPN-MW0008-025.0-20210422	04/22/21 12:55	04/22/21 14:51	04/27/21 00:00	4.46	NA	04/27/21 16:55	5.00	14.00	
HMPN-MW0042-042.5-20210422	04/22/21 13:45	04/22/21 14:51	04/27/21 00:00	4.43	NA	04/27/21 17:23	5.00	14.00	
HMPN-MW0043-035.0-20210422	04/22/21 14:45	04/22/21 14:51	04/27/21 00:00	4.39	NA	04/27/21 17:52	5.00	14.00	
HMPN-MW0034-015.0-20210421	04/21/21 15:30	04/22/21 14:51	04/27/21 00:00	5.35	NA	04/27/21 18:20	6.00	14.00	
HMPN-MW0035-035.0-20210421	04/21/21 16:10	04/22/21 14:51	04/27/21 00:00	5.33	NA	04/27/21 18:49	6.00	14.00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1D26010 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1D26010-BLK1	212DU007.D	04/26/21 00:00	
LCS	1D26010-BS1	212DU003.D	04/26/21 00:00	
HMPN-MW0040-042.5-20210419	1D26010-MS1	212DU004.D	04/26/21 00:00	
HMPN-MW0040-042.5-20210419	1D26010-MSD1	212DU005.D	04/26/21 00:00	
HMPN-MW0040-042.5-20210419	AE02766-01	212DU009.D	04/26/21 00:00	
HMPN-MW0041-035.0-20210419	AE02766-03	212DU011.D	04/26/21 00:00	
HMPN-MW0031-035.0-20210419	AE02766-06	212DU012.D	04/26/21 00:00	
HMPN-MW0036-015.0-20210420	AE02766-08	212DU013.D	04/26/21 00:00	
HMPN-MW0011-025.0-20210420	AE02766-09	212DU014.D	04/26/21 00:00	
HMPN-MW0033-047.5-20210420	AE02766-11	212DU016.D	04/26/21 00:00	
HMPN-MW0032-042.5-20210420	AE02766-12	212DU017.D	04/26/21 00:00	
HMPN-MW0047-025.0-20210421	AE02766-13	212DU018.D	04/26/21 00:00	
HMPN-MW0046-015.0-20210421	AE02766-14	212DU019.D	04/26/21 00:00	
HMPN-MW0038-020.0-20210421	AE02766-15	212DU020.D	04/26/21 00:00	
HMPN-MW0037-010.0-20210421	AE02766-16	212DU021.D	04/26/21 00:00	
HMPN-MW0016-010.0-20210421	AE02766-20	212DU022.D	04/26/21 00:00	
HMPN-MW0045-030.0-20210421	AE02766-21	212DU023.D	04/26/21 00:00	
HMPN-MW0024-060.0-20210422	AE02766-22	212DU024.D	04/26/21 00:00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1D27005 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1D27005-BLK1	212DV007.D	04/27/21 00:00	
LCS	1D27005-BS1	212DV003.D	04/27/21 00:00	
CWWTF-INF	1D27005-MS1	212DV004.D	04/27/21 00:00	
CWWTF-INF	1D27005-MSD1	212DV005.D	04/27/21 00:00	
HMPN-MW0039-035.0-20210419	AE02766-02RE1	212DV012.D	04/27/21 00:00	
HMPN-MW0044-045.0-20210419	AE02766-04	212DV013.D	04/27/21 00:00	
HMPN-MW0029-015.0-20210419	AE02766-07	212DV015.D	04/27/21 00:00	
HMPN-MW0009-020.0-20210420	AE02766-10RE1	212DV016.D	04/27/21 00:00	
HMPN-MW0027-042.5-20210421	AE02766-17	212DV017.D	04/27/21 00:00	
HMPN-MW0028-047.5-20210421	AE02766-18	212DV018.D	04/27/21 00:00	
HMPN-MW0004-010.0-20210421	AE02766-19	212DV019.D	04/27/21 00:00	
HMPN-MW0002-035.0-20210422	AE02766-23	212DV020.D	04/27/21 00:00	
HMPN-MW0008-025.0-20210422	AE02766-24	212DV021.D	04/27/21 00:00	
HMPN-MW0042-042.5-20210422	AE02766-25	212DV022.D	04/27/21 00:00	
HMPN-MW0043-035.0-20210422	AE02766-26	212DV023.D	04/27/21 00:00	
HMPN-MW0034-015.0-20210421	AE02766-27	212DV024.D	04/27/21 00:00	
HMPN-MW0035-035.0-20210421	AE02766-28	212DV025.D	04/27/21 00:00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN SWMU 090

Batch: 1D27020 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1D27020-BLK1	215DV005.D	04/27/21 00:00	
LCS	1D27020-BS1	215DV003.D	04/27/21 00:00	
CRCA-ASEFFLUENT-20210422	1D27020-MS1	215DV024.D	04/27/21 00:00	
CRCA-ASEFFLUENT-20210422	1D27020-MSD1	215DV025.D	04/27/21 00:00	
HMPN-MW0041-035.0-20210419	AE02766-03RE1	215DV008.D	04/27/21 09:01	
HMPN-MW0031-035.0-20210419	AE02766-06RE1	215DV009.D	04/27/21 09:01	
HMPN-MW0036-015.0-20210420	AE02766-08RE1	215DV010.D	04/27/21 09:01	
HMPN-MW0037-010.0-20210421	AE02766-16RE1	215DV011.D	04/27/21 09:01	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Batch: 1D28019 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1D28019-BLK1	212DW007.D	04/28/21 00:00	
LCS	1D28019-BS1	212DW003.D	04/28/21 00:00	
OWS	1D28019-MS1	212DW004.D	04/28/21 00:00	
OWS	1D28019-MSD1	212DW005.D	04/28/21 00:00	
HMPN-MW0030-025.0-20210419	AE02766-05RE2	212DW013.D	04/28/21 00:00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Batch: 1D28033 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1D28033-BLK1	215DW006.D	04/28/21 00:00	
LCS	1D28033-BS1	215DW008.D	04/28/21 00:00	
MW-53S	1D28033-MS1	215DW023.D	04/28/21 00:00	
MW-53S	1D28033-MSD1	215DW024.D	04/28/21 00:00	
HMPN-MW0030-025.0-20210419	AE02766-05RE1	215DW009.D	04/28/21 10:09	
HMPN-MW0028-047.5-20210421	AE02766-18RE1	215DW010.D	04/28/21 10:09	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D26010-BLK1	File ID:	212DU007.D
Prepared:	04/26/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/26/21 09:58	Instrument:	OVGCMS2		
Batch:	1D26010	Sequence:	AA66091	Calibration:	2103054

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D26010-BLK1	File ID:	212DU007.D
Prepared:	04/26/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/26/21 09:58	Instrument:	OVGCMS2		
Batch:	1D26010	Sequence:	AA66091	Calibration:	2103054

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	58	117	41 - 146	
4-Bromofluorobenzene	50.0	44	88	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	245461	11.48	231702	11.44	
1,4-Difluorobenzene	406978	12.03	427152	11.99	
Chlorobenzene-d5	234022	14.62	207404	14.59	
1,4-Dichlorobenzene-d4	196189	16.99	156147	16.94	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D27005-BLK1	File ID:	212DV007.D
Prepared:	04/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/27/21 10:14	Instrument:	OVGCMS2		
Batch:	1D27005	Sequence:	AA66113	Calibration:	2103054

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D27005-BLK1	File ID:	212DV007.D
Prepared:	04/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/27/21 10:14	Instrument:	OVGCMS2		
Batch:	1D27005	Sequence:	AA66113	Calibration:	2103054

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	50	100	53 - 146	
Toluene-d8	50.0	55	111	41 - 146	
4-Bromofluorobenzene	50.0	42	83	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	239079	11.47	231702	11.44	
1,4-Difluorobenzene	407756	12.02	427152	11.99	
Chlorobenzene-d5	237047	14.61	207404	14.59	
1,4-Dichlorobenzene-d4	202128	16.98	156147	16.94	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D27020-BLK1	File ID:	215DV005.D
Prepared:	04/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/27/21 09:31	Instrument:	OVGCMS5		
Batch:	1D27020	Sequence:	AA66116	Calibration:	2103152

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D27020-BLK1	File ID:	215DV005.D
Prepared:	04/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/27/21 09:31	Instrument:	OVGCMS5		
Batch:	1D27020	Sequence:	AA66116	Calibration:	2103152

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	110	53 - 146	
Toluene-d8	50.0	54	108	41 - 146	
4-Bromofluorobenzene	50.0	52	103	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1060505	9.851	1384465	9.851	
1,4-Difluorobenzene	2109466	10.444	2848520	10.444	
Chlorobenzene-d5	1261619	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1139715	15.485	1623575	15.486	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D28019-BLK1	File ID:	212DW007.D
Prepared:	04/28/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/28/21 10:11	Instrument:	OVGCMS2		
Batch:	1D28019	Sequence:	AA66133	Calibration:	2103054

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D28019-BLK1	File ID:	212DW007.D
Prepared:	04/28/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/28/21 10:11	Instrument:	OVGCMS2		
Batch:	1D28019	Sequence:	AA66133	Calibration:	2103054

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	43	86	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	42	85	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	271944	11.47	231702	11.44	
1,4-Difluorobenzene	430780	12.02	427152	11.99	
Chlorobenzene-d5	232220	14.61	207404	14.59	
1,4-Dichlorobenzene-d4	188399	16.98	156147	16.94	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D28033-BLK1	File ID:	215DW006.D
Prepared:	04/28/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/28/21 10:17	Instrument:	OVGCMS5		
Batch:	1D28033	Sequence:	AA66142	Calibration:	2103152

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	0.94	U
75-15-0	Carbon disulfide	2.5	U
75-09-2	Methylene Chloride	2.5	U
1634-04-4	Methyl-tert-Butyl Ether	0.60	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
78-93-3	2-Butanone	4.5	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
79-20-9	Methyl acetate	0.95	U
110-82-7	Cyclohexane	0.93	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
71-43-2	Benzene	0.71	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
108-10-1	4-Methyl-2-pentanone	2.5	U
591-78-6	2-Hexanone	2.5	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
108-88-3	Toluene	0.72	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090

Matrix:	Water	Laboratory ID:	1D28033-BLK1	File ID:	215DW006.D
Prepared:	04/28/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	04/28/21 10:17	Instrument:	OVGCMS5		
Batch:	1D28033	Sequence:	AA66142	Calibration:	2103152

CAS NO.	COMPOUND	CONC. (ug/L)	Q
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
100-41-4	Ethylbenzene	0.69	U
75-25-2	Bromoform	0.75	U
100-42-5	Styrene	0.61	U
98-82-8	Isopropylbenzene	0.67	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U
1330-20-7	Xylenes (Total)	1.3	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	61	122	53 - 146	
Toluene-d8	50.0	57	114	41 - 146	
4-Bromofluorobenzene	50.0	53	106	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1095490	9.851	1384465	9.851	
1,4-Difluorobenzene	2601514	10.45	2848520	10.444	
Chlorobenzene-d5	1512947	13.229	1764069	13.223	
1,4-Dichlorobenzene-d4	1228968	15.485	1623575	15.486	

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D26010	Laboratory ID:	1D26010-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	82	10 - 180
Chloromethane	20.0	16	82	33 - 154
Vinyl chloride	20.0	19	94	20 - 167
Bromomethane	20.0	9.9	50	10 - 173
Chloroethane	20.0	20	98	27 - 180
Trichlorofluoromethane	20.0	18	88	56 - 155
Freon 113	20.0	40	201 *	47 - 173
Acetone	100	95	95	10 - 180
1,1-Dichloroethene	20.0	20	98	47 - 139
Carbon disulfide	20.0	25	124	43 - 153
Methylene Chloride	20.0	20	101	43 - 142
Methyl-tert-Butyl Ether	20.0	20	100	51 - 145
trans-1,2-Dichloroethene	20.0	22	108	54 - 134
cis-1,2-Dichloroethene	20.0	22	111	56 - 128
1,1-Dichloroethane	20.0	20	98	57 - 142
2-Butanone	100	130	130	10 - 180
Chloroform	20.0	21	104	58 - 139
1,1,1-Trichloroethane	20.0	19	94	57 - 148
Methyl acetate	20.0	20	98	70 - 130
Cyclohexane	20.0	21	104	70 - 130
Carbon Tetrachloride	20.0	19	95	54 - 156
1,2-Dichloroethane	20.0	20	98	50 - 156
Benzene	20.0	26	129	56 - 136
Trichloroethene	20.0	22	112	62 - 135
1,2-Dichloropropane	20.0	21	107	61 - 133
Bromodichloromethane	20.0	22	112	58 - 135
4-Methyl-2-pentanone	100	110	113	19 - 180
2-Hexanone	100	100	101	12 - 180
cis-1,3-Dichloropropene	20.0	22	111	64 - 128
Toluene	20.0	21	104	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D26010	Laboratory ID:	1D26010-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	20	101	65 - 149
1,1,2-Trichloroethane	20.0	20	99	57 - 141
Tetrachloroethene	20.0	24	118	60 - 147
Dibromochloromethane	20.0	18	90	50 - 140
1,2-Dibromoethane	20.0	18	92	57 - 140
Chlorobenzene	20.0	20	98	51 - 139
Ethylbenzene	20.0	19	96	63 - 133
m,p-Xylenes	40.0	38	96	64 - 133
o-Xylene	20.0	20	98	61 - 129
Bromoform	20.0	23	115	46 - 148
Styrene	20.0	20	98	59 - 136
Isopropylbenzene	20.0	19	97	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	103	60 - 139
1,2,4-Trichlorobenzene	20.0	21	106	52 - 159
1,3-Dichlorobenzene	20.0	20	98	66 - 129
1,4-Dichlorobenzene	20.0	19	94	65 - 133
1,2-Dichlorobenzene	20.0	19	97	63 - 131
1,2-Dibromo-3-chloropropane	20.0	16	79	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D27005	Laboratory ID:	1D27005-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	81	10 - 180
Chloromethane	20.0	16	82	33 - 154
Vinyl chloride	20.0	19	96	20 - 167
Bromomethane	20.0	9.0	45	10 - 173
Chloroethane	20.0	19	97	27 - 180
Trichlorofluoromethane	20.0	17	86	56 - 155
Freon 113	20.0	23	115	47 - 173
Acetone	100	110	110	10 - 180
1,1-Dichloroethene	20.0	24	122	47 - 139
Carbon disulfide	20.0	33	164 *	43 - 153
Methylene Chloride	20.0	24	118	43 - 142
Methyl-tert-Butyl Ether	20.0	23	113	51 - 145
trans-1,2-Dichloroethene	20.0	25	127	54 - 134
cis-1,2-Dichloroethene	20.0	25	124	56 - 128
1,1-Dichloroethane	20.0	23	116	57 - 142
2-Butanone	100	170	168	10 - 180
Chloroform	20.0	24	118	58 - 139
1,1,1-Trichloroethane	20.0	21	107	57 - 148
Methyl acetate	20.0	23	113	70 - 130
Cyclohexane	20.0	24	120	70 - 130
Carbon Tetrachloride	20.0	21	106	54 - 156
1,2-Dichloroethane	20.0	22	111	50 - 156
Benzene	20.0	28	142 *	56 - 136
Trichloroethene	20.0	25	124	62 - 135
1,2-Dichloropropane	20.0	23	117	61 - 133
Bromodichloromethane	20.0	25	124	58 - 135
4-Methyl-2-pentanone	100	120	123	19 - 180
2-Hexanone	100	110	112	12 - 180
cis-1,3-Dichloropropene	20.0	24	122	64 - 128
Toluene	20.0	22	109	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D27005	Laboratory ID:	1D27005-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	21	107	65 - 149
1,1,2-Trichloroethane	20.0	20	101	57 - 141
Tetrachloroethene	20.0	24	120	60 - 147
Dibromochloromethane	20.0	18	92	50 - 140
1,2-Dibromoethane	20.0	19	96	57 - 140
Chlorobenzene	20.0	21	103	51 - 139
Ethylbenzene	20.0	20	101	63 - 133
m,p-Xylenes	40.0	40	100	64 - 133
o-Xylene	20.0	21	103	61 - 129
Bromoform	20.0	23	116	46 - 148
Styrene	20.0	20	102	59 - 136
Isopropylbenzene	20.0	20	101	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	105	60 - 139
1,2,4-Trichlorobenzene	20.0	22	108	52 - 159
1,3-Dichlorobenzene	20.0	20	101	66 - 129
1,4-Dichlorobenzene	20.0	20	98	65 - 133
1,2-Dichlorobenzene	20.0	20	101	63 - 131
1,2-Dibromo-3-chloropropane	20.0	16	79	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D27020	Laboratory ID:	1D27020-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	18	92	10 - 180
Chloromethane	20.0	30	148	33 - 154
Vinyl chloride	20.0	23	117	20 - 167
Bromomethane	20.0	19	97	10 - 173
Chloroethane	20.0	23	116	27 - 180
Trichlorofluoromethane	20.0	22	109	56 - 155
Freon 113	20.0	17	87	47 - 173
Acetone	100	120	120	10 - 180
1,1-Dichloroethene	20.0	21	104	47 - 139
Carbon disulfide	20.0	22	112	43 - 153
Methylene Chloride	20.0	25	126	43 - 142
Methyl-tert-Butyl Ether	20.0	26	128	51 - 145
trans-1,2-Dichloroethene	20.0	25	123	54 - 134
cis-1,2-Dichloroethene	20.0	23	116	56 - 128
1,1-Dichloroethane	20.0	26	129	57 - 142
2-Butanone	100	89	89	10 - 180
Chloroform	20.0	21	103	58 - 139
1,1,1-Trichloroethane	20.0	21	105	57 - 148
Methyl acetate	20.0	33	163 *	70 - 130
Cyclohexane	20.0	27	133 *	70 - 130
Carbon Tetrachloride	20.0	24	120	54 - 156
1,2-Dichloroethane	20.0	20	102	50 - 156
Benzene	20.0	21	106	56 - 136
Trichloroethene	20.0	20	101	62 - 135
1,2-Dichloropropane	20.0	25	124	61 - 133
Bromodichloromethane	20.0	21	107	58 - 135
4-Methyl-2-pentanone	100	110	106	19 - 180
2-Hexanone	100	120	117	12 - 180
cis-1,3-Dichloropropene	20.0	21	104	64 - 128
Toluene	20.0	21	104	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D27020	Laboratory ID:	1D27020-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	21	107	65 - 149
1,1,2-Trichloroethane	20.0	21	107	57 - 141
Tetrachloroethene	20.0	20	99	60 - 147
Dibromochloromethane	20.0	19	95	50 - 140
1,2-Dibromoethane	20.0	21	103	57 - 140
Chlorobenzene	20.0	21	105	51 - 139
Ethylbenzene	20.0	20	101	63 - 133
m,p-Xylenes	40.0	40	100	64 - 133
o-Xylene	20.0	21	104	61 - 129
Bromoform	20.0	18	90	46 - 148
Styrene	20.0	21	105	59 - 136
Isopropylbenzene	20.0	22	108	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	101	60 - 139
1,2,4-Trichlorobenzene	20.0	25	125	52 - 159
1,3-Dichlorobenzene	20.0	19	96	66 - 129
1,4-Dichlorobenzene	20.0	21	105	65 - 133
1,2-Dichlorobenzene	20.0	21	106	63 - 131
1,2-Dibromo-3-chloropropane	20.0	21	104	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D28019	Laboratory ID:	1D28019-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	78	10 - 180
Chloromethane	20.0	16	79	33 - 154
Vinyl chloride	20.0	18	92	20 - 167
Bromomethane	20.0	7.6	38	10 - 173
Chloroethane	20.0	18	92	27 - 180
Trichlorofluoromethane	20.0	17	83	56 - 155
Freon 113	20.0	20	101	47 - 173
Acetone	100	96	96	10 - 180
1,1-Dichloroethene	20.0	21	106	47 - 139
Carbon disulfide	20.0	28	142	43 - 153
Methylene Chloride	20.0	23	117	43 - 142
Methyl-tert-Butyl Ether	20.0	20	98	51 - 145
trans-1,2-Dichloroethene	20.0	22	110	54 - 134
cis-1,2-Dichloroethene	20.0	21	106	56 - 128
1,1-Dichloroethane	20.0	20	101	57 - 142
2-Butanone	100	150	147	10 - 180
Chloroform	20.0	21	103	58 - 139
1,1,1-Trichloroethane	20.0	19	94	57 - 148
Methyl acetate	20.0	19	96	70 - 130
Cyclohexane	20.0	21	107	70 - 130
Carbon Tetrachloride	20.0	20	100	54 - 156
1,2-Dichloroethane	20.0	20	102	50 - 156
Benzene	20.0	26	132	56 - 136
Trichloroethene	20.0	23	115	62 - 135
1,2-Dichloropropane	20.0	22	110	61 - 133
Bromodichloromethane	20.0	23	115	58 - 135
4-Methyl-2-pentanone	100	110	111	19 - 180
2-Hexanone	100	100	104	12 - 180
cis-1,3-Dichloropropene	20.0	23	114	64 - 128
Toluene	20.0	22	111	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D28019	Laboratory ID:	1D28019-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	22	108	65 - 149
1,1,2-Trichloroethane	20.0	21	104	57 - 141
Tetrachloroethene	20.0	25	125	60 - 147
Dibromochloromethane	20.0	19	94	50 - 140
1,2-Dibromoethane	20.0	19	97	57 - 140
Chlorobenzene	20.0	21	104	51 - 139
Ethylbenzene	20.0	20	102	63 - 133
m,p-Xylenes	40.0	40	101	64 - 133
o-Xylene	20.0	21	105	61 - 129
Bromoform	20.0	24	119	46 - 148
Styrene	20.0	20	102	59 - 136
Isopropylbenzene	20.0	20	102	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	107	60 - 139
1,2,4-Trichlorobenzene	20.0	23	113	52 - 159
1,3-Dichlorobenzene	20.0	21	106	66 - 129
1,4-Dichlorobenzene	20.0	20	102	65 - 133
1,2-Dichlorobenzene	20.0	21	105	63 - 131
1,2-Dibromo-3-chloropropane	20.0	17	86	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D28033	Laboratory ID:	1D28033-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	19	94	10 - 180
Chloromethane	20.0	29	143	33 - 154
Vinyl chloride	20.0	23	116	20 - 167
Bromomethane	20.0	20	100	10 - 173
Chloroethane	20.0	25	123	27 - 180
Trichlorofluoromethane	20.0	21	106	56 - 155
Freon 113	20.0	20	101	47 - 173
Acetone	100	140	143	10 - 180
1,1-Dichloroethene	20.0	25	123	47 - 139
Carbon disulfide	20.0	26	128	43 - 153
Methylene Chloride	20.0	27	136	43 - 142
Methyl-tert-Butyl Ether	20.0	28	141	51 - 145
trans-1,2-Dichloroethene	20.0	27	137 *	54 - 134
cis-1,2-Dichloroethene	20.0	24	120	56 - 128
1,1-Dichloroethane	20.0	29	146 *	57 - 142
2-Butanone	100	140	135	10 - 180
Chloroform	20.0	21	107	58 - 139
1,1,1-Trichloroethane	20.0	22	112	57 - 148
Methyl acetate	20.0	32	162 *	70 - 130
Cyclohexane	20.0	31	153 *	70 - 130
Carbon Tetrachloride	20.0	23	116	54 - 156
1,2-Dichloroethane	20.0	19	93	50 - 156
Benzene	20.0	22	110	56 - 136
Trichloroethene	20.0	20	99	62 - 135
1,2-Dichloropropane	20.0	25	126	61 - 133
Bromodichloromethane	20.0	20	100	58 - 135
4-Methyl-2-pentanone	100	90	90	19 - 180
2-Hexanone	100	100	105	12 - 180
cis-1,3-Dichloropropene	20.0	19	97	64 - 128
Toluene	20.0	20	101	64 - 131

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D28033	Laboratory ID:	1D28033-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
trans-1,3-Dichloropropene	20.0	19	94	65 - 149
1,1,2-Trichloroethane	20.0	19	97	57 - 141
Tetrachloroethene	20.0	17	87	60 - 147
Dibromochloromethane	20.0	18	91	50 - 140
1,2-Dibromoethane	20.0	18	89	57 - 140
Chlorobenzene	20.0	21	105	51 - 139
Ethylbenzene	20.0	20	101	63 - 133
m,p-Xylenes	40.0	40	100	64 - 133
o-Xylene	20.0	21	106	61 - 129
Bromoform	20.0	15	73	46 - 148
Styrene	20.0	21	106	59 - 136
Isopropylbenzene	20.0	21	104	60 - 132
1,1,2,2-Tetrachloroethane	20.0	18	91	60 - 139
1,2,4-Trichlorobenzene	20.0	23	117	52 - 159
1,3-Dichlorobenzene	20.0	18	92	66 - 129
1,4-Dichlorobenzene	20.0	20	99	65 - 133
1,2-Dichlorobenzene	20.0	19	97	63 - 131
1,2-Dibromo-3-chloropropane	20.0	18	91	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0040-042.5-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D26010
Laboratory ID: 1D26010-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: HMPN-MW0040-042.5-20210419

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	16	82	10 - 180
Chloromethane	20.0	ND	18	88	33 - 154
Vinyl chloride	20.0	1.5	21	99	20 - 167
Bromomethane	20.0	ND	12	58	10 - 173
Chloroethane	20.0	ND	20	99	27 - 180
Trichlorofluoromethane	20.0	ND	18	90	56 - 155
Freon 113	20.0	ND	41	203 *	47 - 173
Acetone	100	ND	99	99	10 - 180
1,1-Dichloroethene	20.0	ND	21	106	47 - 139
Carbon disulfide	20.0	ND	24	119	43 - 153
Methylene Chloride	20.0	ND	21	105	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	21	106	51 - 145
trans-1,2-Dichloroethene	20.0	ND	23	116	54 - 134
cis-1,2-Dichloroethene	20.0	17	40	113	56 - 128
1,1-Dichloroethane	20.0	ND	21	107	57 - 142
2-Butanone	100	ND	130	127	10 - 180
Chloroform	20.0	ND	21	107	58 - 139
1,1,1-Trichloroethane	20.0	ND	20	101	57 - 148
Methyl acetate	20.0	ND	21	105	70 - 130
Cyclohexane	20.0	ND	22	108	70 - 130
Carbon Tetrachloride	20.0	ND	20	102	54 - 156
1,2-Dichloroethane	20.0	ND	20	102	50 - 156
Benzene	20.0	ND	28	138 *	56 - 136
Trichloroethene	20.0	2.2	26	118	62 - 135
1,2-Dichloropropane	20.0	ND	23	113	61 - 133
Bromodichloromethane	20.0	ND	24	118	58 - 135
4-Methyl-2-pentanone	100	ND	120	122	19 - 180
2-Hexanone	100	ND	110	113	12 - 180
cis-1,3-Dichloropropene	20.0	ND	23	116	64 - 128
Toluene	20.0	ND	23	113	64 - 131
trans-1,3-Dichloropropene	20.0	ND	21	105	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0040-042.5-20210419

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D26010	Laboratory ID:	1D26010-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: HMPN-MW0040-042.5-20210419

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	20	102	57 - 141
Tetrachloroethene	20.0	ND	24	122	60 - 147
Dibromochloromethane	20.0	ND	18	92	50 - 140
1,2-Dibromoethane	20.0	ND	19	96	57 - 140
Chlorobenzene	20.0	ND	20	102	51 - 139
Ethylbenzene	20.0	ND	21	103	63 - 133
m,p-Xylenes	40.0	ND	40	101	64 - 133
o-Xylene	20.0	ND	21	104	61 - 129
Bromoform	20.0	ND	23	117	46 - 148
Styrene	20.0	ND	21	103	59 - 136
Isopropylbenzene	20.0	ND	20	102	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	21	106	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	21	103	52 - 159
1,3-Dichlorobenzene	20.0	ND	20	100	66 - 129
1,4-Dichlorobenzene	20.0	ND	20	98	65 - 133
1,2-Dichlorobenzene	20.0	ND	20	100	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	16	82	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0040-042.5-20210419

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D26010
Laboratory ID: 1D26010-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: HMPN-MW0040-042.5-20210419

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	16	78	4	26	10 - 180
Chloromethane	20.0	17	84	4	31	33 - 154
Vinyl chloride	20.0	20	95	4	24	20 - 167
Bromomethane	20.0	12	60	3	29	10 - 173
Chloroethane	20.0	19	97	2	22	27 - 180
Trichlorofluoromethane	20.0	17	86	5	22	56 - 155
Freon 113	20.0	38	192 *	5	30	47 - 173
Acetone	100	95	95	4	19	10 - 180
1,1-Dichloroethene	20.0	20	100	6	16	47 - 139
Carbon disulfide	20.0	22	112	6	26	43 - 153
Methylene Chloride	20.0	20	102	3	23	43 - 142
Methyl-tert-Butyl Ether	20.0	21	104	2	22	51 - 145
trans-1,2-Dichloroethene	20.0	22	111	4	20	54 - 134
cis-1,2-Dichloroethene	20.0	39	108	3	17	56 - 128
1,1-Dichloroethane	20.0	21	103	4	24	57 - 142
2-Butanone	100	120	121	5	29	10 - 180
Chloroform	20.0	21	104	3	17	58 - 139
1,1,1-Trichloroethane	20.0	19	97	4	25	57 - 148
Methyl acetate	20.0	19	97	8	20	70 - 130
Cyclohexane	20.0	21	104	5	20	70 - 130
Carbon Tetrachloride	20.0	20	99	3	27	54 - 156
1,2-Dichloroethane	20.0	20	100	2	18	50 - 156
Benzene	20.0	27	134	3	14	56 - 136
Trichloroethene	20.0	25	114	3	20	62 - 135
1,2-Dichloropropane	20.0	22	109	4	26	61 - 133
Bromodichloromethane	20.0	23	113	5	19	58 - 135
4-Methyl-2-pentanone	100	120	120	2	24	19 - 180
2-Hexanone	100	110	109	4	28	12 - 180
cis-1,3-Dichloropropene	20.0	22	112	3	20	64 - 128
Toluene	20.0	21	106	6	16	64 - 131
trans-1,3-Dichloropropene	20.0	20	101	4	17	65 - 149
1,1,2-Trichloroethane	20.0	20	100	2	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0040-042.5-20210419

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Matrix:	Water		
Batch:	1D26010	Laboratory ID:	1D26010-MSD1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: HMPN-MW0040-042.5-20210419

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	23	116	5	21	60 - 147
Dibromochloromethane	20.0	18	91	1	18	50 - 140
1,2-Dibromoethane	20.0	18	91	6	16	57 - 140
Chlorobenzene	20.0	20	98	4	13	51 - 139
Ethylbenzene	20.0	19	97	5	18	63 - 133
m,p-Xylenes	40.0	38	96	5	18	64 - 133
o-Xylene	20.0	20	99	5	16	61 - 129
Bromoform	20.0	22	112	4	18	46 - 148
Styrene	20.0	19	97	6	32	59 - 136
Isopropylbenzene	20.0	20	98	4	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	20	102	5	17	60 - 139
1,2,4-Trichlorobenzene	20.0	20	98	5	24	52 - 159
1,3-Dichlorobenzene	20.0	19	96	4	23	66 - 129
1,4-Dichlorobenzene	20.0	19	95	3	23	65 - 133
1,2-Dichlorobenzene	20.0	19	96	5	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	16	78	6	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CWWTF-INF

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27005
Laboratory ID: 1D27005-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CWWTF-INF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	17	86	10 - 180
Chloromethane	20.0	ND	18	92	33 - 154
Vinyl chloride	20.0	ND	21	104	20 - 167
Bromomethane	20.0	ND	9.1	45	10 - 173
Chloroethane	20.0	ND	20	98	27 - 180
Trichlorofluoromethane	20.0	ND	18	92	56 - 155
Freon 113	20.0	ND	25	124	47 - 173
Acetone	100	55	160	107	10 - 180
1,1-Dichloroethene	20.0	ND	26	132	47 - 139
Carbon disulfide	20.0	ND	32	162 *	43 - 153
Methylene Chloride	20.0	ND	24	122	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	22	108	51 - 145
trans-1,2-Dichloroethene	20.0	ND	27	136 *	54 - 134
cis-1,2-Dichloroethene	20.0	ND	26	130 *	56 - 128
1,1-Dichloroethane	20.0	ND	25	124	57 - 142
2-Butanone	100	ND	170	173	10 - 180
Chloroform	20.0	ND	25	125	58 - 139
1,1,1-Trichloroethane	20.0	ND	23	115	57 - 148
Methyl acetate	20.0	ND	24	119	70 - 130
Cyclohexane	20.0	ND	26	129	70 - 130
Carbon Tetrachloride	20.0	ND	23	117	54 - 156
1,2-Dichloroethane	20.0	ND	23	114	50 - 156
Benzene	20.0	ND	30	152 *	56 - 136
Trichloroethene	20.0	ND	27	135	62 - 135
1,2-Dichloropropane	20.0	ND	25	124	61 - 133
Bromodichloromethane	20.0	0.98	27	132	58 - 135
4-Methyl-2-pentanone	100	ND	130	133	19 - 180
2-Hexanone	100	ND	120	122	12 - 180
cis-1,3-Dichloropropene	20.0	ND	26	128	64 - 128
Toluene	20.0	ND	24	120	64 - 131
trans-1,3-Dichloropropene	20.0	ND	21	107	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CWWTF-INF

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27005
Laboratory ID: 1D27005-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CWWTF-INF

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	22	108	57 - 141
Tetrachloroethene	20.0	ND	26	130	60 - 147
Dibromochloromethane	20.0	1.4	21	97	50 - 140
1,2-Dibromoethane	20.0	ND	20	98	57 - 140
Chlorobenzene	20.0	ND	22	108	51 - 139
Ethylbenzene	20.0	ND	22	109	63 - 133
m,p-Xylenes	40.0	ND	42	106	64 - 133
o-Xylene	20.0	ND	22	109	61 - 129
Bromoform	20.0	ND	25	125	46 - 148
Styrene	20.0	ND	22	108	59 - 136
Isopropylbenzene	20.0	ND	22	110	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	22	110	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	22	108	52 - 159
1,3-Dichlorobenzene	20.0	ND	21	105	66 - 129
1,4-Dichlorobenzene	20.0	ND	20	100	65 - 133
1,2-Dichlorobenzene	20.0	ND	21	103	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	16	81	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CWWTF-INF

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27005
Laboratory ID: 1D27005-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CWWTF-INF

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	17	85	1	26	10 - 180
Chloromethane	20.0	19	93	0.9	31	33 - 154
Vinyl chloride	20.0	20	102	1	24	20 - 167
Bromomethane	20.0	8.9	45	2	29	10 - 173
Chloroethane	20.0	28	140	35 *	22	27 - 180
Trichlorofluoromethane	20.0	18	92	0.5	22	56 - 155
Freon 113	20.0	24	122	2	30	47 - 173
Acetone	100	170	113	3	19	10 - 180
1,1-Dichloroethene	20.0	26	131	0.9	16	47 - 139
Carbon disulfide	20.0	32	160 *	2	26	43 - 153
Methylene Chloride	20.0	25	124	1	23	43 - 142
Methyl-tert-Butyl Ether	20.0	23	114	5	22	51 - 145
trans-1,2-Dichloroethene	20.0	27	136 *	0.04	20	54 - 134
cis-1,2-Dichloroethene	20.0	26	128	1	17	56 - 128
1,1-Dichloroethane	20.0	25	126	2	24	57 - 142
2-Butanone	100	180	176	2	29	10 - 180
Chloroform	20.0	26	129	3	17	58 - 139
1,1,1-Trichloroethane	20.0	23	117	2	25	57 - 148
Methyl acetate	20.0	25	127	6	20	70 - 130
Cyclohexane	20.0	26	129	0.08	20	70 - 130
Carbon Tetrachloride	20.0	23	116	0.3	27	54 - 156
1,2-Dichloroethane	20.0	23	115	1	18	50 - 156
Benzene	20.0	31	153 *	0.6	14	56 - 136
Trichloroethene	20.0	27	136 *	0.9	20	62 - 135
1,2-Dichloropropane	20.0	25	124	0.2	26	61 - 133
Bromodichloromethane	20.0	27	132	0.5	19	58 - 135
4-Methyl-2-pentanone	100	140	138	3	24	19 - 180
2-Hexanone	100	120	124	2	28	12 - 180
cis-1,3-Dichloropropene	20.0	26	128	0.6	20	64 - 128
Toluene	20.0	24	120	0.3	16	64 - 131
trans-1,3-Dichloropropene	20.0	22	112	5	17	65 - 149
1,1,2-Trichloroethane	20.0	21	107	0.7	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CWWTF-INF

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27005
Laboratory ID: 1D27005-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CWWTF-INF

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	26	130	0.4	21	60 - 147
Dibromochloromethane	20.0	21	97	0.1	18	50 - 140
1,2-Dibromoethane	20.0	20	100	2	16	57 - 140
Chlorobenzene	20.0	22	108	0.3	13	51 - 139
Ethylbenzene	20.0	21	107	1	18	63 - 133
m,p-Xylenes	40.0	43	107	1	18	64 - 133
o-Xylene	20.0	22	109	0.09	16	61 - 129
Bromoform	20.0	25	127	2	18	46 - 148
Styrene	20.0	22	109	0.1	32	59 - 136
Isopropylbenzene	20.0	21	107	2	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	23	113	3	17	60 - 139
1,2,4-Trichlorobenzene	20.0	21	106	2	24	52 - 159
1,3-Dichlorobenzene	20.0	21	103	2	23	66 - 129
1,4-Dichlorobenzene	20.0	20	102	2	23	65 - 133
1,2-Dichlorobenzene	20.0	21	105	2	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	17	84	4	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASEFFLUENT-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27020
Laboratory ID: 1D27020-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-ASEFFLUENT-20210422

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	21	104	10 - 180
Chloromethane	20.0	ND	33	163 *	33 - 154
Vinyl chloride	20.0	ND	26	130	20 - 167
Bromomethane	20.0	ND	22	109	10 - 173
Chloroethane	20.0	ND	26	128	27 - 180
Trichlorofluoromethane	20.0	ND	25	126	56 - 155
Freon 113	20.0	ND	21	106	47 - 173
Acetone	100	ND	110	111	10 - 180
1,1-Dichloroethene	20.0	ND	27	135	47 - 139
Carbon disulfide	20.0	ND	27	137	43 - 153
Methylene Chloride	20.0	ND	28	139	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	25	126	51 - 145
trans-1,2-Dichloroethene	20.0	ND	25	125	54 - 134
cis-1,2-Dichloroethene	20.0	ND	28	139 *	56 - 128
1,1-Dichloroethane	20.0	ND	31	156 *	57 - 142
2-Butanone	100	ND	110	113	10 - 180
Chloroform	20.0	ND	24	120	58 - 139
1,1,1-Trichloroethane	20.0	ND	22	112	57 - 148
Methyl acetate	20.0	ND	28	142 *	70 - 130
Cyclohexane	20.0	ND	33	164 *	70 - 130
Carbon Tetrachloride	20.0	ND	24	119	54 - 156
1,2-Dichloroethane	20.0	ND	21	104	50 - 156
Benzene	20.0	ND	20	102	56 - 136
Trichloroethene	20.0	ND	22	108	62 - 135
1,2-Dichloropropane	20.0	ND	26	131	61 - 133
Bromodichloromethane	20.0	ND	22	109	58 - 135
4-Methyl-2-pentanone	100	ND	76	76	19 - 180
2-Hexanone	100	ND	99	99	12 - 180
cis-1,3-Dichloropropene	20.0	ND	20	100	64 - 128
Toluene	20.0	ND	22	108	64 - 131
trans-1,3-Dichloropropene	20.0	ND	18	90	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASEFFLUENT-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27020
Laboratory ID: 1D27020-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-ASEFFLUENT-20210422

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	17	87	57 - 141
Tetrachloroethene	20.0	ND	16	82	60 - 147
Dibromochloromethane	20.0	ND	17	86	50 - 140
1,2-Dibromoethane	20.0	ND	20	98	57 - 140
Chlorobenzene	20.0	ND	23	115	51 - 139
Ethylbenzene	20.0	ND	23	115	63 - 133
m,p-Xylenes	40.0	ND	44	110	64 - 133
o-Xylene	20.0	ND	22	110	61 - 129
Bromoform	20.0	ND	17	83	46 - 148
Styrene	20.0	ND	22	112	59 - 136
Isopropylbenzene	20.0	ND	23	116	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	18	92	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	22	108	52 - 159
1,3-Dichlorobenzene	20.0	ND	21	104	66 - 129
1,4-Dichlorobenzene	20.0	ND	21	105	65 - 133
1,2-Dichlorobenzene	20.0	ND	20	100	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	13	66	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASEFFLUENT-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27020
Laboratory ID: 1D27020-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-ASEFFLUENT-20210422

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	19	97	6	26	10 - 180
Chloromethane	20.0	30	150	9	31	33 - 154
Vinyl chloride	20.0	24	118	10	24	20 - 167
Bromomethane	20.0	23	114	4	29	10 - 173
Chloroethane	20.0	24	118	8	22	27 - 180
Trichlorofluoromethane	20.0	23	116	8	22	56 - 155
Freon 113	20.0	20	98	8	30	47 - 173
Acetone	100	110	114	3	19	10 - 180
1,1-Dichloroethene	20.0	26	130	4	16	47 - 139
Carbon disulfide	20.0	25	127	7	26	43 - 153
Methylene Chloride	20.0	26	132	5	23	43 - 142
Methyl-tert-Butyl Ether	20.0	27	133	6	22	51 - 145
trans-1,2-Dichloroethene	20.0	26	130	3	20	54 - 134
cis-1,2-Dichloroethene	20.0	23	113	20 *	17	56 - 128
1,1-Dichloroethane	20.0	29	144 *	8	24	57 - 142
2-Butanone	100	110	114	0.6	29	10 - 180
Chloroform	20.0	22	112	7	17	58 - 139
1,1,1-Trichloroethane	20.0	24	120	7	25	57 - 148
Methyl acetate	20.0	30	151 *	6	20	70 - 130
Cyclohexane	20.0	29	144 *	13	20	70 - 130
Carbon Tetrachloride	20.0	26	131	10	27	54 - 156
1,2-Dichloroethane	20.0	20	99	5	18	50 - 156
Benzene	20.0	22	112	9	14	56 - 136
Trichloroethene	20.0	21	106	1	20	62 - 135
1,2-Dichloropropane	20.0	23	117	11	26	61 - 133
Bromodichloromethane	20.0	20	101	8	19	58 - 135
4-Methyl-2-pentanone	100	99	99	26 *	24	19 - 180
2-Hexanone	100	120	117	17	28	12 - 180
cis-1,3-Dichloropropene	20.0	19	96	4	20	64 - 128
Toluene	20.0	26	129	17 *	16	64 - 131
trans-1,3-Dichloropropene	20.0	23	113	23 *	17	65 - 149
1,1,2-Trichloroethane	20.0	22	111	24 *	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASEFFLUENT-20210422

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D27020
Laboratory ID: 1D27020-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-ASEFFLUENT-20210422

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	22	108	28 *	21	60 - 147
Dibromochloromethane	20.0	22	108	22 *	18	50 - 140
1,2-Dibromoethane	20.0	21	103	5	16	57 - 140
Chlorobenzene	20.0	22	110	4	13	51 - 139
Ethylbenzene	20.0	22	112	3	18	63 - 133
m,p-Xylenes	40.0	43	108	1	18	64 - 133
o-Xylene	20.0	24	120	9	16	61 - 129
Bromoform	20.0	19	96	14	18	46 - 148
Styrene	20.0	25	127	12	32	59 - 136
Isopropylbenzene	20.0	26	132	12	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	21	107	16	17	60 - 139
1,2,4-Trichlorobenzene	20.0	21	105	2	24	52 - 159
1,3-Dichlorobenzene	20.0	20	98	6	23	66 - 129
1,4-Dichlorobenzene	20.0	20	102	3	23	65 - 133
1,2-Dichlorobenzene	20.0	24	118	16	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	18	88	29 *	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

OWS

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28019
Laboratory ID: 1D28019-MS1
Preparation: EPA 5030B_MS
Initial/Final: 0.05 mL / 5 mL
Source Sample Name: OWS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	2000	ND	1500	77	10 - 180
Chloromethane	2000	ND	1700	84	33 - 154
Vinyl chloride	2000	ND	1900	97	20 - 167
Bromomethane	2000	ND	990	49	10 - 173
Chloroethane	2000	ND	2000	100	27 - 180
Trichlorofluoromethane	2000	ND	1700	87	56 - 155
Freon 113	2000	ND	2000	100	47 - 173
Acetone	10000	ND	9000	90	10 - 180
1,1-Dichloroethene	2000	ND	2200	110	47 - 139
Carbon disulfide	2000	ND	2600	132	43 - 153
Methylene Chloride	2000	ND	2100	106	43 - 142
Methyl-tert-Butyl Ether	2000	ND	1900	96	51 - 145
trans-1,2-Dichloroethene	2000	ND	2200	111	54 - 134
cis-1,2-Dichloroethene	2000	ND	2200	108	56 - 128
1,1-Dichloroethane	2000	ND	2100	103	57 - 142
2-Butanone	10000	ND	14000	138	10 - 180
Chloroform	2000	ND	2100	105	58 - 139
1,1,1-Trichloroethane	2000	ND	2000	98	57 - 148
Methyl acetate	2000	ND	2000	98	70 - 130
Cyclohexane	2000	ND	2100	106	70 - 130
Carbon Tetrachloride	2000	ND	2100	104	54 - 156
1,2-Dichloroethane	2000	ND	2000	101	50 - 156
Benzene	2000	ND	2700	136	56 - 136
Trichloroethene	2000	ND	2400	118	62 - 135
1,2-Dichloropropane	2000	ND	2200	110	61 - 133
Bromodichloromethane	2000	ND	2400	118	58 - 135
4-Methyl-2-pentanone	10000	ND	11000	109	19 - 180
2-Hexanone	10000	ND	10000	100	12 - 180
cis-1,3-Dichloropropene	2000	ND	2300	115	64 - 128
Toluene	2000	ND	2400	119	64 - 131
trans-1,3-Dichloropropene	2000	ND	2200	109	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

OWS

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28019
Laboratory ID: 1D28019-MS1
Preparation: EPA 5030B_MS
Initial/Final: 0.05 mL / 5 mL
Source Sample Name: OWS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	2000	ND	2100	104	57 - 141
Tetrachloroethene	2000	ND	2500	127	60 - 147
Dibromochloromethane	2000	ND	1900	95	50 - 140
1,2-Dibromoethane	2000	ND	1900	94	57 - 140
Chlorobenzene	2000	ND	2100	105	51 - 139
Ethylbenzene	2000	ND	2100	104	63 - 133
m,p-Xylenes	4000	ND	4100	102	64 - 133
o-Xylene	2000	ND	2100	105	61 - 129
Bromoform	2000	ND	2300	113	46 - 148
Styrene	2000	ND	2100	104	59 - 136
Isopropylbenzene	2000	ND	2100	105	60 - 132
1,1,2,2-Tetrachloroethane	2000	ND	2000	102	60 - 139
1,2,4-Trichlorobenzene	2000	ND	2100	105	52 - 159
1,3-Dichlorobenzene	2000	ND	2100	106	66 - 129
1,4-Dichlorobenzene	2000	ND	2000	100	65 - 133
1,2-Dichlorobenzene	2000	ND	2100	104	63 - 131
1,2-Dibromo-3-chloropropane	2000	ND	1500	76	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

OWS

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28019
Laboratory ID: 1D28019-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 0.05 mL / 5 mL
Source Sample Name: OWS

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	2000	1500	73	6	26	10 - 180
Chloromethane	2000	1600	81	4	31	33 - 154
Vinyl chloride	2000	1900	93	4	24	20 - 167
Bromomethane	2000	1100	55	10	29	10 - 173
Chloroethane	2000	1900	96	4	22	27 - 180
Trichlorofluoromethane	2000	1700	83	6	22	56 - 155
Freon 113	2000	1900	93	7	30	47 - 173
Acetone	10000	8600	86	5	19	10 - 180
1,1-Dichloroethene	2000	2100	105	5	16	47 - 139
Carbon disulfide	2000	2500	123	6	26	43 - 153
Methylene Chloride	2000	2000	101	5	23	43 - 142
Methyl-tert-Butyl Ether	2000	1900	94	2	22	51 - 145
trans-1,2-Dichloroethene	2000	2100	107	4	20	54 - 134
cis-1,2-Dichloroethene	2000	2100	104	4	17	56 - 128
1,1-Dichloroethane	2000	2000	100	3	24	57 - 142
2-Butanone	10000	14000	137	0.5	29	10 - 180
Chloroform	2000	2000	101	4	17	58 - 139
1,1,1-Trichloroethane	2000	1900	93	5	25	57 - 148
Methyl acetate	2000	1900	95	2	20	70 - 130
Cyclohexane	2000	2000	100	5	20	70 - 130
Carbon Tetrachloride	2000	2000	98	6	27	54 - 156
1,2-Dichloroethane	2000	2000	98	3	18	50 - 156
Benzene	2000	2600	130	5	14	56 - 136
Trichloroethene	2000	2300	115	3	20	62 - 135
1,2-Dichloropropane	2000	2100	107	2	26	61 - 133
Bromodichloromethane	2000	2300	113	5	19	58 - 135
4-Methyl-2-pentanone	10000	11000	108	0.9	24	19 - 180
2-Hexanone	10000	9700	97	3	28	12 - 180
cis-1,3-Dichloropropene	2000	2200	110	4	20	64 - 128
Toluene	2000	2300	114	4	16	64 - 131
trans-1,3-Dichloropropene	2000	2100	105	4	17	65 - 149
1,1,2-Trichloroethane	2000	2000	98	6	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

OWS

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28019
Laboratory ID: 1D28019-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 0.05 mL / 5 mL
Source Sample Name: OWS

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	2000	2400	121	5	21	60 - 147
Dibromochloromethane	2000	1800	92	3	18	50 - 140
1,2-Dibromoethane	2000	1800	91	4	16	57 - 140
Chlorobenzene	2000	2000	102	3	13	51 - 139
Ethylbenzene	2000	2000	101	3	18	63 - 133
m,p-Xylenes	4000	4000	99	3	18	64 - 133
o-Xylene	2000	2000	101	4	16	61 - 129
Bromoform	2000	2200	112	0.8	18	46 - 148
Styrene	2000	2000	101	2	32	59 - 136
Isopropylbenzene	2000	2000	102	3	23	60 - 132
1,1,2,2-Tetrachloroethane	2000	2000	101	2	17	60 - 139
1,2,4-Trichlorobenzene	2000	2000	102	3	24	52 - 159
1,3-Dichlorobenzene	2000	2000	102	4	23	66 - 129
1,4-Dichlorobenzene	2000	2000	98	2	23	65 - 133
1,2-Dichlorobenzene	2000	2000	101	3	25	63 - 131
1,2-Dibromo-3-chloropropane	2000	1500	77	2	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-53S

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28033
Laboratory ID: 1D28033-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-53S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	20	102	10 - 180
Chloromethane	20.0	ND	30	148	33 - 154
Vinyl chloride	20.0	ND	24	119	20 - 167
Bromomethane	20.0	ND	24	121	10 - 173
Chloroethane	20.0	ND	27	134	27 - 180
Trichlorofluoromethane	20.0	ND	24	119	56 - 155
Freon 113	20.0	ND	22	109	47 - 173
Acetone	100	ND	120	124	10 - 180
1,1-Dichloroethene	20.0	ND	27	133	47 - 139
Carbon disulfide	20.0	ND	29	146	43 - 153
Methylene Chloride	20.0	ND	29	144 *	43 - 142
Methyl-tert-Butyl Ether	20.0	ND	27	134	51 - 145
trans-1,2-Dichloroethene	20.0	ND	26	128	54 - 134
cis-1,2-Dichloroethene	20.0	ND	26	128	56 - 128
1,1-Dichloroethane	20.0	ND	31	157 *	57 - 142
2-Butanone	100	ND	130	126	10 - 180
Chloroform	20.0	ND	24	119	58 - 139
1,1,1-Trichloroethane	20.0	ND	23	115	57 - 148
Methyl acetate	20.0	ND	30	148 *	70 - 130
Cyclohexane	20.0	ND	30	152 *	70 - 130
Carbon Tetrachloride	20.0	ND	26	129	54 - 156
1,2-Dichloroethane	20.0	ND	20	101	50 - 156
Benzene	20.0	ND	23	117	56 - 136
Trichloroethene	20.0	ND	23	113	62 - 135
1,2-Dichloropropane	20.0	ND	25	126	61 - 133
Bromodichloromethane	20.0	ND	22	112	58 - 135
4-Methyl-2-pentanone	100	ND	86	86	19 - 180
2-Hexanone	100	ND	100	101	12 - 180
cis-1,3-Dichloropropene	20.0	ND	21	104	64 - 128
Toluene	20.0	ND	24	118	64 - 131
trans-1,3-Dichloropropene	20.0	ND	20	102	65 - 149

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-53S

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28033
Laboratory ID: 1D28033-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-53S

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,1,2-Trichloroethane	20.0	ND	21	104	57 - 141
Tetrachloroethene	20.0	ND	21	105	60 - 147
Dibromochloromethane	20.0	ND	17	87	50 - 140
1,2-Dibromoethane	20.0	ND	19	93	57 - 140
Chlorobenzene	20.0	ND	22	110	51 - 139
Ethylbenzene	20.0	ND	22	111	63 - 133
m,p-Xylenes	40.0	ND	45	113	64 - 133
o-Xylene	20.0	ND	19	97	61 - 129
Bromoform	20.0	ND	14	70	46 - 148
Styrene	20.0	ND	22	111	59 - 136
Isopropylbenzene	20.0	ND	21	105	60 - 132
1,1,2,2-Tetrachloroethane	20.0	ND	17	87	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	25	127	52 - 159
1,3-Dichlorobenzene	20.0	ND	19	97	66 - 129
1,4-Dichlorobenzene	20.0	ND	20	98	65 - 133
1,2-Dichlorobenzene	20.0	ND	19	96	63 - 131
1,2-Dibromo-3-chloropropane	20.0	ND	11	55	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-53S

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28033
Laboratory ID: 1D28033-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-53S

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	21	104	1	26	10 - 180
Chloromethane	20.0	31	154	4	31	33 - 154
Vinyl chloride	20.0	21	107	11	24	20 - 167
Bromomethane	20.0	25	126	4	29	10 - 173
Chloroethane	20.0	27	134	0.04	22	27 - 180
Trichlorofluoromethane	20.0	24	118	1	22	56 - 155
Freon 113	20.0	21	105	4	30	47 - 173
Acetone	100	130	128	4	19	10 - 180
1,1-Dichloroethene	20.0	25	127	5	16	47 - 139
Carbon disulfide	20.0	29	144	2	26	43 - 153
Methylene Chloride	20.0	28	140	3	23	43 - 142
Methyl-tert-Butyl Ether	20.0	26	130	3	22	51 - 145
trans-1,2-Dichloroethene	20.0	27	135 *	5	20	54 - 134
cis-1,2-Dichloroethene	20.0	25	124	3	17	56 - 128
1,1-Dichloroethane	20.0	30	149 *	5	24	57 - 142
2-Butanone	100	120	123	2	29	10 - 180
Chloroform	20.0	23	114	4	17	58 - 139
1,1,1-Trichloroethane	20.0	23	114	1	25	57 - 148
Methyl acetate	20.0	28	139 *	6	20	70 - 130
Cyclohexane	20.0	30	150 *	1	20	70 - 130
Carbon Tetrachloride	20.0	26	129	0.2	27	54 - 156
1,2-Dichloroethane	20.0	19	96	5	18	50 - 156
Benzene	20.0	23	116	0.6	14	56 - 136
Trichloroethene	20.0	21	103	9	20	62 - 135
1,2-Dichloropropane	20.0	25	125	0.6	26	61 - 133
Bromodichloromethane	20.0	22	108	4	19	58 - 135
4-Methyl-2-pentanone	100	110	105	20	24	19 - 180
2-Hexanone	100	110	113	11	28	12 - 180
cis-1,3-Dichloropropene	20.0	20	101	3	20	64 - 128
Toluene	20.0	24	121	2	16	64 - 131
trans-1,3-Dichloropropene	20.0	21	103	0.8	17	65 - 149
1,1,2-Trichloroethane	20.0	22	109	5	16	57 - 141

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

MW-53S

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Matrix: Water
Batch: 1D28033
Laboratory ID: 1D28033-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: MW-53S

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20.0	20	100	5	21	60 - 147
Dibromochloromethane	20.0	18	92	6	18	50 - 140
1,2-Dibromoethane	20.0	18	91	2	16	57 - 140
Chlorobenzene	20.0	22	108	1	13	51 - 139
Ethylbenzene	20.0	22	108	3	18	63 - 133
m,p-Xylenes	40.0	42	105	7	18	64 - 133
o-Xylene	20.0	21	107	9	16	61 - 129
Bromoform	20.0	14	72	3	18	46 - 148
Styrene	20.0	22	110	0.8	32	59 - 136
Isopropylbenzene	20.0	21	105	0.1	23	60 - 132
1,1,2,2-Tetrachloroethane	20.0	16	80	9	17	60 - 139
1,2,4-Trichlorobenzene	20.0	28	139	9	24	52 - 159
1,3-Dichlorobenzene	20.0	20	100	3	23	66 - 129
1,4-Dichlorobenzene	20.0	20	99	1	23	65 - 133
1,2-Dichlorobenzene	20.0	23	115	18	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	17	84	41 *	21	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA65289
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA65289-SCV1)			Lab File ID: 212CD013.D		Analyzed: 03/09/21 14:04			
Dibromofluoromethane	50.0	96	70 - 130	11.05	11.05	0.0000	+/-0.5	
Toluene-d8	50.0	101	70 - 130	13.22	13.21375	0.0063	+/-0.5	
4-Bromofluorobenzene	50.0	103	70 - 130	15.71	15.70875	0.0013	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA65607
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA65607-SCV1)			Lab File ID: 215CX012.D		Analyzed: 03/29/21 13:33			
Dibromofluoromethane	50.0	112	70 - 130	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	108	70 - 130	11.784	11.77875	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	104	70 - 130	14.334	14.32875	0.0053	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66091
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA66091-CCV1)			Lab File ID: 212DU002.D		Analyzed: 04/26/21 07:33			
Dibromofluoromethane	50.0	95	80 - 120	11.1	11.05	0.0500	+/-0.5	
Toluene-d8	50.0	111	80 - 120	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	87	80 - 120	15.75	15.70875	0.0412	+/-0.5	
LCS (1D26010-BS1)			Lab File ID: 212DU003.D		Analyzed: 04/26/21 08:04			
Dibromofluoromethane	50.0	93	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	85	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Matrix Spike (1D26010-MS1)			Lab File ID: 212DU004.D		Analyzed: 04/26/21 08:33			
Dibromofluoromethane	50.0	94	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	112	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	87	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Matrix Spike Dup (1D26010-MSD1)			Lab File ID: 212DU005.D		Analyzed: 04/26/21 09:01			
Dibromofluoromethane	50.0	92	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	110	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	85	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Blank (1D26010-BLK1)			Lab File ID: 212DU007.D		Analyzed: 04/26/21 09:58			
Dibromofluoromethane	50.0	102	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	117	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	88	41 - 142	15.75	15.70875	0.0412	+/-0.5	
Instrument RL Check (AA66091-CRL1)			Lab File ID: 212DU008.D		Analyzed: 04/26/21 10:27			
Dibromofluoromethane	50.0	97	1 - 199	11.1	11.05	0.0500	+/-0.5	
Toluene-d8	50.0	111	1 - 199	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	85	1 - 199	15.75	15.70875	0.0412	+/-0.5	
HMPN-MW0040-042.5-20210419 (AE02766-01)			Lab File ID: 212DU009.D		Analyzed: 04/26/21 10:55			
Dibromofluoromethane	50.0	95	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	112	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0041-035.0-20210419 (AE02766-03)			Lab File ID: 212DU011.D		Analyzed: 04/26/21 11:53			
Dibromofluoromethane	50.0	94	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.75	15.70875	0.0412	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66091
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0031-035.0-20210419 (AE02766-06)			Lab File ID: 212DU012.D		Analyzed: 04/26/21 12:21			
Dibromofluoromethane	50.0	94	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	110	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0036-015.0-20210420 (AE02766-08)			Lab File ID: 212DU013.D		Analyzed: 04/26/21 12:50			
Dibromofluoromethane	50.0	96	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	109	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	82	41 - 142	15.75	15.70875	0.0412	+/-0.5	
HMPN-MW0011-025.0-20210420 (AE02766-09)			Lab File ID: 212DU014.D		Analyzed: 04/26/21 13:18			
Dibromofluoromethane	50.0	95	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	110	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0033-047.5-20210420 (AE02766-11)			Lab File ID: 212DU016.D		Analyzed: 04/26/21 14:16			
Dibromofluoromethane	50.0	97	53 - 146	11.1	11.05	0.0500	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	85	41 - 142	15.75	15.70875	0.0412	+/-0.5	
HMPN-MW0032-042.5-20210420 (AE02766-12)			Lab File ID: 212DU017.D		Analyzed: 04/26/21 14:44			
Dibromofluoromethane	50.0	94	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	109	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	82	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0047-025.0-20210421 (AE02766-13)			Lab File ID: 212DU018.D		Analyzed: 04/26/21 15:13			
Dibromofluoromethane	50.0	97	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	110	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.75	15.70875	0.0412	+/-0.5	
HMPN-MW0046-015.0-20210421 (AE02766-14)			Lab File ID: 212DU019.D		Analyzed: 04/26/21 15:41			
Dibromofluoromethane	50.0	98	53 - 146	11.1	11.05	0.0500	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0038-020.0-20210421 (AE02766-15)			Lab File ID: 212DU020.D		Analyzed: 04/26/21 16:10			
Dibromofluoromethane	50.0	102	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	117	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	88	41 - 142	15.75	15.70875	0.0412	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66091
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0037-010.0-20210421 (AE02766-16)			Lab File ID: 212DU021.D		Analyzed: 04/26/21 16:39			
Dibromofluoromethane	50.0	99	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0016-010.0-20210421 (AE02766-20)			Lab File ID: 212DU022.D		Analyzed: 04/26/21 17:07			
Dibromofluoromethane	50.0	98	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	112	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	85	41 - 142	15.75	15.70875	0.0412	+/-0.5	
HMPN-MW0045-030.0-20210421 (AE02766-21)			Lab File ID: 212DU023.D		Analyzed: 04/26/21 17:36			
Dibromofluoromethane	50.0	97	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	110	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.75	15.70875	0.0412	+/-0.5	
HMPN-MW0024-060.0-20210422 (AE02766-22)			Lab File ID: 212DU024.D		Analyzed: 04/26/21 18:04			
Dibromofluoromethane	50.0	96	53 - 146	11.09	11.05	0.0400	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66113
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA66113-CCV1)				Lab File ID: 212DV002.D		Analyzed: 04/27/21 07:35		
Dibromofluoromethane	50.0	102	80 - 120	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	115	80 - 120	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	88	80 - 120	15.74	15.70875	0.0313	+/-0.5	
LCS (1D27005-BS1)				Lab File ID: 212DV003.D		Analyzed: 04/27/21 08:18		
Dibromofluoromethane	50.0	101	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	118	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	88	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Matrix Spike (1D27005-MS1)				Lab File ID: 212DV004.D		Analyzed: 04/27/21 08:48		
Dibromofluoromethane	50.0	96	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	113	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Matrix Spike Dup (1D27005-MSD1)				Lab File ID: 212DV005.D		Analyzed: 04/27/21 09:17		
Dibromofluoromethane	50.0	98	53 - 146	11.07	11.05	0.0200	+/-0.5	
Toluene-d8	50.0	115	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	86	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Blank (1D27005-BLK1)				Lab File ID: 212DV007.D		Analyzed: 04/27/21 10:14		
Dibromofluoromethane	50.0	100	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	111	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Instrument RL Check (AA66113-CRL1)				Lab File ID: 212DV008.D		Analyzed: 04/27/21 10:43		
Dibromofluoromethane	50.0	104	1 - 199	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	117	1 - 199	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	88	1 - 199	15.73	15.70875	0.0213	+/-0.5	
HMPN-MW0039-035.0-20210419 (AE02766-02RE1)				Lab File ID: 212DV012.D		Analyzed: 04/27/21 12:37		
Dibromofluoromethane	50.0	101	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	113	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0044-045.0-20210419 (AE02766-04)				Lab File ID: 212DV013.D		Analyzed: 04/27/21 13:06		
Dibromofluoromethane	50.0	102	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	114	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66113
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0029-015.0-20210419 (AE02766-07)			Lab File ID: 212DV015.D		Analyzed: 04/27/21 14:03			
Dibromofluoromethane	50.0	102	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	114	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0009-020.0-20210420 (AE02766-10RE1)			Lab File ID: 212DV016.D		Analyzed: 04/27/21 14:32			
Dibromofluoromethane	50.0	100	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	114	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0027-042.5-20210421 (AE02766-17)			Lab File ID: 212DV017.D		Analyzed: 04/27/21 15:00			
Dibromofluoromethane	50.0	103	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	115	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0028-047.5-20210421 (AE02766-18)			Lab File ID: 212DV018.D		Analyzed: 04/27/21 15:29			
Dibromofluoromethane	50.0	105	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	118	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	86	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0004-010.0-20210421 (AE02766-19)			Lab File ID: 212DV019.D		Analyzed: 04/27/21 15:57			
Dibromofluoromethane	50.0	102	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	114	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0002-035.0-20210422 (AE02766-23)			Lab File ID: 212DV020.D		Analyzed: 04/27/21 16:26			
Dibromofluoromethane	50.0	102	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	115	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0008-025.0-20210422 (AE02766-24)			Lab File ID: 212DV021.D		Analyzed: 04/27/21 16:55			
Dibromofluoromethane	50.0	103	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	115	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0042-042.5-20210422 (AE02766-25)			Lab File ID: 212DV022.D		Analyzed: 04/27/21 17:23			
Dibromofluoromethane	50.0	104	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	115	41 - 146	13.25	13.21375	0.0363	+/-0.5	
4-Bromofluorobenzene	50.0	84	41 - 142	15.75	15.70875	0.0412	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66113
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0043-035.0-20210422 (AE02766-26)			Lab File ID: 212DV023.D		Analyzed: 04/27/21 17:52			
Dibromofluoromethane	50.0	108	53 - 146	11.1	11.05	0.0500	+/-0.5	
Toluene-d8	50.0	120	41 - 146	13.26	13.21375	0.0463	+/-0.5	
4-Bromofluorobenzene	50.0	87	41 - 142	15.76	15.70875	0.0512	+/-0.5	
HMPN-MW0034-015.0-20210421 (AE02766-27)			Lab File ID: 212DV024.D		Analyzed: 04/27/21 18:20			
Dibromofluoromethane	50.0	102	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	113	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	83	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0035-035.0-20210421 (AE02766-28)			Lab File ID: 212DV025.D		Analyzed: 04/27/21 18:49			
Dibromofluoromethane	50.0	101	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	112	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	82	41 - 142	15.74	15.70875	0.0313	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66116
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA66116-CCV1)			Lab File ID: 215DV002.D		Analyzed: 04/27/21 08:07			
Dibromofluoromethane	50.0	112	80 - 120	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	115	80 - 120	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	106	80 - 120	14.328	14.32875	-0.0008	+/-0.5	
LCS (1D27020-BS1)			Lab File ID: 215DV003.D		Analyzed: 04/27/21 08:35			
Dibromofluoromethane	50.0	113	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	116	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
Blank (1D27020-BLK1)			Lab File ID: 215DV005.D		Analyzed: 04/27/21 09:31			
Dibromofluoromethane	50.0	110	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	108	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	103	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0041-035.0-20210419 (AE02766-03RE1)			Lab File ID: 215DV008.D		Analyzed: 04/27/21 10:54			
Dibromofluoromethane	50.0	113	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	111	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	104	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0031-035.0-20210419 (AE02766-06RE1)			Lab File ID: 215DV009.D		Analyzed: 04/27/21 11:22			
Dibromofluoromethane	50.0	111	53 - 146	9.422	9.42725	-0.0053	+/-0.5	
Toluene-d8	50.0	110	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	108	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0036-015.0-20210420 (AE02766-08RE1)			Lab File ID: 215DV010.D		Analyzed: 04/27/21 11:50			
Dibromofluoromethane	50.0	114	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	108	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	112	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0037-010.0-20210421 (AE02766-16RE1)			Lab File ID: 215DV011.D		Analyzed: 04/27/21 12:18			
Dibromofluoromethane	50.0	107	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	113	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	104	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
Matrix Spike (1D27020-MS1)			Lab File ID: 215DV024.D		Analyzed: 04/27/21 18:18			
Dibromofluoromethane	50.0	112	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	101	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.328	14.32875	-0.0008	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66116
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (1D27020-MSD1)			Lab File ID: 215DV025.D		Analyzed: 04/27/21 18:46			
Dibromofluoromethane	50.0	116	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	114	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	119	41 - 142	14.328	14.32875	-0.0008	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66133
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA66133-CCV1)				Lab File ID: 212DW002.D		Analyzed: 04/28/21 07:45		
Dibromofluoromethane	50.0	89	80 - 120	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	108	80 - 120	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	88	80 - 120	15.74	15.70875	0.0313	+/-0.5	
LCS (1D28019-BS1)				Lab File ID: 212DW003.D		Analyzed: 04/28/21 08:17		
Dibromofluoromethane	50.0	90	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	113	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	94	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Matrix Spike (1D28019-MS1)				Lab File ID: 212DW004.D		Analyzed: 04/28/21 08:46		
Dibromofluoromethane	5000	84	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	5000	106	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	5000	87	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Matrix Spike Dup (1D28019-MSD1)				Lab File ID: 212DW005.D		Analyzed: 04/28/21 09:14		
Dibromofluoromethane	5000	84	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	5000	104	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	5000	87	41 - 142	15.74	15.70875	0.0313	+/-0.5	
Blank (1D28019-BLK1)				Lab File ID: 212DW007.D		Analyzed: 04/28/21 10:11		
Dibromofluoromethane	50.0	86	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	104	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	85	41 - 142	15.74	15.70875	0.0313	+/-0.5	
HMPN-MW0030-025.0-20210419 (AE02766-05RE2)				Lab File ID: 212DW013.D		Analyzed: 04/28/21 13:03		
Dibromofluoromethane	50.0	87	53 - 146	11.08	11.05	0.0300	+/-0.5	
Toluene-d8	50.0	105	41 - 146	13.24	13.21375	0.0263	+/-0.5	
4-Bromofluorobenzene	50.0	85	41 - 142	15.74	15.70875	0.0313	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66142
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA66142-CCV1)				Lab File ID: 215DW003.D		Analyzed: 04/28/21 08:52		
Dibromofluoromethane	50.0	115	80 - 120	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	105	80 - 120	11.784	11.77875	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	92	80 - 120	14.328	14.32875	-0.0008	+/-0.5	
Blank (1D28033-BLK1)				Lab File ID: 215DW006.D		Analyzed: 04/28/21 10:17		
Dibromofluoromethane	50.0	122	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	114	41 - 146	11.784	11.77875	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	106	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
Instrument RL Check (AA66142-CRL1)				Lab File ID: 215DW007.D		Analyzed: 04/28/21 10:44		
Dibromofluoromethane	50.0	128	1 - 199	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	108	1 - 199	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	92	1 - 199	14.328	14.32875	-0.0008	+/-0.5	
LCS (1D28033-BS1)				Lab File ID: 215DW008.D		Analyzed: 04/28/21 11:12		
Dibromofluoromethane	50.0	119	53 - 146	9.422	9.42725	-0.0053	+/-0.5	
Toluene-d8	50.0	105	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0030-025.0-20210419 (AE02766-05RE1)				Lab File ID: 215DW009.D		Analyzed: 04/28/21 11:45		
Dibromofluoromethane	50.0	118	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	126	41 - 146	11.784	11.77875	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	112	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0028-047.5-20210421 (AE02766-18RE1)				Lab File ID: 215DW010.D		Analyzed: 04/28/21 12:13		
Dibromofluoromethane	50.0	124	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	121	41 - 146	11.778	11.77875	-0.0008	+/-0.5	
4-Bromofluorobenzene	50.0	110	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
Matrix Spike (1D28033-MS1)				Lab File ID: 215DW023.D		Analyzed: 04/28/21 18:13		
Dibromofluoromethane	50.0	121	53 - 146	9.434	9.42725	0.0067	+/-0.5	
Toluene-d8	50.0	115	41 - 146	11.784	11.77875	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	92	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Matrix Spike Dup (1D28033-MSD1)				Lab File ID: 215DW024.D		Analyzed: 04/28/21 18:41		
Dibromofluoromethane	50.0	118	53 - 146	9.428	9.42725	0.0008	+/-0.5	
Toluene-d8	50.0	115	41 - 146	11.784	11.77875	0.0053	+/-0.5	
4-Bromofluorobenzene	50.0	87	41 - 142	14.334	14.32875	0.0053	+/-0.5	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA65289
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA65289-CAL1)			Lab File ID: 212CD002.D			Analyzed: 03/09/21 08:30			
Pentafluorobenzene	258684	11.44	231702	11.44	112	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	456563	12	427152	11.99	107	50 - 200	0.0100	+/-0.50	
Chlorobenzene-d5	220295	14.59	207404	14.59	106	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	157950	16.96	156147	16.94	101	50 - 200	0.0200	+/-0.50	
Cal Standard (AA65289-CAL2)			Lab File ID: 212CD003.D			Analyzed: 03/09/21 08:59			
Pentafluorobenzene	252984	11.44	231702	11.44	109	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	447138	11.99	427152	11.99	105	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	219862	14.59	207404	14.59	106	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	160130	16.95	156147	16.94	103	50 - 200	0.0100	+/-0.50	
Cal Standard (AA65289-CAL3)			Lab File ID: 212CD004.D			Analyzed: 03/09/21 09:27			
Pentafluorobenzene	249505	11.44	231702	11.44	108	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	443522	11.99	427152	11.99	104	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	215472	14.59	207404	14.59	104	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	156777	16.95	156147	16.94	100	50 - 200	0.0100	+/-0.50	
Cal Standard (AA65289-CAL4)			Lab File ID: 212CD005.D			Analyzed: 03/09/21 09:56			
Pentafluorobenzene	244206	11.44	231702	11.44	105	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	431789	11.99	427152	11.99	101	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	212013	14.59	207404	14.59	102	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	155190	16.95	156147	16.94	99	50 - 200	0.0100	+/-0.50	
Cal Standard (AA65289-CAL5)			Lab File ID: 212CD006.D			Analyzed: 03/09/21 10:25			
Pentafluorobenzene	236992	11.44	231702	11.44	102	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	433407	11.99	427152	11.99	101	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	209656	14.59	207404	14.59	101	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	155955	16.95	156147	16.94	100	50 - 200	0.0100	+/-0.50	
Cal Standard (AA65289-CAL6)			Lab File ID: 212CD007.D			Analyzed: 03/09/21 10:53			
Pentafluorobenzene	231702	11.44	231702	11.44	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	427152	11.99	427152	11.99	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	207404	14.59	207404	14.59	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	156147	16.94	156147	16.94	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA65289-CAL7)			Lab File ID: 212CD008.D			Analyzed: 03/09/21 11:22			
Pentafluorobenzene	226247	11.44	231702	11.44	98	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	427385	11.99	427152	11.99	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	206954	14.58	207404	14.59	100	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	158337	16.95	156147	16.94	101	50 - 200	0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA65289
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA65289-CAL8)			Lab File ID: 212CD009.D			Analyzed: 03/09/21 11:50			
Pentafluorobenzene	228850	11.44	231702	11.44	99	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	429679	11.99	427152	11.99	101	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	211567	14.59	207404	14.59	102	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	163882	16.95	156147	16.94	105	50 - 200	0.0100	+/-0.50	
Secondary Cal Check (AA65289-SCV1)			Lab File ID: 212CD013.D			Analyzed: 03/09/21 14:04			
Pentafluorobenzene	241526	11.45	231702	11.44	104	50 - 200	0.0100	+/-0.50	
1,4-Difluorobenzene	436002	12	427152	11.99	102	50 - 200	0.0100	+/-0.50	
Chlorobenzene-d5	211494	14.6	207404	14.59	102	50 - 200	0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	162014	16.95	156147	16.94	104	50 - 200	0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA65607
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA65607-CAL1)			Lab File ID: 215CX003.D			Analyzed: 03/29/21 09:08			
Pentafluorobenzene	1346004	9.857	1384465	9.851	97	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2604384	10.456	2848520	10.444	91	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1476739	13.229	1764069	13.223	84	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1485351	15.491	1623575	15.486	91	50 - 200	0.0050	+/-0.50	
Cal Standard (AA65607-CAL2)			Lab File ID: 215CX004.D			Analyzed: 03/29/21 09:36			
Pentafluorobenzene	1328802	9.857	1384465	9.851	96	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2614044	10.45	2848520	10.444	92	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1465646	13.229	1764069	13.223	83	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1484001	15.486	1623575	15.486	91	50 - 200	0.0000	+/-0.50	
Cal Standard (AA65607-CAL3)			Lab File ID: 215CX005.D			Analyzed: 03/29/21 10:04			
Pentafluorobenzene	1303609	9.851	1384465	9.851	94	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2636527	10.444	2848520	10.444	93	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1519825	13.229	1764069	13.223	86	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1521127	15.485	1623575	15.486	94	50 - 200	-0.0010	+/-0.50	
Cal Standard (AA65607-CAL4)			Lab File ID: 215CX006.D			Analyzed: 03/29/21 10:31			
Pentafluorobenzene	1312838	9.857	1384465	9.851	95	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2602591	10.444	2848520	10.444	91	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1563138	13.229	1764069	13.223	89	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1552067	15.485	1623575	15.486	96	50 - 200	-0.0010	+/-0.50	
Cal Standard (AA65607-CAL5)			Lab File ID: 215CX007.D			Analyzed: 03/29/21 10:59			
Pentafluorobenzene	1341958	9.851	1384465	9.851	97	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2685709	10.45	2848520	10.444	94	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1578295	13.229	1764069	13.223	89	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1585703	15.485	1623575	15.486	98	50 - 200	-0.0010	+/-0.50	
Cal Standard (AA65607-CAL6)			Lab File ID: 215CX008.D			Analyzed: 03/29/21 11:27			
Pentafluorobenzene	1384465	9.851	1384465	9.851	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2848520	10.444	2848520	10.444	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1764069	13.223	1764069	13.223	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1623575	15.486	1623575	15.486	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA65607-CAL7)			Lab File ID: 215CX009.D			Analyzed: 03/29/21 11:55			
Pentafluorobenzene	1475861	9.851	1384465	9.851	107	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2951865	10.444	2848520	10.444	104	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1901860	13.223	1764069	13.223	108	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1612454	15.485	1623575	15.486	99	50 - 200	-0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA65607
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA65607-CAL8)			Lab File ID: 215CX010.D			Analyzed: 03/29/21 12:22			
Pentafluorobenzene	1386898	9.851	1384465	9.851	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	3049005	10.444	2848520	10.444	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1978990	13.223	1764069	13.223	112	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1622439	15.485	1623575	15.486	100	50 - 200	-0.0010	+/-0.50	
Secondary Cal Check (AA65607-SCV1)			Lab File ID: 215CX012.D			Analyzed: 03/29/21 13:33			
Pentafluorobenzene	1380525	9.857	1384465	9.851	100	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2976518	10.45	2848520	10.444	104	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1834661	13.229	1764069	13.223	104	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1578523	15.485	1623575	15.486	97	50 - 200	-0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66091
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA66091-CCV1)			Lab File ID: 212DU002.D			Analyzed: 04/26/21 07:33			
Pentafluorobenzene	222271	11.49	231702	11.44	96	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	377685	12.04	427152	11.99	88	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	217191	14.63	207404	14.59	105	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	190405	16.99	156147	16.94	122	50 - 200	0.0500	+/-0.50	
LCS (1D26010-BS1)			Lab File ID: 212DU003.D			Analyzed: 04/26/21 08:04			
Pentafluorobenzene	238097	11.49	231702	11.44	103	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	397281	12.04	427152	11.99	93	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	225938	14.63	207404	14.59	109	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	193572	16.99	156147	16.94	124	50 - 200	0.0500	+/-0.50	
Matrix Spike (1D26010-MS1)			Lab File ID: 212DU004.D			Analyzed: 04/26/21 08:33			
Pentafluorobenzene	234018	11.49	231702	11.44	101	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	388467	12.04	427152	11.99	91	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	218425	14.63	207404	14.59	105	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	188172	16.99	156147	16.94	121	50 - 200	0.0500	+/-0.50	
Matrix Spike Dup (1D26010-MSD1)			Lab File ID: 212DU005.D			Analyzed: 04/26/21 09:01			
Pentafluorobenzene	240346	11.49	231702	11.44	104	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	397801	12.04	427152	11.99	93	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	226637	14.63	207404	14.59	109	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	192512	16.99	156147	16.94	123	50 - 200	0.0500	+/-0.50	
Blank (1D26010-BLK1)			Lab File ID: 212DU007.D			Analyzed: 04/26/21 09:58			
Pentafluorobenzene	245461	11.48	231702	11.44	106	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	406978	12.03	427152	11.99	95	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	234022	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	196189	16.99	156147	16.94	126	50 - 200	0.0500	+/-0.50	
Instrument RL Check (AA66091-CRL1)			Lab File ID: 212DU008.D			Analyzed: 04/26/21 10:27			
Pentafluorobenzene	240466	11.49	231702	11.44	104	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	403601	12.04	427152	11.99	94	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	229823	14.63	207404	14.59	111	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	191304	17	156147	16.94	123	50 - 200	0.0600	+/-0.50	
HMPN-MW0040-042.5-20210419 (AE02766-01)			Lab File ID: 212DU009.D			Analyzed: 04/26/21 10:55			
Pentafluorobenzene	247273	11.48	231702	11.44	107	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	408798	12.03	427152	11.99	96	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	234492	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	193819	16.99	156147	16.94	124	50 - 200	0.0500	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66091
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0041-035.0-20210419 (AE02766-03)			Lab File ID: 212DU011.D			Analyzed: 04/26/21 11:53			
Pentafluorobenzene	239954	11.48	231702	11.44	104	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	404276	12.03	427152	11.99	95	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	233985	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	194101	16.99	156147	16.94	124	50 - 200	0.0500	+/-0.50	
HMPN-MW0031-035.0-20210419 (AE02766-06)			Lab File ID: 212DU012.D			Analyzed: 04/26/21 12:21			
Pentafluorobenzene	244576	11.48	231702	11.44	106	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	406912	12.03	427152	11.99	95	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	235585	14.62	207404	14.59	114	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	198728	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0036-015.0-20210420 (AE02766-08)			Lab File ID: 212DU013.D			Analyzed: 04/26/21 12:50			
Pentafluorobenzene	245644	11.48	231702	11.44	106	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	412582	12.03	427152	11.99	97	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	238185	14.63	207404	14.59	115	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	198102	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0011-025.0-20210420 (AE02766-09)			Lab File ID: 212DU014.D			Analyzed: 04/26/21 13:18			
Pentafluorobenzene	246682	11.48	231702	11.44	106	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	410929	12.03	427152	11.99	96	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	236466	14.62	207404	14.59	114	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	198382	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0033-047.5-20210420 (AE02766-11)			Lab File ID: 212DU016.D			Analyzed: 04/26/21 14:16			
Pentafluorobenzene	241896	11.49	231702	11.44	104	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	403354	12.04	427152	11.99	94	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	232112	14.63	207404	14.59	112	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	194916	16.99	156147	16.94	125	50 - 200	0.0500	+/-0.50	
HMPN-MW0032-042.5-20210420 (AE02766-12)			Lab File ID: 212DU017.D			Analyzed: 04/26/21 14:44			
Pentafluorobenzene	251237	11.49	231702	11.44	108	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	417015	12.03	427152	11.99	98	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	239541	14.62	207404	14.59	115	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	201215	16.99	156147	16.94	129	50 - 200	0.0500	+/-0.50	
HMPN-MW0047-025.0-20210421 (AE02766-13)			Lab File ID: 212DU018.D			Analyzed: 04/26/21 15:13			
Pentafluorobenzene	246438	11.48	231702	11.44	106	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	410166	12.03	427152	11.99	96	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	235790	14.62	207404	14.59	114	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	198830	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66091
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0046-015.0-20210421 (AE02766-14)			Lab File ID: 212DU019.D			Analyzed: 04/26/21 15:41			
Pentafluorobenzene	244179	11.48	231702	11.44	105	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	410483	12.04	427152	11.99	96	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	236047	14.63	207404	14.59	114	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	197245	16.99	156147	16.94	126	50 - 200	0.0500	+/-0.50	
HMPN-MW0038-020.0-20210421 (AE02766-15)			Lab File ID: 212DU020.D			Analyzed: 04/26/21 16:10			
Pentafluorobenzene	245225	11.48	231702	11.44	106	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	410506	12.03	427152	11.99	96	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	236187	14.62	207404	14.59	114	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	197387	16.99	156147	16.94	126	50 - 200	0.0500	+/-0.50	
HMPN-MW0037-010.0-20210421 (AE02766-16)			Lab File ID: 212DU021.D			Analyzed: 04/26/21 16:39			
Pentafluorobenzene	237143	11.48	231702	11.44	102	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	400119	12.04	427152	11.99	94	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	232700	14.63	207404	14.59	112	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	198668	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0016-010.0-20210421 (AE02766-20)			Lab File ID: 212DU022.D			Analyzed: 04/26/21 17:07			
Pentafluorobenzene	241256	11.49	231702	11.44	104	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	405049	12.03	427152	11.99	95	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	233048	14.62	207404	14.59	112	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	196025	17	156147	16.94	126	50 - 200	0.0600	+/-0.50	
HMPN-MW0045-030.0-20210421 (AE02766-21)			Lab File ID: 212DU023.D			Analyzed: 04/26/21 17:36			
Pentafluorobenzene	244219	11.48	231702	11.44	105	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	410683	12.03	427152	11.99	96	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	234426	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	196160	17	156147	16.94	126	50 - 200	0.0600	+/-0.50	
HMPN-MW0024-060.0-20210422 (AE02766-22)			Lab File ID: 212DU024.D			Analyzed: 04/26/21 18:04			
Pentafluorobenzene	244725	11.49	231702	11.44	106	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	408514	12.04	427152	11.99	96	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	237207	14.63	207404	14.59	114	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	201024	16.99	156147	16.94	129	50 - 200	0.0500	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Sequence: AA66113
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA66113-CCV1)			Lab File ID: 212DV002.D			Analyzed: 04/27/21 07:35			
Pentafluorobenzene	212107	11.47	231702	11.44	92	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	372551	12.02	427152	11.99	87	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	221198	14.61	207404	14.59	107	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	195685	16.98	156147	16.94	125	50 - 200	0.0400	+/-0.50	
LCS (1D27005-BS1)			Lab File ID: 212DV003.D			Analyzed: 04/27/21 08:18			
Pentafluorobenzene	229793	11.47	231702	11.44	99	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	391367	12.02	427152	11.99	92	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	231978	14.62	207404	14.59	112	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	199862	16.98	156147	16.94	128	50 - 200	0.0400	+/-0.50	
Matrix Spike (1D27005-MS1)			Lab File ID: 212DV004.D			Analyzed: 04/27/21 08:48			
Pentafluorobenzene	229881	11.47	231702	11.44	99	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	390140	12.02	427152	11.99	91	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	229306	14.61	207404	14.59	111	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	199854	16.98	156147	16.94	128	50 - 200	0.0400	+/-0.50	
Matrix Spike Dup (1D27005-MSD1)			Lab File ID: 212DV005.D			Analyzed: 04/27/21 09:17			
Pentafluorobenzene	223914	11.47	231702	11.44	97	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	381932	12.02	427152	11.99	89	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	226180	14.61	207404	14.59	109	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	195590	16.98	156147	16.94	125	50 - 200	0.0400	+/-0.50	
Blank (1D27005-BLK1)			Lab File ID: 212DV007.D			Analyzed: 04/27/21 10:14			
Pentafluorobenzene	239079	11.47	231702	11.44	103	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	407756	12.02	427152	11.99	95	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	237047	14.61	207404	14.59	114	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	202128	16.98	156147	16.94	129	50 - 200	0.0400	+/-0.50	
Instrument RL Check (AA66113-CRL1)			Lab File ID: 212DV008.D			Analyzed: 04/27/21 10:43			
Pentafluorobenzene	234742	11.47	231702	11.44	101	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	401681	12.02	427152	11.99	94	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	234662	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	201153	16.98	156147	16.94	129	50 - 200	0.0400	+/-0.50	
HMPN-MW0039-035.0-20210419 (AE02766-02RE1)			Lab File ID: 212DV012.D			Analyzed: 04/27/21 12:37			
Pentafluorobenzene	232570	11.47	231702	11.44	100	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	397565	12.02	427152	11.99	93	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	237741	14.61	207404	14.59	115	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	202175	16.98	156147	16.94	129	50 - 200	0.0400	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66113
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0044-045.0-20210419 (AE02766-04)			Lab File ID: 212DV013.D			Analyzed: 04/27/21 13:06			
Pentafluorobenzene	229178	11.47	231702	11.44	99	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	393544	12.02	427152	11.99	92	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	237209	14.62	207404	14.59	114	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	203551	16.99	156147	16.94	130	50 - 200	0.0500	+/-0.50	
HMPN-MW0029-015.0-20210419 (AE02766-07)			Lab File ID: 212DV015.D			Analyzed: 04/27/21 14:03			
Pentafluorobenzene	230748	11.48	231702	11.44	100	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	395970	12.03	427152	11.99	93	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	235153	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	199680	16.99	156147	16.94	128	50 - 200	0.0500	+/-0.50	
HMPN-MW0009-020.0-20210420 (AE02766-10RE1)			Lab File ID: 212DV016.D			Analyzed: 04/27/21 14:32			
Pentafluorobenzene	232419	11.47	231702	11.44	100	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	396615	12.02	427152	11.99	93	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	236906	14.62	207404	14.59	114	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	199880	16.99	156147	16.94	128	50 - 200	0.0500	+/-0.50	
HMPN-MW0027-042.5-20210421 (AE02766-17)			Lab File ID: 212DV017.D			Analyzed: 04/27/21 15:00			
Pentafluorobenzene	230894	11.48	231702	11.44	100	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	394491	12.03	427152	11.99	92	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	235382	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	200618	16.99	156147	16.94	128	50 - 200	0.0500	+/-0.50	
HMPN-MW0028-047.5-20210421 (AE02766-18)			Lab File ID: 212DV018.D			Analyzed: 04/27/21 15:29			
Pentafluorobenzene	235204	11.48	231702	11.44	102	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	400170	12.03	427152	11.99	94	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	239342	14.62	207404	14.59	115	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	204444	16.99	156147	16.94	131	50 - 200	0.0500	+/-0.50	
HMPN-MW0004-010.0-20210421 (AE02766-19)			Lab File ID: 212DV019.D			Analyzed: 04/27/21 15:57			
Pentafluorobenzene	229332	11.48	231702	11.44	99	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	395299	12.03	427152	11.99	93	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	234752	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	199061	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0002-035.0-20210422 (AE02766-23)			Lab File ID: 212DV020.D			Analyzed: 04/27/21 16:26			
Pentafluorobenzene	226398	11.48	231702	11.44	98	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	388821	12.03	427152	11.99	91	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	235123	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	200604	16.99	156147	16.94	128	50 - 200	0.0500	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66113
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0008-025.0-20210422 (AE02766-24)			Lab File ID: 212DV021.D			Analyzed: 04/27/21 16:55			
Pentafluorobenzene	228126	11.48	231702	11.44	98	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	391088	12.03	427152	11.99	92	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	235329	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	198535	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0042-042.5-20210422 (AE02766-25)			Lab File ID: 212DV022.D			Analyzed: 04/27/21 17:23			
Pentafluorobenzene	225772	11.48	231702	11.44	97	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	392179	12.02	427152	11.99	92	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	233087	14.62	207404	14.59	112	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	197314	16.99	156147	16.94	126	50 - 200	0.0500	+/-0.50	
HMPN-MW0043-035.0-20210422 (AE02766-26)			Lab File ID: 212DV023.D			Analyzed: 04/27/21 17:52			
Pentafluorobenzene	226106	11.49	231702	11.44	98	50 - 200	0.0500	+/-0.50	
1,4-Difluorobenzene	393079	12.04	427152	11.99	92	50 - 200	0.0500	+/-0.50	
Chlorobenzene-d5	235293	14.63	207404	14.59	113	50 - 200	0.0400	+/-0.50	
1,4-Dichlorobenzene-d4	197324	17	156147	16.94	126	50 - 200	0.0600	+/-0.50	
HMPN-MW0034-015.0-20210421 (AE02766-27)			Lab File ID: 212DV024.D			Analyzed: 04/27/21 18:20			
Pentafluorobenzene	226379	11.48	231702	11.44	98	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	392284	12.03	427152	11.99	92	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	233536	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	197762	16.99	156147	16.94	127	50 - 200	0.0500	+/-0.50	
HMPN-MW0035-035.0-20210421 (AE02766-28)			Lab File ID: 212DV025.D			Analyzed: 04/27/21 18:49			
Pentafluorobenzene	232031	11.48	231702	11.44	100	50 - 200	0.0400	+/-0.50	
1,4-Difluorobenzene	399685	12.03	427152	11.99	94	50 - 200	0.0400	+/-0.50	
Chlorobenzene-d5	238154	14.62	207404	14.59	115	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	201122	16.99	156147	16.94	129	50 - 200	0.0500	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66116
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA66116-CCV1)			Lab File ID: 215DV002.D			Analyzed: 04/27/21 08:07			
Pentafluorobenzene	1041773	9.851	1384465	9.851	75	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2145571	10.45	2848520	10.444	75	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1346556	13.229	1764069	13.223	76	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1209551	15.486	1623575	15.486	74	50 - 200	0.0000	+/-0.50	
LCS (1D27020-BS1)			Lab File ID: 215DV003.D			Analyzed: 04/27/21 08:35			
Pentafluorobenzene	1063082	9.851	1384465	9.851	77	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2184115	10.444	2848520	10.444	77	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1349867	13.229	1764069	13.223	77	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1183150	15.485	1623575	15.486	73	50 - 200	-0.0010	+/-0.50	
Blank (1D27020-BLK1)			Lab File ID: 215DV005.D			Analyzed: 04/27/21 09:31			
Pentafluorobenzene	1060505	9.851	1384465	9.851	77	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2109466	10.444	2848520	10.444	74	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1261619	13.229	1764069	13.223	72	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1139715	15.485	1623575	15.486	70	50 - 200	-0.0010	+/-0.50	
HMPN-MW0041-035.0-20210419 (AE02766-03RE1)			Lab File ID: 215DV008.D			Analyzed: 04/27/21 10:54			
Pentafluorobenzene	1019636	9.857	1384465	9.851	74	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2060785	10.444	2848520	10.444	72	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1233818	13.229	1764069	13.223	70	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1105987	15.485	1623575	15.486	68	50 - 200	-0.0010	+/-0.50	
HMPN-MW0031-035.0-20210419 (AE02766-06RE1)			Lab File ID: 215DV009.D			Analyzed: 04/27/21 11:22			
Pentafluorobenzene	1039264	9.851	1384465	9.851	75	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2040740	10.444	2848520	10.444	72	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1198082	13.229	1764069	13.223	68	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1099581	15.485	1623575	15.486	68	50 - 200	-0.0010	+/-0.50	
HMPN-MW0036-015.0-20210420 (AE02766-08RE1)			Lab File ID: 215DV010.D			Analyzed: 04/27/21 11:50			
Pentafluorobenzene	1037274	9.857	1384465	9.851	75	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2121201	10.444	2848520	10.444	74	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1180790	13.223	1764069	13.223	67	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1152935	15.485	1623575	15.486	71	50 - 200	-0.0010	+/-0.50	
HMPN-MW0037-010.0-20210421 (AE02766-16RE1)			Lab File ID: 215DV011.D			Analyzed: 04/27/21 12:18			
Pentafluorobenzene	1065094	9.851	1384465	9.851	77	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2062369	10.444	2848520	10.444	72	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1252983	13.229	1764069	13.223	71	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1157187	15.485	1623575	15.486	71	50 - 200	-0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66116
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (1D27020-MS1)			Lab File ID: 215DV024.D			Analyzed: 04/27/21 18:18			
Pentafluorobenzene	1074216	9.851	1384465	9.851	78	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2480004	10.45	2848520	10.444	87	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1535003	13.229	1764069	13.223	87	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1329945	15.491	1623575	15.486	82	50 - 200	0.0050	+/-0.50	
Matrix Spike Dup (1D27020-MSD1)			Lab File ID: 215DV025.D			Analyzed: 04/27/21 18:46			
Pentafluorobenzene	1224130	9.857	1384465	9.851	88	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2568791	10.45	2848520	10.444	90	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1419706	13.229	1764069	13.223	80	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1248745	15.485	1623575	15.486	77	50 - 200	-0.0010	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66133
Instrument: OVGCMS2
Matrix: Water
Calibration: 2103054

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA66133-CCV1)			Lab File ID: 212DW002.D			Analyzed: 04/28/21 07:45			
Pentafluorobenzene	237360	11.47	231702	11.44	102	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	393146	12.02	427152	11.99	92	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	218886	14.61	207404	14.59	106	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	186587	16.98	156147	16.94	119	50 - 200	0.0400	+/-0.50	
LCS (1D28019-BS1)			Lab File ID: 212DW003.D			Analyzed: 04/28/21 08:17			
Pentafluorobenzene	255968	11.47	231702	11.44	110	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	410239	12.02	427152	11.99	96	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	220387	14.62	207404	14.59	106	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	183592	16.98	156147	16.94	118	50 - 200	0.0400	+/-0.50	
Matrix Spike (1D28019-MS1)			Lab File ID: 212DW004.D			Analyzed: 04/28/21 08:46			
Pentafluorobenzene	260107	11.47	231702	11.44	112	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	412670	12.02	427152	11.99	97	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	222058	14.61	207404	14.59	107	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	185344	16.98	156147	16.94	119	50 - 200	0.0400	+/-0.50	
Matrix Spike Dup (1D28019-MSD1)			Lab File ID: 212DW005.D			Analyzed: 04/28/21 09:14			
Pentafluorobenzene	262522	11.47	231702	11.44	113	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	417654	12.02	427152	11.99	98	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	223567	14.62	207404	14.59	108	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	187234	16.98	156147	16.94	120	50 - 200	0.0400	+/-0.50	
Blank (1D28019-BLK1)			Lab File ID: 212DW007.D			Analyzed: 04/28/21 10:11			
Pentafluorobenzene	271944	11.47	231702	11.44	117	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	430780	12.02	427152	11.99	101	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	232220	14.61	207404	14.59	112	50 - 200	0.0200	+/-0.50	
1,4-Dichlorobenzene-d4	188399	16.98	156147	16.94	121	50 - 200	0.0400	+/-0.50	
HMPN-MW0030-025.0-20210419 (AE02766-05RE2)			Lab File ID: 212DW013.D			Analyzed: 04/28/21 13:03			
Pentafluorobenzene	270060	11.47	231702	11.44	117	50 - 200	0.0300	+/-0.50	
1,4-Difluorobenzene	429903	12.02	427152	11.99	101	50 - 200	0.0300	+/-0.50	
Chlorobenzene-d5	234458	14.62	207404	14.59	113	50 - 200	0.0300	+/-0.50	
1,4-Dichlorobenzene-d4	188770	16.99	156147	16.94	121	50 - 200	0.0500	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66142
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA66142-CCV1)			Lab File ID: 215DW003.D			Analyzed: 04/28/21 08:52			
Pentafluorobenzene	1181199	9.857	1384465	9.851	85	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2655892	10.45	2848520	10.444	93	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1710514	13.229	1764069	13.223	97	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1362099	15.485	1623575	15.486	84	50 - 200	-0.0010	+/-0.50	
Blank (1D28033-BLK1)			Lab File ID: 215DW006.D			Analyzed: 04/28/21 10:17			
Pentafluorobenzene	1095490	9.851	1384465	9.851	79	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2601514	10.45	2848520	10.444	91	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1512947	13.229	1764069	13.223	86	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1228968	15.485	1623575	15.486	76	50 - 200	-0.0010	+/-0.50	
Instrument RL Check (AA66142-CRL1)			Lab File ID: 215DW007.D			Analyzed: 04/28/21 10:44			
Pentafluorobenzene	1049446	9.851	1384465	9.851	76	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2474176	10.45	2848520	10.444	87	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1509227	13.229	1764069	13.223	86	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1287272	15.485	1623575	15.486	79	50 - 200	-0.0010	+/-0.50	
LCS (1D28033-BS1)			Lab File ID: 215DW008.D			Analyzed: 04/28/21 11:12			
Pentafluorobenzene	1095001	9.857	1384465	9.851	79	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2473381	10.444	2848520	10.444	87	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1540701	13.229	1764069	13.223	87	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1235848	15.485	1623575	15.486	76	50 - 200	-0.0010	+/-0.50	
HMPN-MW0030-025.0-20210419 (AE02766-05RE1)			Lab File ID: 215DW009.D			Analyzed: 04/28/21 11:45			
Pentafluorobenzene	1126404	9.857	1384465	9.851	81	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2282085	10.45	2848520	10.444	80	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1366501	13.229	1764069	13.223	77	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1261343	15.486	1623575	15.486	78	50 - 200	0.0000	+/-0.50	
HMPN-MW0028-047.5-20210421 (AE02766-18RE1)			Lab File ID: 215DW010.D			Analyzed: 04/28/21 12:13			
Pentafluorobenzene	1098828	9.857	1384465	9.851	79	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2289725	10.45	2848520	10.444	80	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1365689	13.229	1764069	13.223	77	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1237123	15.486	1623575	15.486	76	50 - 200	0.0000	+/-0.50	
Matrix Spike (1D28033-MS1)			Lab File ID: 215DW023.D			Analyzed: 04/28/21 18:13			
Pentafluorobenzene	1069446	9.857	1384465	9.851	77	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2297951	10.45	2848520	10.444	81	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1443786	13.229	1764069	13.223	82	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1181144	15.491	1623575	15.486	73	50 - 200	0.0050	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66142
Instrument: OVGCMS5
Matrix: Water
Calibration: 2103152

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (1D28033-MSD1)			Lab File ID: 215DW024.D			Analyzed: 04/28/21 18:41			
Pentafluorobenzene	1128632	9.857	1384465	9.851	82	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2396073	10.45	2848520	10.444	84	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1431927	13.229	1764069	13.223	81	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1112373	15.491	1623575	15.486	69	50 - 200	0.0050	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA65289		
Calibration:	2103054	Instrument:	OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA65289-TUN1	212CD001.D	03/09/21 07:55
Cal Standard	AA65289-CAL1	212CD002.D	03/09/21 08:30
Cal Standard	AA65289-CAL2	212CD003.D	03/09/21 08:59
Cal Standard	AA65289-CAL3	212CD004.D	03/09/21 09:27
Cal Standard	AA65289-CAL4	212CD005.D	03/09/21 09:56
Cal Standard	AA65289-CAL5	212CD006.D	03/09/21 10:25
Cal Standard	AA65289-CAL6	212CD007.D	03/09/21 10:53
Cal Standard	AA65289-CAL7	212CD008.D	03/09/21 11:22
Cal Standard	AA65289-CAL8	212CD009.D	03/09/21 11:50
Secondary Cal Check	AA65289-SCV1	212CD013.D	03/09/21 14:04

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA65607		
Calibration:	2103152	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA65607-TUN1	215CX002.D	03/29/21 08:34
Cal Standard	AA65607-CAL1	215CX003.D	03/29/21 09:08
Cal Standard	AA65607-CAL2	215CX004.D	03/29/21 09:36
Cal Standard	AA65607-CAL3	215CX005.D	03/29/21 10:04
Cal Standard	AA65607-CAL4	215CX006.D	03/29/21 10:31
Cal Standard	AA65607-CAL5	215CX007.D	03/29/21 10:59
Cal Standard	AA65607-CAL6	215CX008.D	03/29/21 11:27
Cal Standard	AA65607-CAL7	215CX009.D	03/29/21 11:55
Cal Standard	AA65607-CAL8	215CX010.D	03/29/21 12:22
Secondary Cal Check	AA65607-SCV1	215CX012.D	03/29/21 13:33

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66091
Calibration: 2103054
Instrument: OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA66091-CCV1	212DU002.D	04/26/21 07:33
LCS	1D26010-BS1	212DU003.D	04/26/21 08:04
HMPN-MW0040-042.5-20210419	1D26010-MS1	212DU004.D	04/26/21 08:33
HMPN-MW0040-042.5-20210419	1D26010-MSD1	212DU005.D	04/26/21 09:01
Blank	1D26010-BLK1	212DU007.D	04/26/21 09:58
Instrument RL Check	AA66091-CRL1	212DU008.D	04/26/21 10:27
HMPN-MW0040-042.5-20210419	AE02766-01	212DU009.D	04/26/21 10:55
HMPN-MW0041-035.0-20210419	AE02766-03	212DU011.D	04/26/21 11:53
HMPN-MW0031-035.0-20210419	AE02766-06	212DU012.D	04/26/21 12:21
HMPN-MW0036-015.0-20210420	AE02766-08	212DU013.D	04/26/21 12:50
HMPN-MW0011-025.0-20210420	AE02766-09	212DU014.D	04/26/21 13:18
HMPN-MW0033-047.5-20210420	AE02766-11	212DU016.D	04/26/21 14:16
HMPN-MW0032-042.5-20210420	AE02766-12	212DU017.D	04/26/21 14:44
HMPN-MW0047-025.0-20210421	AE02766-13	212DU018.D	04/26/21 15:13
HMPN-MW0046-015.0-20210421	AE02766-14	212DU019.D	04/26/21 15:41
HMPN-MW0038-020.0-20210421	AE02766-15	212DU020.D	04/26/21 16:10
HMPN-MW0037-010.0-20210421	AE02766-16	212DU021.D	04/26/21 16:39
HMPN-MW0016-010.0-20210421	AE02766-20	212DU022.D	04/26/21 17:07
HMPN-MW0045-030.0-20210421	AE02766-21	212DU023.D	04/26/21 17:36
HMPN-MW0024-060.0-20210422	AE02766-22	212DU024.D	04/26/21 18:04

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Sequence: AA66113
Calibration: 2103054
Instrument: OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA66113-TUN1	212DV001.D	04/27/21 07:03
Calibration Check	AA66113-CCV1	212DV002.D	04/27/21 07:35
LCS	1D27005-BS1	212DV003.D	04/27/21 08:18
CWWTF-INF	1D27005-MS1	212DV004.D	04/27/21 08:48
CWWTF-INF	1D27005-MSD1	212DV005.D	04/27/21 09:17
Blank	1D27005-BLK1	212DV007.D	04/27/21 10:14
Instrument RL Check	AA66113-CRL1	212DV008.D	04/27/21 10:43
HMPN-MW0039-035.0-20210419	AE02766-02RE1	212DV012.D	04/27/21 12:37
HMPN-MW0044-045.0-20210419	AE02766-04	212DV013.D	04/27/21 13:06
HMPN-MW0029-015.0-20210419	AE02766-07	212DV015.D	04/27/21 14:03
HMPN-MW0009-020.0-20210420	AE02766-10RE1	212DV016.D	04/27/21 14:32
HMPN-MW0027-042.5-20210421	AE02766-17	212DV017.D	04/27/21 15:00
HMPN-MW0028-047.5-20210421	AE02766-18	212DV018.D	04/27/21 15:29
HMPN-MW0004-010.0-20210421	AE02766-19	212DV019.D	04/27/21 15:57
HMPN-MW0002-035.0-20210422	AE02766-23	212DV020.D	04/27/21 16:26
HMPN-MW0008-025.0-20210422	AE02766-24	212DV021.D	04/27/21 16:55
HMPN-MW0042-042.5-20210422	AE02766-25	212DV022.D	04/27/21 17:23
HMPN-MW0043-035.0-20210422	AE02766-26	212DV023.D	04/27/21 17:52
HMPN-MW0034-015.0-20210421	AE02766-27	212DV024.D	04/27/21 18:20
HMPN-MW0035-035.0-20210421	AE02766-28	212DV025.D	04/27/21 18:49

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA66116		
Calibration:	2103152	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA66116-TUN1	215DV001.D	04/27/21 07:40
Calibration Check	AA66116-CCV1	215DV002.D	04/27/21 08:07
LCS	1D27020-BS1	215DV003.D	04/27/21 08:35
Blank	1D27020-BLK1	215DV005.D	04/27/21 09:31
HMPN-MW0041-035.0-20210419	AE02766-03RE1	215DV008.D	04/27/21 10:54
HMPN-MW0031-035.0-20210419	AE02766-06RE1	215DV009.D	04/27/21 11:22
HMPN-MW0036-015.0-20210420	AE02766-08RE1	215DV010.D	04/27/21 11:50
HMPN-MW0037-010.0-20210421	AE02766-16RE1	215DV011.D	04/27/21 12:18
CRCA-ASEFFLUENT-20210422	1D27020-MS1	215DV024.D	04/27/21 18:18
CRCA-ASEFFLUENT-20210422	1D27020-MSD1	215DV025.D	04/27/21 18:46

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA66133		
Calibration:	2103054	Instrument:	OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA66133-TUN1	212DW001.D	04/28/21 07:13
Calibration Check	AA66133-CCV1	212DW002.D	04/28/21 07:45
LCS	1D28019-BS1	212DW003.D	04/28/21 08:17
OWS	1D28019-MS1	212DW004.D	04/28/21 08:46
OWS	1D28019-MSD1	212DW005.D	04/28/21 09:14
Blank	1D28019-BLK1	212DW007.D	04/28/21 10:11
HMPN-MW0030-025.0-20210419	AE02766-05RE2	212DW013.D	04/28/21 13:03

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA66142		
Calibration:	2103152	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA66142-CCV1	215DW003.D	04/28/21 08:52
Blank	1D28033-BLK1	215DW006.D	04/28/21 10:17
Instrument RL Check	AA66142-CRL1	215DW007.D	04/28/21 10:44
LCS	1D28033-BS1	215DW008.D	04/28/21 11:12
HMPN-MW0030-025.0-20210419	AE02766-05RE1	215DW009.D	04/28/21 11:45
HMPN-MW0028-047.5-20210421	AE02766-18RE1	215DW010.D	04/28/21 12:13
MW-53S	1D28033-MS1	215DW023.D	04/28/21 18:13
MW-53S	1D28033-MSD1	215DW024.D	04/28/21 18:41

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	212CD001.D	Injection Date:	03/09/21
Instrument ID:	OVGCMS2	Injection Time:	07:55
Sequence:	AA65289	Lab Sample ID:	AA65289-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	146	PASS
96	5 - 9% of 95	6.75	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	68.3	PASS
175	5 - 9% of 174	7.6	PASS
176	95 - 105% of 174	99.7	PASS
177	5 - 10% of 176	6.62	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	215CX002.D	Injection Date:	03/29/21
Instrument ID:	OVGCMS5	Injection Time:	08:34
Sequence:	AA65607	Lab Sample ID:	AA65607-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	156	PASS
96	5 - 9% of 95	6.92	PASS
173	Less than 2% of 174	0.308	PASS
174	50 - 200% of 95	64.2	PASS
175	5 - 9% of 174	8.93	PASS
176	95 - 105% of 174	95.1	PASS
177	5 - 10% of 176	7.13	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	212DV001.D	Injection Date:	04/27/21
Instrument ID:	OVGCMS2	Injection Time:	07:03
Sequence:	AA66113	Lab Sample ID:	AA66113-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	125	PASS
96	5 - 9% of 95	6.55	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	80.2	PASS
175	5 - 9% of 174	7.67	PASS
176	95 - 105% of 174	96.5	PASS
177	5 - 10% of 176	6.9	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	215DV001.D	Injection Date:	04/27/21
Instrument ID:	OVGCMS5	Injection Time:	07:40
Sequence:	AA66116	Lab Sample ID:	AA66116-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	172	PASS
96	5 - 9% of 95	6.69	PASS
173	Less than 2% of 174	0.738	PASS
174	50 - 200% of 95	58.2	PASS
175	5 - 9% of 174	6.42	PASS
176	95 - 105% of 174	95.5	PASS
177	5 - 10% of 176	5.96	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Lab File ID:	212DW001.D	Injection Date:	04/28/21
Instrument ID:	OVGCMS2	Injection Time:	07:13
Sequence:	AA66133	Lab Sample ID:	AA66133-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	122	PASS
96	5 - 9% of 95	6.7	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	81.9	PASS
175	5 - 9% of 174	7.29	PASS
176	95 - 105% of 174	95.3	PASS
177	5 - 10% of 176	6.3	PASS

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2103054
Lab File ID:	212DU002.D	Calibration Date:	03/10/21 08:57
Sequence:	AA66091	Injection Date:	04/26/21
Lab Sample ID:	AA66091-CCV1	Injection Time:	07:33

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	17	1.0726	0.9141206		-15	20	
Chloromethane	A	20.0	19	1.125442	1.056762		-6.1	20	
Vinyl chloride	A	20.0	20	0.871695	0.8742481		0.30	20	
Bromomethane	A	20.0	32	0.4216486	0.6369702		62	20	*
Chloroethane	A	20.0	20	0.4594287	0.464748		1.2	20	
Trichlorofluoromethane	A	20.0	17	0.8444659	0.7330916		-13	20	
Freon 113	A	50.0	46	0.5353971	0.4924664		-8	20	
Acetone	A	250	250	0.2098613	0.1918037		0.008	20	
1,1-Dichloroethene	A	50.0	44	0.492039	0.4314463		-12	20	
Carbon disulfide	A	250	250	1.675395	1.707831		1.9	20	
Methylene Chloride	A	50.0	50	0.6372904	0.6382479		0.20	20	
Methyl-tert-Butyl Ether	A	50.0	51	1.629343	1.674348		2.8	20	
trans-1,2-Dichloroethene	A	50.0	53	0.5294924	0.5595872		5.7	20	
cis-1,2-Dichloroethene	A	50.0	57	0.5730141	0.6477228		13	20	
1,1-Dichloroethane	A	50.0	50	1.11993	1.111895		-0.7	20	
2-Butanone	A	250	280	6.656362E-02	6.756527E-02		11	20	
Chloroform	A	50.0	53	1.034125	1.104948		6.8	20	
1,1,1-Trichloroethane	A	50.0	48	0.8170626	0.7893697		-3.4	20	
Methyl acetate	A	50.0	52	0.1098139	0.1132087		3.1	20	
Cyclohexane	A	50.0	47	0.9572176	0.9024749		-5.7	20	
Carbon Tetrachloride	A	50.0	49	0.4638802	0.4510399		-2.8	20	
1,2-Dichloroethane	A	50.0	51	0.4782864	0.4896302		2.4	20	
Benzene	A	50.0	62	1.177328	1.318609		23	20	*
Trichloroethene	A	50.0	59	0.3209742	0.3781246		18	20	
1,2-Dichloropropane	A	50.0	57	0.3667572	0.4169877		14	20	
Bromodichloromethane	A	50.0	60	0.4279118	0.5124588		20	20	
4-Methyl-2-pentanone	A	250	310	4.721789E-02	5.418378E-02		23	20	*
2-Hexanone	A	250	290	0.2679157	0.3111106		16	20	
cis-1,3-Dichloropropene	A	50.0	63	0.5858308	0.7367277		26	20	*

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2103054
Lab File ID:	212DU002.D	Calibration Date:	03/10/21 08:57
Sequence:	AA66091	Injection Date:	04/26/21
Lab Sample ID:	AA66091-CCV1	Injection Time:	07:33

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	50.0	54	1.382929	1.483818		7.3	20
trans-1,3-Dichloropropene	A	50.0	53	0.9949631	1.04863		5.4	20
1,1,2-Trichloroethane	A	50.0	51	0.5380963	0.5540837		3.0	20
Tetrachloroethene	A	50.0	59	0.4198975	0.4978199		19	20
Dibromochloromethane	A	50.0	48	0.7405405	0.7139522		-3.6	20
1,2-Dibromoethane	A	50.0	50	0.6605201	0.6544562		-0.9	20
Chlorobenzene	A	50.0	50	1.550303	1.558333		0.50	20
Ethylbenzene	A	50.0	51	0.7935253	0.8054892		1.5	20
m,p-Xylenes	A	100	100	0.9705429	0.9807151		1.0	20
o-Xylene	A	50.0	52	0.9559986	0.9961094		4.2	20
Bromoform	A	50.0	59	0.3849412	0.4569803		19	20
Styrene	A	50.0	51	1.637021	1.674098		2.3	20
Isopropylbenzene	A	50.0	51	2.395216	2.422131		1.1	20
1,1,2,2-Tetrachloroethane	A	50.0	56	0.6920671	0.7691709		11	20
1,2,4-Trichlorobenzene	A	50.0	50	0.6933419	0.6955595		0.30	20
1,3-Dichlorobenzene	A	50.0	49	1.398388	1.381124		-1.2	20
1,4-Dichlorobenzene	A	50.0	48	1.454236	1.402805		-3.5	20
1,2-Dichlorobenzene	A	50.0	50	1.33251	1.329892		-0.2	20
1,2-Dibromo-3-chloropropane	A	50.0	39	0.1676609	0.1270292		-23	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2103054
Lab File ID:	212DV002.D	Calibration Date:	03/10/21 08:57
Sequence:	AA66113	Injection Date:	04/27/21
Lab Sample ID:	AA66113-CCV1	Injection Time:	07:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	18	1.0726	0.9856346		-8.1	20	
Chloromethane	A	20.0	21	1.125442	1.193761		6.1	20	
Vinyl chloride	A	20.0	22	0.871695	0.9496504		8.9	20	
Bromomethane	A	20.0	34	0.4216486	0.6603153		71	20	*
Chloroethane	A	20.0	22	0.4594287	0.5047099		9.8	20	
Trichlorofluoromethane	A	20.0	19	0.8444659	0.8103811		-4	20	
Freon 113	A	50.0	47	0.5353971	0.501445		-6.3	20	
Acetone	A	250	300	0.2098613	0.230726		20	20	
1,1-Dichloroethene	A	50.0	45	0.492039	0.4416356		-10	20	
Carbon disulfide	A	250	360	1.675395	2.402424		43	20	*
Methylene Chloride	A	50.0	51	0.6372904	0.6558341		2.9	20	
Methyl-tert-Butyl Ether	A	50.0	54	1.629343	1.768895		8.6	20	
trans-1,2-Dichloroethene	A	50.0	55	0.5294924	0.577699		9.1	20	
cis-1,2-Dichloroethene	A	50.0	59	0.5730141	0.6707181		17	20	
1,1-Dichloroethane	A	50.0	51	1.11993	1.145639		2.3	20	
2-Butanone	A	250	340	6.656362E-02	8.161824E-02		34	20	*
Chloroform	A	50.0	56	1.034125	1.162314		12	20	
1,1,1-Trichloroethane	A	50.0	51	0.8170626	0.82572		1.1	20	
Methyl acetate	A	50.0	55	0.1098139	0.120095		9.4	20	
Cyclohexane	A	50.0	49	0.9572176	0.9367678		-2.1	20	
Carbon Tetrachloride	A	50.0	49	0.4638802	0.4559429		-1.7	20	
1,2-Dichloroethane	A	50.0	52	0.4782864	0.4959321		3.7	20	
Benzene	A	50.0	61	1.177328	1.316732		23	20	*
Trichloroethene	A	50.0	59	0.3209742	0.3788421		18	20	
1,2-Dichloropropane	A	50.0	57	0.3667572	0.4197841		15	20	
Bromodichloromethane	A	50.0	61	0.4279118	0.5191746		21	20	*
4-Methyl-2-pentanone	A	250	350	4.721789E-02	6.117874E-02		38	20	*
2-Hexanone	A	250	320	0.2679157	0.3446138		29	20	*
cis-1,3-Dichloropropene	A	50.0	63	0.5858308	0.74378		27	20	*

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2103054
Lab File ID:	212DV002.D	Calibration Date:	03/10/21 08:57
Sequence:	AA66113	Injection Date:	04/27/21
Lab Sample ID:	AA66113-CCV1	Injection Time:	07:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	52	1.382929	1.431713		3.5	20	
trans-1,3-Dichloropropene	A	50.0	52	0.9949631	1.031438		3.7	20	
1,1,2-Trichloroethane	A	50.0	50	0.5380963	0.5394488		0.30	20	
Tetrachloroethene	A	50.0	56	0.4198975	0.4744392		13	20	
Dibromochloromethane	A	50.0	46	0.7405405	0.6878769		-7.1	20	
1,2-Dibromoethane	A	50.0	49	0.6605201	0.6453675		-2.3	20	
Chlorobenzene	A	50.0	49	1.550303	1.514747		-2.3	20	
Ethylbenzene	A	50.0	49	0.7935253	0.7845731		-1.1	20	
m,p-Xylenes	A	100	99	0.9705429	0.9634264		-0.7	20	
o-Xylene	A	50.0	51	0.9559986	0.9797286		2.5	20	
Bromoform	A	50.0	57	0.3849412	0.4419479		15	20	
Styrene	A	50.0	50	1.637021	1.647845		0.70	20	
Isopropylbenzene	A	50.0	49	2.395216	2.361979		-1.4	20	
1,1,2,2-Tetrachloroethane	A	50.0	55	0.6920671	0.7595051		9.7	20	
1,2,4-Trichlorobenzene	A	50.0	49	0.6933419	0.6836855		-1.4	20	
1,3-Dichlorobenzene	A	50.0	48	1.398388	1.353287		-3.2	20	
1,4-Dichlorobenzene	A	50.0	47	1.454236	1.356527		-6.7	20	
1,2-Dichlorobenzene	A	50.0	48	1.33251	1.285193		-3.6	20	
1,2-Dibromo-3-chloropropane	A	50.0	38	0.1676609	0.1236681		-25	20	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2103152
Lab File ID:	215DV002.D	Calibration Date:	03/29/21 10:01
Sequence:	AA66116	Injection Date:	04/27/21
Lab Sample ID:	AA66116-CCV1	Injection Time:	08:07

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	50.0	51	0.600391	0.6121334		2.0	20	
Chloromethane	A	50.0	54	0.4244214	0.4528741		8.4	20	
Vinyl chloride	A	50.0	54	0.475417	0.5474926		8.9	20	
Bromomethane	A	50.0	63	0.321471	0.256529		26	20	*
Chloroethane	A	50.0	54	0.2811525	0.3072531		9.3	20	
Trichlorofluoromethane	A	50.0	55	0.7209338	0.799465		11	20	
Freon 113	A	50.0	45	0.3072171	0.2928479		-10	20	
Acetone	A	250	230	7.578281E-02	6.329594E-02		-7.6	20	
1,1-Dichloroethene	A	50.0	44	0.4063732	0.3586626		-12	20	
Carbon disulfide	A	250	270	1.280306	1.399254		9.3	20	
Methylene Chloride	A	50.0	52	0.4939431	0.4874421		4.9	20	
Methyl-tert-Butyl Ether	A	50.0	51	1.075203	1.11218		2.9	20	
trans-1,2-Dichloroethene	A	50.0	50	0.4652223	0.4803676		0.70	20	
cis-1,2-Dichloroethene	A	50.0	50	0.5330932	0.5405275		0.20	20	
1,1-Dichloroethane	A	50.0	54	0.8522977	0.8644282		7.7	20	
2-Butanone	A	250	240	4.459613E-02	4.233283E-02		-2	20	
Chloroform	A	50.0	49	0.9796291	0.9630524		-1.7	20	
1,1,1-Trichloroethane	A	50.0	54	0.8350756	0.893591		7.0	20	
Methyl acetate	A	50.0	52	0.1830469	0.1804913		3.5	20	
Cyclohexane	A	50.0	53	0.6820154	0.8022352		6.2	20	
Carbon Tetrachloride	A	50.0	60	0.3275477	0.3942638		20	20	
1,2-Dichloroethane	A	50.0	49	0.3574826	0.3467748		-1.1	20	
Benzene	A	50.0	51	1.035951	1.038071		1.4	20	
Trichloroethene	A	50.0	51	0.2658801	0.2622388		2.4	20	
1,2-Dichloropropane	A	50.0	54	0.2335995	0.2565056		8.4	20	
Bromodichloromethane	A	50.0	53	0.3298445	0.348346		5.6	20	
4-Methyl-2-pentanone	A	250	240	2.917424E-02	2.810226E-02		-3.7	20	
2-Hexanone	A	250	250	8.667994E-02	9.608519E-02		0.040	20	
cis-1,3-Dichloropropene	A	50.0	53	0.4170591	0.4633046		5.4	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2103152
Lab File ID:	215DV002.D	Calibration Date:	03/29/21 10:01
Sequence:	AA66116	Injection Date:	04/27/21
Lab Sample ID:	AA66116-CCV1	Injection Time:	08:07

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Toluene	A	50.0	53	1.127943	1.151694		5.1	20
trans-1,3-Dichloropropene	A	50.0	48	0.6050858	0.5871668		-3.2	20
1,1,2-Trichloroethane	A	50.0	49	0.3573679	0.3491232		-2.3	20
Tetrachloroethene	A	50.0	49	0.3125282	0.307826		-1.5	20
Dibromochloromethane	A	50.0	46	0.3816133	0.3530161		-8	20
1,2-Dibromoethane	A	50.0	48	0.3637641	0.34554		-5	20
Chlorobenzene	A	50.0	50	1.293752	1.170561		0.20	20
Ethylbenzene	A	50.0	50	0.6783623	0.674823		-0.6	20
m,p-Xylenes	A	100	100	0.8802171	0.8843984		0.50	20
o-Xylene	A	50.0	52	0.8323709	0.8602791		3.4	20
Bromoform	A	50.0	44	0.1964488	0.1703888		-12	20
Styrene	A	50.0	54	1.345938	1.444362		7.3	20
Isopropylbenzene	A	50.0	52	2.102019	2.197513		4.5	20
1,1,2,2-Tetrachloroethane	A	50.0	48	0.5133695	0.4650041		-3.2	20
1,2,4-Trichlorobenzene	A	50.0	44	0.2073698	0.1981545		-12	20
1,3-Dichlorobenzene	A	50.0	47	1.050062	1.042392		-6.8	20
1,4-Dichlorobenzene	A	50.0	47	1.134108	1.04626		-6.9	20
1,2-Dichlorobenzene	A	50.0	49	0.9633823	0.93864		-2.8	20
1,2-Dibromo-3-chloropropane	A	50.0	41	6.197711E-02	5.325365E-02		-18	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2103054
Lab File ID:	212DW002.D	Calibration Date:	03/10/21 08:57
Sequence:	AA66133	Injection Date:	04/28/21
Lab Sample ID:	AA66133-CCV1	Injection Time:	07:45

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	17	1.0726	0.9210798		-14	20	
Chloromethane	A	20.0	20	1.125442	1.150636		2.2	20	
Vinyl chloride	A	20.0	21	0.871695	0.900099		3.3	20	
Bromomethane	A	20.0	30	0.4216486	0.6063048		51	20	*
Chloroethane	A	20.0	21	0.4594287	0.4792615		4.3	20	
Trichlorofluoromethane	A	20.0	18	0.8444659	0.7520854		-11	20	
Freon 113	A	50.0	41	0.5353971	0.4426357		-17	20	
Acetone	A	250	250	0.2098613	0.1913465		-0.2	20	
1,1-Dichloroethene	A	50.0	40	0.492039	0.3934993		-20	20	
Carbon disulfide	A	250	300	1.675395	2.014787		20	20	
Methylene Chloride	A	50.0	46	0.6372904	0.5834639		-8.4	20	
Methyl-tert-Butyl Ether	A	50.0	47	1.629343	1.536063		-5.7	20	
trans-1,2-Dichloroethene	A	50.0	48	0.5294924	0.5118765		-3.3	20	
cis-1,2-Dichloroethene	A	50.0	53	0.5730141	0.6019885		5.1	20	
1,1-Dichloroethane	A	50.0	46	1.11993	1.036695		-7.4	20	
2-Butanone	A	250	270	6.656362E-02	6.624705E-02		8.9	20	
Chloroform	A	50.0	50	1.034125	1.04245		0.80	20	
1,1,1-Trichloroethane	A	50.0	45	0.8170626	0.738587		-9.6	20	
Methyl acetate	A	50.0	48	0.1098139	0.1060246		-3.5	20	
Cyclohexane	A	50.0	43	0.9572176	0.8307002		-13	20	
Carbon Tetrachloride	A	50.0	47	0.4638802	0.4317989		-6.9	20	
1,2-Dichloroethane	A	50.0	50	0.4782864	0.4770721		-0.3	20	
Benzene	A	50.0	58	1.177328	1.249284		17	20	
Trichloroethene	A	50.0	56	0.3209742	0.3598129		12	20	
1,2-Dichloropropane	A	50.0	54	0.3667572	0.3975521		8.4	20	
Bromodichloromethane	A	50.0	58	0.4279118	0.492995		15	20	
4-Methyl-2-pentanone	A	250	300	4.721789E-02	0.0531721		20	20	
2-Hexanone	A	250	290	0.2679157	0.3055771		14	20	
cis-1,3-Dichloropropene	A	50.0	61	0.5858308	0.7122087		22	20	*

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS2	Calibration:	2103054
Lab File ID:	212DW002.D	Calibration Date:	03/10/21 08:57
Sequence:	AA66133	Injection Date:	04/28/21
Lab Sample ID:	AA66133-CCV1	Injection Time:	07:45

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	53	1.382929	1.460395		5.6	20	
trans-1,3-Dichloropropene	A	50.0	52	0.9949631	1.040519		4.6	20	
1,1,2-Trichloroethane	A	50.0	51	0.5380963	0.5474311		1.7	20	
Tetrachloroethene	A	50.0	58	0.4198975	0.482982		15	20	
Dibromochloromethane	A	50.0	48	0.7405405	0.7049149		-4.8	20	
1,2-Dibromoethane	A	50.0	49	0.6605201	0.6499548		-1.6	20	
Chlorobenzene	A	50.0	50	1.550303	1.544178		-0.4	20	
Ethylbenzene	A	50.0	50	0.7935253	0.7967846		0.40	20	
m,p-Xylenes	A	100	100	0.9705429	0.9801472		1.0	20	
o-Xylene	A	50.0	52	0.9559986	0.9852252		3.1	20	
Bromoform	A	50.0	58	0.3849412	0.4491516		17	20	
Styrene	A	50.0	51	1.637021	1.677714		2.5	20	
Isopropylbenzene	A	50.0	50	2.395216	2.406878		0.50	20	
1,1,2,2-Tetrachloroethane	A	50.0	56	0.6920671	0.7746681		12	20	
1,2,4-Trichlorobenzene	A	50.0	51	0.6933419	0.7049687		1.7	20	
1,3-Dichlorobenzene	A	50.0	51	1.398388	1.438133		2.8	20	
1,4-Dichlorobenzene	A	50.0	49	1.454236	1.432109		-1.5	20	
1,2-Dichlorobenzene	A	50.0	52	1.33251	1.37463		3.2	20	
1,2-Dibromo-3-chloropropane	A	50.0	39	0.1676609	0.1291998		-21	20	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2103152
Lab File ID:	215DW003.D	Calibration Date:	03/29/21 10:01
Sequence:	AA66142	Injection Date:	04/28/21
Lab Sample ID:	AA66142-CCV1	Injection Time:	08:52

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	50.0	50	0.600391	0.5947186		-0.9	20	
Chloromethane	A	50.0	64	0.4244214	0.5685841		27	20	*
Vinyl chloride	A	50.0	56	0.475417	0.5684072		12	20	
Bromomethane	A	50.0	56	0.321471	0.2233654		12	20	
Chloroethane	A	50.0	63	0.2811525	0.3569788		27	20	*
Trichlorofluoromethane	A	50.0	59	0.7209338	0.8477496		18	20	
Freon 113	A	50.0	46	0.3072171	0.3010636		-7.7	20	
Acetone	A	250	290	7.578281E-02	8.760912E-02		18	20	
1,1-Dichloroethene	A	50.0	52	0.4063732	0.4242697		4.4	20	
Carbon disulfide	A	250	320	1.280306	1.621204		27	20	*
Methylene Chloride	A	50.0	57	0.4939431	0.5338364		13	20	
Methyl-tert-Butyl Ether	A	50.0	57	1.075203	1.25927		13	20	
trans-1,2-Dichloroethene	A	50.0	53	0.4652223	0.5110274		6.2	20	
cis-1,2-Dichloroethene	A	50.0	55	0.5330932	0.6084258		11	20	
1,1-Dichloroethane	A	50.0	63	0.8522977	1.044212		25	20	*
2-Butanone	A	250	300	4.459613E-02	5.608657E-02		22	20	*
Chloroform	A	50.0	53	0.9796291	1.045323		6.7	20	
1,1,1-Trichloroethane	A	50.0	51	0.8350756	0.8520554		2.0	20	
Methyl acetate	A	50.0	60	0.1830469	0.2294067		21	20	*
Cyclohexane	A	50.0	59	0.6820154	0.9196105		18	20	
Carbon Tetrachloride	A	50.0	55	0.3275477	0.3574712		9.1	20	
1,2-Dichloroethane	A	50.0	49	0.3574826	0.3439086		-1.9	20	
Benzene	A	50.0	54	1.035951	1.095802		7.1	20	
Trichloroethene	A	50.0	51	0.2658801	0.2618269		2.3	20	
1,2-Dichloropropane	A	50.0	55	0.2335995	0.2633428		11	20	
Bromodichloromethane	A	50.0	49	0.3298445	0.3246815		-1.6	20	
4-Methyl-2-pentanone	A	250	280	2.917424E-02	3.302913E-02		13	20	
2-Hexanone	A	250	290	8.667994E-02	0.1181345		16	20	
cis-1,3-Dichloropropene	A	50.0	52	0.4170591	0.4599795		4.7	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Instrument ID:	OVGCMS5	Calibration:	2103152
Lab File ID:	215DW003.D	Calibration Date:	03/29/21 10:01
Sequence:	AA66142	Injection Date:	04/28/21
Lab Sample ID:	AA66142-CCV1	Injection Time:	08:52

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Toluene	A	50.0	49	1.127943	1.073411		-2	20	
trans-1,3-Dichloropropene	A	50.0	50	0.6050858	0.6016326		-0.8	20	
1,1,2-Trichloroethane	A	50.0	50	0.3573679	0.3573376		0.040	20	
Tetrachloroethene	A	50.0	45	0.3125282	0.2797814		-11	20	
Dibromochloromethane	A	50.0	45	0.3816133	0.3472915		-9.5	20	
1,2-Dibromoethane	A	50.0	47	0.3637641	0.3414974		-6.1	20	
Chlorobenzene	A	50.0	50	1.293752	1.179012		0.90	20	
Ethylbenzene	A	50.0	50	0.6783623	0.6831724		0.60	20	
m,p-Xylenes	A	100	94	0.8802171	0.8314372		-5.5	20	
o-Xylene	A	50.0	48	0.8323709	0.8006313		-3.8	20	
Bromoform	A	50.0	38	0.1964488	0.1468477		-24	20	*
Styrene	A	50.0	49	1.345938	1.309164		-2.7	20	
Isopropylbenzene	A	50.0	48	2.102019	2.022931		-3.8	20	
1,1,2,2-Tetrachloroethane	A	50.0	45	0.5133695	0.430394		-10	20	
1,2,4-Trichlorobenzene	A	50.0	56	0.2073698	0.2784702		13	20	
1,3-Dichlorobenzene	A	50.0	48	1.050062	1.071532		-4.2	20	
1,4-Dichlorobenzene	A	50.0	50	1.134108	1.132622		0.70	20	
1,2-Dichlorobenzene	A	50.0	51	0.9633823	0.9837237		1.5	20	
1,2-Dibromo-3-chloropropane	A	50.0	44	6.197711E-02	5.846491E-02		-11	20	

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA65289	Instrument:	OVGCMS2
Calibration:	2103054		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A0I0903	MS Tune	AA65289-TUN1	212CD001.D	03/09/21 07:55
A1C0778	8260 Calibration 1.0 PPB	AA65289-CAL1	212CD002.D	03/09/21 08:30
A1C0779	8260 Calibration 2.0 PPB	AA65289-CAL2	212CD003.D	03/09/21 08:59
A1C0780	8260 Calibration 5.0 PPB	AA65289-CAL3	212CD004.D	03/09/21 09:27
A1C0781	8260 Calibration 10 PPB	AA65289-CAL4	212CD005.D	03/09/21 09:56
A1C0782	8260 Calibration 20 PPB	AA65289-CAL5	212CD006.D	03/09/21 10:25
A1C0783	8260 Calibration 50 PPB	AA65289-CAL6	212CD007.D	03/09/21 10:53
A1C0784	8260 Calibration 80 PPB	AA65289-CAL7	212CD008.D	03/09/21 11:22
A1C0785	8260 Calibration 100 PPB	AA65289-CAL8	212CD009.D	03/09/21 11:50
A1C0786	8260 SCV 50 PPB/20 Gases	AA65289-SCV1	212CD013.D	03/09/21 14:04

INITIAL CALIBRATION STANDARDS

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE02766-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN SWMU 090
Sequence:	AA65607	Instrument:	OVGCMS5
Calibration:	2103152		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A1B1159	MS Tune (lower conc.)	AA65607-TUN1	215CX002.D	03/29/21 08:34
A1C1259	8260 1 PPB	AA65607-CAL1	215CX003.D	03/29/21 09:08
A1C1260	8260 2 PPB	AA65607-CAL2	215CX004.D	03/29/21 09:36
A1C1261	8260 5 PPB	AA65607-CAL3	215CX005.D	03/29/21 10:04
A1C1262	8260 10 PPB	AA65607-CAL4	215CX006.D	03/29/21 10:31
A1C1263	8260 20 PPB	AA65607-CAL5	215CX007.D	03/29/21 10:59
A1C1264	8260 50 PPB	AA65607-CAL6	215CX008.D	03/29/21 11:27
A1C1265	8260 80 PPB	AA65607-CAL7	215CX009.D	03/29/21 11:55
A1C1266	8260 100 PPB	AA65607-CAL8	215CX010.D	03/29/21 12:22
A1C1212	8260 SCV 50 PPB	AA65607-SCV1	215CX012.D	03/29/21 13:33

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103054
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 03/10/21 08:57

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	0.9629509	2	1.00115	5	0.9130478	10	0.9351326	20	1.143952	50	1.135256
Chloromethane	1	1.218475	2	1.166378	5	1.020541	10	0.977044	20	1.141262	50	1.093927
Vinyl chloride	1	0.7831949	2	0.8310802	5	0.7680407	10	0.7799153	20	0.924546	50	0.9082744
Bromomethane	1	0.4855345	2	0.5247368	5	0.4775856	10	0.4689483	20	0.4404474	50	0.329613
Chloroethane	1	0.528444	2	0.4736466	5	0.4094507	10	0.4309886	20	0.464119	50	0.4424994
Trichlorofluoromethane	1	0.7571013	2	0.7682304	5	0.7569387	10	0.773343	20	0.9107586	50	0.8884645
Freon 113	1	0.5095019	2	0.5238474	5	0.4960221	10	0.4951967	20	0.5375287	50	0.5569136
Acetone	5	0.2865658	10	0.2420706	25	0.2098635	50	0.1748565	100	0.1906963	250	0.1898775
1,1-Dichloroethene	1	0.5052496	2	0.5066526	5	0.4470051	10	0.4257881	20	0.4741616	50	0.5130383
Carbon disulfide	5	1.604545	10	1.478097	25	1.434809	50	1.684823	100	1.766817	250	1.783578
Methylene Chloride	1	0.7313943	2	0.6639748	5	0.5697681	10	0.6298371	20	0.6457918	50	0.6253248
Methyl-tert-Butyl Ether	1	1.692219	2	1.743589	5	1.519288	10	1.4515	20	1.605888	50	1.652303
trans-1,2-Dichloroethene	1	0.5549242	2	0.5545805	5	0.4825955	10	0.4601443	20	0.5098801	50	0.5331158
cis-1,2-Dichloroethene	1	0.5491256	2	0.5892665	5	0.5344983	10	0.5027518	20	0.5582572	50	0.5942978
1,1-Dichloroethane	1	1.280713	2	1.21816	5	1.08567	10	0.9896563	20	1.077779	50	1.087997
2-Butanone	5	7.661858E-02	10	9.215998E-02	25	6.869602E-02	50	5.517473E-02	100	5.833319E-02	250	5.888253E-02
Chloroform	1	1.055342	2	1.133669	5	0.9757319	10	0.918794	20	1.014148	50	1.017747
1,1,1-Trichloroethane	1	0.8206924	2	0.8531172	5	0.7725697	10	0.7257193	20	0.7969784	50	0.828478
Methyl acetate	1	0.1266023	2	0.1356805	5	0.1047674	10	9.784772E-02	20	9.921221E-02	50	0.102088
Cyclohexane	1	0.9718421	2	0.9865248	5	0.9136089	10	0.8608306	20	0.9439559	50	0.9671388
Carbon Tetrachloride	1	0.4693766	2	0.4823455	5	0.4463815	10	0.4293764	20	0.4484988	50	0.4707247
1,2-Dichloroethane	1	0.49566	2	0.544351	5	0.4632916	10	0.4320281	20	0.460018	50	0.4697415
Benzene	1	1.574153	2	1.399847	5	1.148849	10	1.023984	20	1.057862	50	1.064724
Trichloroethene	1	0.3158381	2	0.3365851	5	0.3050131	10	0.2902344	20	0.3088552	50	0.327305
1,2-Dichloropropane	1	0.4654341	2	0.3979197	5	0.3542553	10	0.3214417	20	0.3365832	50	0.3523757
Bromodichloromethane	1	0.4583157	2	0.446786	5	0.4029338	10	0.3869483	20	0.4193806	50	0.4279179
4-Methyl-2-pentanone	5	6.124018E-02	10	5.602297E-02	25	0.045292	50	0.0415087	100	4.095342E-02	250	4.409484E-02
2-Hexanone	5	0.2715288	10	0.3137622	25	0.2659034	50	0.2507961	100	0.2534477	250	0.2628961
cis-1,3-Dichloropropene	1	0.6047358	2	0.6238566	5	0.5429268	10	0.5238322	20	0.5713625	50	0.6005754
Toluene	1	1.402892	2	1.460348	5	1.337111	10	1.220114	20	1.333804	50	1.417909
trans-1,3-Dichloropropene	1	0.9725595	2	1.063622	5	0.9537202	10	0.8917849	20	0.9930434	50	1.017975

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103054
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 03/10/21 08:57

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	1	0.5631086	2	0.5902566	5	0.504149	10	0.4915265	20	0.5228565	50	0.5465517
Tetrachloroethene	1	0.3992374	2	0.4373198	5	0.3966177	10	0.3935136	20	0.4211542	50	0.4276677
Dibromochloromethane	1	0.6797703	2	0.7931111	5	0.7216715	10	0.6373902	20	0.7296715	50	0.7748404
1,2-Dibromoethane	1	0.660705	2	0.7008942	5	0.6155324	10	0.5821577	20	0.6495998	50	0.6778992
Chlorobenzene	1	1.636896	2	1.693107	5	1.465991	10	1.383689	20	1.511416	50	1.544965
Ethylbenzene	1	0.7800903	2	0.8283605	5	0.7558291	10	0.707268	20	0.7802424	50	0.8101387
m,p-Xylenes	2	0.9854967	4	1.008019	10	0.9411896	20	0.8773283	40	0.9404274	100	0.9805163
o-Xylene	1	0.8624799	2	0.9894843	5	0.9094917	10	0.8640508	20	0.950414	50	0.9956992
Bromoform	1	0.3665539	2	0.376941	5	0.3603716	10	0.3450732	20	0.3851428	50	0.4018968
Styrene	1	1.65528	2	1.688787	5	1.520012	10	1.433898	20	1.618377	50	1.683169
Isopropylbenzene	1	2.361833	2	2.459042	5	2.266234	10	2.135364	20	2.351638	50	2.476129
1,1,2,2-Tetrachloroethane	1	0.7374203	2	0.7504707	5	0.6396191	10	0.6174857	20	0.6664488	50	0.7033133
1,2,4-Trichlorobenzene	1	0.6755302	2	0.64151	5	0.6263674	10	0.6048392	20	0.683242	50	0.7261299
1,3-Dichlorobenzene	1	1.413105	2	1.435084	5	1.271424	10	1.261615	20	1.355599	50	1.435628
1,4-Dichlorobenzene	1	1.567901	2	1.517829	5	1.405755	10	1.288807	20	1.371389	50	1.446464
1,2-Dichlorobenzene	1	1.303261	2	1.371542	5	1.211721	10	1.177105	20	1.299253	50	1.387116
1,2-Dibromo-3-chloropropane	1	0.212409	2	0.2065509	5	0.154168	10	0.1373155	20	0.1453144	50	0.1527023
Dibromofluoromethane	50	0.548855	55	0.5608799	60	0.5543643	50	0.5496016	65	0.5539103	50	0.5533358
Toluene-d8	50	0.9346092	55	0.9465188	60	0.9424974	50	0.9553555	65	0.934185	50	0.9392933
4-Bromofluorobenzene	50	0.8534919	55	0.85705	60	0.8490276	50	0.8645696	65	0.8573421	50	0.8856145

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103054
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 03/10/21 08:57

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	80	1.232381	100	1.256932								
Chloromethane	80	1.163767	100	1.222139								
Vinyl chloride	80	0.9791373	100	0.9993708								
Bromomethane	80	0.2246743	100	~~0.1871663~~								
Chloroethane	80	0.4667161	100	0.4595652								
Trichlorofluoromethane	80	0.9518414	100	0.9490496								
Freon 113	80	0.5854884	100	0.5786782								
Acetone	400	0.1939092	500	0.1910513								
1,1-Dichloroethene	80	0.535717	100	0.5287								
Carbon disulfide	400	1.852588	500	1.797904								
Methylene Chloride	80	0.6246768	100	0.6075552								
Methyl-tert-Butyl Ether	80	1.705031	100	1.664927								
trans-1,2-Dichloroethene	80	0.5679302	100	0.5727682								
cis-1,2-Dichloroethene	80	0.6332128	100	0.6227026								
1,1-Dichloroethane	80	1.123556	100	1.095906								
2-Butanone	400	6.190635E-02	500	0.0607376								
Chloroform	80	1.08207	100	1.075495								
1,1,1-Trichloroethane	80	0.874716	100	0.8642298								
Methyl acetate	80	0.1070014	100	0.1053113								
Cyclohexane	80	1.021414	100	0.9924252								
Carbon Tetrachloride	80	0.4847605	100	0.4795778								
1,2-Dichloroethane	80	0.4831183	100	0.4780825								
Benzene	80	1.085549	100	1.063654								
Trichloroethene	80	0.3415202	100	0.3424428								
1,2-Dichloropropane	80	0.3541874	100	0.3518603								
Bromodichloromethane	80	0.4406068	100	0.4404055								
4-Methyl-2-pentanone	400	0.0443242	500	0.0443068								
2-Hexanone	400	0.2636715	500	0.26132								
cis-1,3-Dichloropropene	80	0.6136402	100	0.6057173								
Toluene	80	1.458214	100	1.433042								
trans-1,3-Dichloropropene	80	1.039968	100	1.027032								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103054
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 03/10/21 08:57

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	80	0.5449611	100	0.5413604								
Tetrachloroethene	80	0.4422631	100	0.4414063								
Dibromochloromethane	80	0.7952009	100	0.7926685								
1,2-Dibromoethane	80	0.7030185	100	0.6943545								
Chlorobenzene	80	1.597327	100	1.569035								
Ethylbenzene	80	0.8495578	100	0.836716								
m,p-Xylenes	160	1.0277	200	1.003666								
o-Xylene	80	1.04198	100	1.034389								
Bromoform	80	0.4259642	100	0.4175864								
Styrene	80	1.754819	100	1.741829								
Isopropylbenzene	80	2.570765	100	2.54072								
1,1,2,2-Tetrachloroethane	80	0.7186047	100	0.7031744								
1,2,4-Trichlorobenzene	80	0.7855318	100	0.8035843								
1,3-Dichlorobenzene	80	1.512372	100	1.502279								
1,4-Dichlorobenzene	80	1.521959	100	1.513784								
1,2-Dichlorobenzene	80	1.455057	100	1.455029								
1,2-Dibromo-3-chloropropane	80	0.1656948	100	0.1671324								
Dibromofluoromethane	70	0.5717455	75	0.5773826								
Toluene-d8	70	0.9384964	75	0.9464445								
4-Bromofluorobenzene	70	0.8628971	75	0.8715379								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Calibration: 2103054
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 03/10/21 08:57

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	1.0726	12.70566	5.88125	6.074623E-02	0.9973265		0.99	
Chloromethane	1.125442	7.90604	6.3475	7.247758E-02			20	
Vinyl chloride	0.871695	10.67617	6.545	0.0823081			20	
Bromomethane	0.4216486	25.19187	7.194286	0.2101729		0.999951	0.99	
Chloroethane	0.4594287	7.644151	7.41625	0.160176	0.9994555		0.99	
Trichlorofluoromethane	0.8444659	10.49299	7.68375	0.1189745			20	
Freon 113	0.5353971	6.630047	8.50875	4.331832E-02			20	
Acetone	0.2098613	17.57383	9.22375	5.911442E-02	0.9997398		0.99	
1,1-Dichloroethene	0.492039	7.989483	8.47	9.018307E-02			20	
Carbon disulfide	1.675395	9.257298	8.58625	6.056953E-02			20	
Methylene Chloride	0.6372904	7.369772	9.18375	5.802199E-02			20	
Methyl-tert-Butyl Ether	1.629343	6.085416	9.50625	7.749071E-02			20	
trans-1,2-Dichloroethene	0.5294924	7.8302	9.415	7.998514E-02			20	
cis-1,2-Dichloroethene	0.5730141	7.809786	10.65	1.055785E-02			20	
1,1-Dichloroethane	1.11993	8.059711	10.08875	6.528508E-02			20	
2-Butanone	6.656362E-02	18.59918	11.155	6.816518E-02	0.9992668		0.99	
Chloroform	1.034125	6.512295	10.86625	4.746036E-02			20	
1,1,1-Trichloroethane	0.8170626	6.157609	11.16375	4.279369E-02			20	
Methyl acetate	0.1098139	12.50422	9.36875	9.042621E-02			20	
Cyclohexane	0.9572176	5.282833	10.9325	4.156259E-02			20	
Carbon Tetrachloride	0.4638802	4.337352	11.1275	3.876405E-02			20	
1,2-Dichloroethane	0.4782864	6.826013	11.6475	6.000561E-02			20	
Benzene	1.177328	16.97569	11.505	4.517505E-02	0.9997383		0.99	
Trichloroethene	0.3209742	5.934409	12.01875	2.655112E-02			20	
1,2-Dichloropropane	0.3667572	12.37323	12.46625	3.825721E-02			20	
Bromodichloromethane	0.4279118	5.567148	12.48625	5.670444E-02			20	
4-Methyl-2-pentanone	4.721789E-02	15.52791	13.48875	4.481918E-02	0.9997048		0.99	
2-Hexanone	0.2679157	7.341542	14.19125	7.085091E-02			20	
cis-1,3-Dichloropropene	0.5858308	6.149003	13.03	4.463944E-02			20	
Toluene	1.382929	5.913577	13.26125	2.659049E-02			20	

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103054
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 03/10/21 08:57

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
trans-1,3-Dichloropropene	0.9949631	5.524546	13.55125	2.941279E-02			20	
1,1,2-Trichloroethane	0.5380963	5.888949	13.70375	3.200149E-02			20	
Tetrachloroethene	0.4198975	4.924694	13.6375	3.135631E-02			20	
Dibromochloromethane	0.7405405	7.981106	13.9025	3.514839E-02			20	
1,2-Dibromoethane	0.6605201	6.566072	14.15875	4.622794E-02			20	
Chlorobenzene	1.550303	6.30415	14.6075	2.830057E-02			20	
Ethylbenzene	0.7935253	5.970608	14.565	3.673003E-02			20	
m,p-Xylenes	0.9705429	5.009833	14.68	1.011355E-02			20	
o-Xylene	0.9559986	7.462735	15.09875	4.087533E-02			20	
Bromoform	0.3849412	7.36823	15.23125	5.294235E-02			20	
Styrene	1.637021	6.743335	15.13875	1.643833E-02			20	
Isopropylbenzene	2.395216	6.107116	15.365	3.572018E-02			20	
1,1,2,2-Tetrachloroethane	0.6920671	6.775523	15.805	3.237499E-02			20	
1,2,4-Trichlorobenzene	0.6933419	10.50731	19.93125	5.589857E-02			20	
1,3-Dichlorobenzene	1.398388	6.805273	16.87875	0.0307369			20	
1,4-Dichlorobenzene	1.454236	6.457885	16.97375	2.211872E-02			20	
1,2-Dichlorobenzene	1.33251	7.780255	17.54125	2.676335E-02			20	
1,2-Dibromo-3-chloropropane	0.1676609	16.48136	18.65125	5.267157E-02	0.9977345		0.99	
Dibromofluoromethane	0.5587594	1.882086	11.05	1.757405E-02			20	
Toluene-d8	0.942175	0.7546022	13.21375	3.949602E-02			20	
4-Bromofluorobenzene	0.8626913	1.34262	15.70875	2.732772E-02			20	

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103152
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 03/29/21 10:01

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	0.5636313	2	0.5801278	5	0.5460993	10	0.5570794	20	0.636704	50	0.6088576
Chloromethane	1	0.3904892	2	0.4512711	5	0.3929706	10	0.3400572	20	0.3658162	50	0.3993615
Vinyl chloride	1	0.4400433	2	0.4435386	5	0.4080058	10	0.402921	20	0.4835844	50	0.4956752
Bromomethane	1	0.7528209	2	0.4619763	5	0.314335	10	0.2163557	20	0.1904735	50	0.1949157
Chloroethane	1	0.3468786	2	0.3012864	5	0.2632691	10	0.2336389	20	0.2908101	50	0.272194
Trichlorofluoromethane	1	0.7431256	2	0.6788069	5	0.6706459	10	0.613503	20	0.7225394	50	0.7334458
Freon 113	1	0.4135575	2	0.2550041	5	0.3013557	10	0.2408218	20	0.2835279	50	0.2973221
Acetone	5	8.187197E-02	10	7.931957E-02	25	6.701856E-02	50	6.816149E-02	100	6.305972E-02	250	0.0677596
1,1-Dichloroethene	1	0.433394	2	0.3780849	5	0.3756648	10	0.3381605	20	0.3595958	50	0.415104
Carbon disulfide	5	1.264811	10	1.386896	25	1.219903	50	1.162957	100	1.230271	250	1.239936
Methylene Chloride	1	0.7078731	2	0.4474331	5	0.4916045	10	0.3786035	20	0.4051524	50	0.4630113
Methyl-tert-Butyl Ether	1	1.210881	2	0.8127434	5	1.071027	10	0.8742929	20	0.9574163	50	1.065014
trans-1,2-Dichloroethene	1	0.6204291	2	0.353608	5	0.4145491	10	0.3681566	20	0.406449	50	0.4759716
cis-1,2-Dichloroethene	1	0.6426058	2	0.4339435	5	0.537784	10	0.4170431	20	0.444591	50	0.5530533
1,1-Dichloroethane	1	1.156163	2	0.7471392	5	0.9096439	10	0.6434495	20	0.7149031	50	0.7900843
2-Butanone	5	7.372935E-02	10	3.084733E-02	25	2.225821E-02	50	3.947022E-02	100	4.173491E-02	250	0.0418865
Chloroform	1	1.182389	2	0.9533211	5	1.03149	10	0.7988	20	0.8516381	50	0.9577281
1,1,1-Trichloroethane	1	1.024143	2	0.7564709	5	0.8482451	10	0.6743254	20	0.7800076	50	0.8462504
Methyl acetate	1	0.1034915	2	0.2288716	5	0.2004819	10	0.1448237	20	0.136992	50	0.1702217
Cyclohexane	1	0.6317217	2	0.5332811	5	0.623239	10	0.5090003	20	0.5954918	50	0.7479228
Carbon Tetrachloride	1	0.4204065	2	0.3121696	5	0.3241347	10	0.2761959	20	0.2999888	50	0.3159037
1,2-Dichloroethane	1	0.4957218	2	0.3440455	5	0.373222	10	0.2865318	20	0.3153218	50	0.3369659
Benzene	1	1.454509	2	0.9483677	5	1.096594	10	0.8289047	20	0.9209039	50	0.9526986
Trichloroethene	1	0.3942391	2	0.2458069	5	0.2588026	10	0.2119676	20	0.2437438	50	0.2552052
1,2-Dichloropropane	1	0.335204	2	0.1787843	5	0.2107469	10	0.1828582	20	0.2033495	50	0.2289944
Bromodichloromethane	1	0.4013233	2	0.2655273	5	0.3249085	10	0.272832	20	0.3172226	50	0.3318762
4-Methyl-2-pentanone	5	0.0338391	10	2.817856E-02	25	2.668511E-02	50	2.600678E-02	100	2.438611E-02	250	2.885583E-02
2-Hexanone	5	6.541662E-02	10	8.636809E-02	25	6.798944E-02	50	7.038793E-02	100	8.113817E-02	250	9.054084E-02
cis-1,3-Dichloropropene	1	0.4919013	2	0.3723732	5	0.3891483	10	0.3260923	20	0.3698865	50	0.437641
Toluene	1	1.458111	2	1.149715	5	1.193065	10	0.8834761	20	1.032294	50	1.100134
trans-1,3-Dichloropropene	1	0.840399	2	0.5720856	5	0.5750465	10	0.504949	20	0.5256353	50	0.6018926

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103152
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 03/29/21 10:01

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	1	0.4513323	2	0.2547853	5	0.4162782	10	0.3096016	20	0.3597173	50	0.3490595
Tetrachloroethene	1	0.365569	2	0.3554576	5	0.314273	10	0.2587679	20	0.3070576	50	0.3241098
Dibromochloromethane	1	0.4716812	2	0.3102045	5	0.4375964	10	0.3258797	20	0.3541765	50	0.3824215
1,2-Dibromoethane	1	0.4387708	2	0.3586473	5	0.3689372	10	0.2999031	20	0.3370441	50	0.3582728
Chlorobenzene	1	1.833601	2	1.295077	5	1.373744	10	1.081635	20	1.214166	50	1.219805
Ethylbenzene	1	0.93053	2	0.5580986	5	0.6967579	10	0.5525296	20	0.6391454	50	0.6791764
m,p-Xylenes	2	1.072989	4	0.8208326	10	0.9527972	20	0.807763	40	0.8545083	100	0.8750837
o-Xylene	1	0.9411954	2	0.7701553	5	0.8889708	10	0.6851538	20	0.7981081	50	0.868059
Bromoform	1	0.3205035	2	0.1758269	5	0.1833566	10	0.146046	20	0.1684555	50	0.1878294
Styrene	1	1.487094	2	1.046109	5	1.409077	10	1.099727	20	1.328516	50	1.457253
Isopropylbenzene	1	2.341781	2	1.835419	5	2.153801	10	1.853099	20	2.074685	50	2.222369
1,1,2,2-Tetrachloroethane	1	0.809554	2	0.4523603	5	0.5141316	10	0.4289736	20	0.4648624	50	0.4711976
1,2,4-Trichlorobenzene	1	0.2043288	2	0.1136118	5	0.1622284	10	0.1289087	20	0.2048823	50	0.2394869
1,3-Dichlorobenzene	1	1.36328	2	0.8165931	5	1.040748	10	0.8252575	20	1.007336	50	1.103188
1,4-Dichlorobenzene	1	1.475947	2	1.10785	5	1.17649	10	0.9221026	20	1.026318	50	1.11428
1,2-Dichlorobenzene	1	1.282155	2	0.7220682	5	0.952123	10	0.8206701	20	0.8868259	50	0.9917602
1,2-Dibromo-3-chloropropane	1	0.0884976	2	3.812329E-02	5	4.714925E-02	10	4.737875E-02	20	5.394453E-02	50	6.657284E-02
Dibromofluoromethane	50	0.5182243	55	0.5145161	60	0.5352365	50	0.538384	65	0.4877907	50	0.5258674
Toluene-d8	50	1.102748	55	1.103613	60	1.068075	50	1.136389	65	1.056904	50	1.138245
4-Bromofluorobenzene	50	0.904023	55	0.912467	60	0.8609604	50	0.9086165	65	0.8487567	50	0.912788

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103152
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 03/29/21 10:01

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	80	0.629148	100	0.6814805								
Chloromethane	80	0.4826725	100	0.5727332								
Vinyl chloride	80	0.5388816	100	0.5906858								
Bromomethane	80	0.2056473	100	0.235244								
Chloroethane	80	0.2599902	100	~~0.2880587~~								
Trichlorofluoromethane	80	0.7734396	100	0.8319642								
Freon 113	80	0.3373488	100	0.3287992								
Acetone	400	8.382099E-02	500	9.525062E-02								
1,1-Dichloroethene	80	0.4739208	100	0.4770607								
Carbon disulfide	400	1.348255	500	1.38942								
Methylene Chloride	80	0.5094166	100	0.5484506								
Methyl-tert-Butyl Ether	80	1.232652	100	1.377597								
trans-1,2-Dichloroethene	80	0.5328813	100	0.549734								
cis-1,2-Dichloroethene	80	0.5956904	100	0.6400348								
1,1-Dichloroethane	80	0.8812784	100	0.9757206								
2-Butanone	400	5.073352E-02	500	5.610896E-02								
Chloroform	80	0.9943336	100	1.067333								
1,1,1-Trichloroethane	80	0.8516143	100	0.8995481								
Methyl acetate	80	0.2153455	100	0.2641474								
Cyclohexane	80	0.8700739	100	0.9453925								
Carbon Tetrachloride	80	0.3441106	100	0.3274717								
1,2-Dichloroethane	80	0.3544617	100	0.3535903								
Benzene	80	1.065324	100	1.020305								
Trichloroethene	80	0.2674436	100	0.2498318								
1,2-Dichloropropane	80	0.263067	100	0.2657918								
Bromodichloromethane	80	0.3627173	100	0.3623492								
4-Methyl-2-pentanone	400	3.299283E-02	500	3.244957E-02								
2-Hexanone	400	0.1145622	500	0.1170362								
cis-1,3-Dichloropropene	80	0.4782468	100	0.4711832								
Toluene	80	1.129498	100	1.077251								
trans-1,3-Dichloropropene	80	0.6124491	100	0.6082289								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103152
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 03/29/21 10:01

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,1,2-Trichloroethane	80	0.3611737	100	0.3569955								
Tetrachloroethene	80	0.296373	100	0.2786176								
Dibromochloromethane	80	0.387843	100	0.3831038								
1,2-Dibromoethane	80	0.377934	100	0.3706039								
Chlorobenzene	80	1.192978	100	1.139007								
Ethylbenzene	80	0.7073832	100	0.6632777								
m,p-Xylenes	160	0.8563316	200	0.8014318								
o-Xylene	80	0.8787887	100	0.8285358								
Bromoform	80	0.1960512	100	0.1935217								
Styrene	80	1.489153	100	1.450575								
Isopropylbenzene	80	2.231905	100	2.103091								
1,1,2,2-Tetrachloroethane	80	0.4864337	100	0.4794428								
1,2,4-Trichlorobenzene	80	0.2821538	100	0.3233573								
1,3-Dichlorobenzene	80	1.106011	100	1.138081								
1,4-Dichlorobenzene	80	1.105283	100	1.144594								
1,2-Dichlorobenzene	80	1.004919	100	1.046537								
1,2-Dibromo-3-chloropropane	80	7.688669E-02	100	7.726392E-02								
Dibromofluoromethane	70	0.4992727	75	0.5343585								
Toluene-d8	70	1.092523	75	1.074562								
4-Bromofluorobenzene	70	0.8193257	75	0.8120644								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090

Calibration: 2103152
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 03/29/21 10:01

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.600391	7.806721	3.978	8.082912E-02			20	
Chloromethane	0.4244214	17.68366	4.40175	0.124488		0.9983693	0.99	
Vinyl chloride	0.475417	13.73775	4.583	9.696612E-02		0.9994991	0.99	
Bromomethane	0.321471	61.19823	5.231375	0.100733		0.994897	0.99	
Chloroethane	0.2811525	12.92573	5.464286	0.1617003			20	
Trichlorofluoromethane	0.7209338	9.316849	5.7055	0.1304415			20	
Freon 113	0.3072171	17.61928	6.559125	9.779393E-02	0.9961743		0.99	
Acetone	7.578281E-02	14.57792	7.397875	0.1580765		0.9989449	0.99	
1,1-Dichloroethene	0.4063732	12.80358	6.53625	0.1238207			20	
Carbon disulfide	1.280306	6.579835	6.62425	7.592227E-02			20	
Methylene Chloride	0.4939431	20.7154	7.34125	0.0518812		0.9998211	0.99	
Methyl-tert-Butyl Ether	1.075203	17.85147	7.62925	7.798819E-02		0.9996498	0.99	
trans-1,2-Dichloroethene	0.4652223	20.52533	7.54975	8.830608E-02		0.9995877	0.99	
cis-1,2-Dichloroethene	0.5330932	17.2069	8.9505	4.512258E-02		0.9996506	0.99	
1,1-Dichloroethane	0.8522977	19.28536	8.3155	8.181696E-02		0.9994832	0.99	
2-Butanone	4.459613E-02	35.44219	9.55175	0.1663359		0.9991091	0.99	
Chloroform	0.9796291	12.31993	9.22125	7.262626E-02			20	
1,1,1-Trichloroethane	0.8350756	12.43873	9.48575	0.0685749			20	
Methyl acetate	0.1830469	29.2743	7.527	0.1996258		0.9978267	0.99	
Cyclohexane	0.6820154	23.15707	9.1885	2.320119E-02		0.9998819	0.99	
Carbon Tetrachloride	0.3275477	12.99242	9.41375	6.696597E-02			20	
1,2-Dichloroethane	0.3574826	17.30708	10.08963	5.818452E-02	0.9987888		0.99	
Benzene	1.035951	18.26725	9.8785	6.173612E-02	0.9971392		0.99	
Trichloroethene	0.2658801	20.45248	10.4545	6.059313E-02	0.9978404		0.99	
1,2-Dichloropropane	0.2335995	22.45822	10.988	5.204264E-02		0.9990697	0.99	
Bromodichloromethane	0.3298445	13.95035	11.01775	5.851248E-02			20	
4-Methyl-2-pentanone	2.917424E-02	12.10607	12.13412	3.065439E-02			20	
2-Hexanone	8.667994E-02	23.12085	12.88275	5.052042E-02		0.9981807	0.99	
cis-1,3-Dichloropropene	0.4170591	14.60583	11.612	3.935929E-02		0.9985105	0.99	
Toluene	1.127943	14.45113	11.8325	1.519682E-02	0.9986373		0.99	

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE02766-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN SWMU 090
Calibration: 2103152
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 03/29/21 10:01

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
trans-1,3-Dichloropropene	0.6050858	16.96667	12.19875	3.889151E-02	0.9989741		0.99	
1,1,2-Trichloroethane	0.3573679	16.78733	12.36487	4.407568E-02	0.9995277		0.99	
Tetrachloroethene	0.3125282	11.55221	12.21225	4.324345E-02			20	
Dibromochloromethane	0.3816133	14.09288	12.55163	3.056989E-02	0.9994214		0.99	
1,2-Dibromoethane	0.3637641	10.77239	12.815	0.0367094			20	
Chlorobenzene	1.293752	18.21489	13.244	3.122372E-02	0.998413		0.99	
Ethylbenzene	0.6783623	17.33804	13.21175	4.019164E-02	0.9979529		0.99	
m,p-Xylenes	0.8802171	10.40085	13.3275	3.010133E-02			20	
o-Xylene	0.8323709	9.65465	13.736	3.165714E-02			20	
Bromoform	0.1964488	26.79339	13.88062	5.915267E-02	0.9984755		0.99	
Styrene	1.345938	13.12906	13.78225	5.368276E-02			20	
Isopropylbenzene	2.102019	8.53497	13.99975	2.408842E-02			20	
1,1,2,2-Tetrachloroethane	0.5133695	23.80906	14.47125	2.257241E-02	0.9996064		0.99	
1,2,4-Trichlorobenzene	0.2073698	35.09608	18.158	0.1308902		0.9994672	0.99	
1,3-Dichlorobenzene	1.050062	16.83536	15.41875	2.598432E-02	0.9985552		0.99	
1,4-Dichlorobenzene	1.134108	14.03058	15.506	1.614574E-02	0.9989015		0.99	
1,2-Dichlorobenzene	0.9633823	17.35363	16.02675	0.0494696		0.9996859	0.99	
1,2-Dibromo-3-chloropropane	6.197711E-02	28.90785	17.088	5.142888E-02		0.9983918	0.99	
Dibromofluoromethane	0.5192063	3.495712	9.42725	0.0549466			20	
Toluene-d8	1.096632	2.734813	11.77875	0.0226663			20	
4-Bromofluorobenzene	0.8723752	4.881678	14.32875	7.284017E-03			20	

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2103054 **Laboratory ID:** AA65289-SCV1

Sequence: AA65289 **Standard ID:** A1C0786

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Cyclohexane	50.0	54	7.3	30.00
2-Hexanone	250	240	-3.3	30.00
Carbon Tetrachloride	50.0	52	4.1	30.00
1,3-Dichlorobenzene	50.0	56	11.1	30.00
4-Bromofluorobenzene	50.0	51	2.7	30.00
Toluene-d8	50.0	50	0.9	30.00
Dibromofluoromethane	50.0	48	-3.9	30.00
Methyl-tert-Butyl Ether	50.0	52	4.8	30.00
trans-1,2-Dichloroethene	50.0	52	3.3	30.00
cis-1,2-Dichloroethene	50.0	54	8.4	30.00
Tetrachloroethene	50.0	54	7.8	30.00
Ethylbenzene	50.0	55	9.8	30.00
1,2,4-Trichlorobenzene	50.0	58	16.6	30.00
Benzene	50.0	56	13.0	30.00
Chlorobenzene	50.0	53	6.7	30.00
Toluene	50.0	55	9.5	30.00
m,p-Xylenes	100	100	5.0	30.00
4-Methyl-2-pentanone	250	260	2.9	30.00
1,2-Dichloroethane	50.0	52	3.8	30.00
1,2-Dibromoethane	50.0	53	6.0	30.00
1,4-Dichlorobenzene	50.0	52	4.4	30.00
trans-1,3-Dichloropropene	50.0	55	10.2	30.00
cis-1,3-Dichloropropene	50.0	50	-0.4	30.00
Styrene	50.0	55	9.6	30.00
Dibromochloromethane	50.0	56	11.5	30.00
1,1-Dichloroethene	50.0	50	-0.2	30.00
1,2-Dibromo-3-chloropropane	50.0	51	1.5	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2103054 **Laboratory ID:** AA65289-SCV1

Sequence: AA65289 **Standard ID:** A1C0786

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,2-Dichlorobenzene	50.0	56	11.0	30.00
o-Xylene	50.0	56	12.5	30.00
1,1,2,2-Tetrachloroethane	50.0	52	3.4	30.00
Methyl acetate	50.0	48	-4.6	30.00
Trichloroethene	50.0	54	8.1	30.00
1,1,2-Trichloroethane	50.0	52	3.7	30.00
2-Butanone	250	270	8.6	30.00
1,2-Dichloropropane	50.0	50	-0.6	30.00
Freon 113	50.0	52	3.1	30.00
Acetone	250	280	12.8	30.00
Trichlorofluoromethane	20.0	21	4.4	30.00
Chloroform	50.0	51	2.3	30.00
1,1-Dichloroethane	50.0	51	2.8	30.00
Bromodichloromethane	50.0	53	5.9	30.00
Bromoform	50.0	59	17.2	30.00
Carbon disulfide	50.0	56	12.2	30.00
Methylene Chloride	50.0	48	-3.6	30.00
Vinyl chloride	20.0	20	1.8	30.00
Chloroethane	20.0	19	-3.8	30.00
Chloromethane	20.0	20	1.4	30.00
Bromomethane	20.0	13	-37.0 *	30.00
1,1,1-Trichloroethane	50.0	52	4.1	30.00
Isopropylbenzene	50.0	55	10.8	30.00
Dichlorodifluoromethane	20.0	20	-2.1	30.00

* Values outside of QC limits

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2103152 **Laboratory ID:** AA65607-SCV1

Sequence: AA65607 **Standard ID:** A1C1212

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Cyclohexane	50.0	58	16.4	30.00
2-Hexanone	250	250	1.1	30.00
Carbon Tetrachloride	50.0	45	-9.7	30.00
1,3-Dichlorobenzene	50.0	47	-5.4	30.00
4-Bromofluorobenzene	50.0	52	4.3	30.00
Toluene-d8	50.0	54	7.7	30.00
Dibromofluoromethane	50.0	56	11.5	30.00
Methyl-tert-Butyl Ether	50.0	54	8.8	30.00
trans-1,2-Dichloroethene	50.0	51	1.4	30.00
cis-1,2-Dichloroethene	50.0	51	2.6	30.00
Tetrachloroethene	50.0	44	-11.8	30.00
Ethylbenzene	50.0	47	-5.4	30.00
1,2,4-Trichlorobenzene	50.0	49	-1.0	30.00
Benzene	50.0	48	-3.7	30.00
Chlorobenzene	50.0	49	-2.1	30.00
Toluene	50.0	48	-3.0	30.00
m,p-Xylenes	100	92	-8.3	30.00
4-Methyl-2-pentanone	250	250	0.8	30.00
1,2-Dichloroethane	50.0	46	-8.4	30.00
1,2-Dibromoethane	50.0	46	-7.7	30.00
1,4-Dichlorobenzene	50.0	48	-3.4	30.00
trans-1,3-Dichloropropene	50.0	49	-2.1	30.00
cis-1,3-Dichloropropene	50.0	46	-7.1	30.00
Styrene	50.0	51	2.4	30.00
Dibromochloromethane	50.0	46	-8.5	30.00
1,1-Dichloroethene	50.0	53	6.9	30.00
1,2-Dibromo-3-chloropropane	50.0	49	-1.0	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE02766-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN SWMU 090

Calibration: 2103152 **Laboratory ID:** AA65607-SCV1

Sequence: AA65607 **Standard ID:** A1C1212

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,2-Dichlorobenzene	50.0	50	0.3	30.00
o-Xylene	50.0	49	-1.2	30.00
1,1,2,2-Tetrachloroethane	50.0	46	-8.7	30.00
Methyl acetate	50.0	60	20.2	30.00
Trichloroethene	50.0	45	-9.3	30.00
1,1,2-Trichloroethane	50.0	47	-6.9	30.00
2-Butanone	250	270	9.1	30.00
1,2-Dichloropropane	50.0	52	3.5	30.00
Freon 113	50.0	45	-10.1	30.00
Acetone	250	310	22.6	30.00
Trichlorofluoromethane	50.0	56	12.6	30.00
Chloroform	50.0	49	-1.3	30.00
1,1-Dichloroethane	50.0	55	10.0	30.00
Bromodichloromethane	50.0	48	-3.4	30.00
Bromoform	50.0	46	-7.2	30.00
Carbon disulfide	50.0	53	5.5	30.00
Methylene Chloride	50.0	53	5.4	30.00
Vinyl chloride	50.0	57	13.1	30.00
Chloroethane	50.0	60	19.9	30.00
Chloromethane	50.0	55	10.7	30.00
Bromomethane	50.0	44	-11.8	30.00
1,1,1-Trichloroethane	50.0	48	-3.9	30.00
Isopropylbenzene	50.0	50	0.8	30.00
Dichlorodifluoromethane	50.0	53	5.3	30.00

* Values outside of QC limits

ANALYSIS SEQUENCE

AA66091

Instrument: OVGCMS2

Calibration ID: 2103054

Printed: 4/26/2021 10:46:15AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA66091-CCV1	QC		1		A1D0987	A1B0764		
1D26010-BS1	QC		2			A1B0764		
1D26010-MS1	QC		3			A1B0764		
1D26010-MSD1	QC		4			A1B0764		
1D26010-BLK1	QC		5			A1B0764		
AA66091-CRL1	QC		6		A1D0993	A1B0764		
AE02766-01	60D TCL SOM01.2 CLP-LIK	B	7			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-02	60D TCL SOM01.2 CLP-LIK	A	8			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 20x C12DCE jmw 4/23/21 cus
AE02766-03	60D TCL SOM01.2 CLP-LIK	A	9			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-06	60D TCL SOM01.2 CLP-LIK	A	10			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 10x TCE jmw 4/23/21 custom
AE02766-08	60D TCL SOM01.2 CLP-LIK	A	11			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-09	60D TCL SOM01.2 CLP-LIK	A	12			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-10	60D TCL SOM01.2 CLP-LIK	A	13			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 5x C12DCE jmw 4/23/21 custo
AE02766-11	60D TCL SOM01.2 CLP-LIK	A	14			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 400x TCE jmw 4/23/21custom
AE02766-12	60D TCL SOM01.2 CLP-LIK	A	15			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 100x TCE jmw 4/23/21 custom
AE02766-13	60D TCL SOM01.2 CLP-LIK	B	16			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-14	60D TCL SOM01.2 CLP-LIK	B	17			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-15	60D TCL SOM01.2 CLP-LIK	B	18			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-16	60D TCL SOM01.2 CLP-LIK	A	19			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-20	60D TCL SOM01.2 CLP-LIK	A	20			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-21	60D TCL SOM01.2 CLP-LIK	A	21			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-22	60D TCL SOM01.2 CLP-LIK	A	22			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x ND jmw 4/23/21 custom

Samples Loaded By 4/26/21 Date

Data Processed By 4/27/21 Date

PREPARATION BENCH SHEET

Printed: 4/26/2021 10:46:25AM

Analysis
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

1D26010

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A1B1156 8260 surr working

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1098 8260 2nd source Mega Mix

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1D26010-BLK1		Blank		QC			5	5			1	
1D26010-BS1		LCS		QC			5	5	A1D1098 A1D1060	2 2	1	
1D26010-MS1		Matrix Spike [AE02766-01]		QC	✓2	N	5	5	A1D1098 A1D1060	2 2	1	
1D26010-MSD1		Matrix Spike Dup [AE02766-01]		QC	✓2	N	5	5	A1D1098 A1D1060	2 2	1	
AE02766-01	C	HMPN-MW0040-042.5-202104B[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-02	C	HMPN-MW0039-035.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 20x C12DCE jmw 4/23/21 custom
AE02766-03	C	HMPN-MW0041-035.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-06	C	HMPN-MW0031-035.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 10x TCE jmw 4/23/21 custom
AE02766-08	C	HMPN-MW0036-015.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-09	C	HMPN-MW0011-025.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-10	C	HMPN-MW0009-020.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 5x C12DCE jmw 4/23/21 custom
AE02766-11	C	HMPN-MW0033-047.5-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 400x TCE jmw 4/23/21custom
AE02766-12	C	HMPN-MW0032-042.5-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 100x TCE jmw 4/23/21 custom
AE02766-13	C	HMPN-MW0047-025.0-202104B[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-14	C	HMPN-MW0046-015.0-202104B[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-15	C	HMPN-MW0038-020.0-202104B[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-16	C	HMPN-MW0037-010.0-202104A[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	✓2	N	5	5			1	History 1x jmw 4/23/21 custom

PREPARATION BENCH SHEET

Printed: 4/26/2021 10:46:25AM

1D26010

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
__ A1B1156 8260 surr working

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1098 8260 2nd source Mega Mix

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE02766-20	C	HMPN-MW0016-010.0-20210421 A1MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-21	C	HMPN-MW0045-030.0-20210421 A1MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-22	C	HMPN-MW0024-060.0-20210422 A1MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			1	History 1x ND jmw 4/23/21 custom

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 2

NC 4/27/21

Start Date ~~04~~ 04/26/21

StopDate 04/26/21

Instrument ID OVF(MS2

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1C1135	P&T Anti-Foam working solution	N/A

~~Samples Prepared By~~ 4/26/21 Date

Samples Prepared By Date

Sequence Name: C:\HPCHEM\1\SEQUENCE\212DU.S
Comment:
Operator: nmc
Data Path: C:\HPchem\1\DATA\042621\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212DU001	8260S	tun1 - not evaluated/needed, rinse;
2	Sample	2	212DU002	8260S	ccv1 ✓
3	Sample	3	212DU003	8260S	1D26010-bs1 ✓
4	Sample	4	212DU004	8260S	1D26010-MS1 ✓
5	Sample	4	212DU005	8260S	1D26010-MSD1 ✓
6	Sample	5	212DU006	8260S	RINSE
7	Sample	6	212DU007	8260S	1D26010-BLK1 ✓
8	Sample	7	212DU008	8260S	AA66091-CRL1 ✓
9	Sample	8	212DU009	8260S	AE02766-01 ✓
10	Sample	9	212DU010	8260S	AE02766-02@20 ✓ rr 10x overdilute
11	Sample	10	212DU011	8260S	AE02766-03 ✓ rr 10x dilute
12	Sample	11	212DU012	8260S	AE02766-06@10 ✓ rr 50x dilute, tce
13	Sample	12	212DU013	8260S	AE02766-08 ✓ rr 1x possible tce c/u. dilute c/u
14	Sample	13	212DU014	8260S	AE02766-09 ✓
15	Sample	14	212DU015	8260S	AE02766-10@5 rr 1x overdilute
16	Sample	15	212DU016	8260S	AE02766-11@400 ✓
17	Sample	16	212DU017	8260S	AE02766-12@100 ✓
18	Sample	17	212DU018	8260S	AE02766-13 ✓
19	Sample	18	212DU019	8260S	AE02766-14 ✓
20	Sample	19	212DU020	8260S	AE02766-15 ✓
21	Sample	20	212DU021	8260S	AE02766-16 ✓ rr 5x vc
22	Sample	21	212DU022	8260S	AE02766-20
23	Sample	22	212DU023	8260S	AE02766-21
24	Sample	23	212DU024	8260S	AE02766-22
25	Sample	24	212DU025	8260S	KETONE TEST
26	Sample	25	212DU026	8260S	ACETATE TEST

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU002.D Vial: 2
Acq On : 26 Apr 2021 7:33 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 7:56 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	222271	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	377685	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	217191	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	190405	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	117539	47.32	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 94.64%			
54) D8-Toluene	13.25	98	394168	55.38	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.76%			
75) Bromofluorobenzene	15.75	95	162666	43.41	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 86.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	81273	17.04	ug/kg	99
3) Chloromethane	6.40	50	93955	18.78	ug/kg	98
4) Vinyl Chloride	6.60	62	77728	20.06	ug/kg	97
5) Bromomethane	7.23	96	56632	32.41	ug/kg	99
6) Chloroethane	7.46	64	41320	20.23	ug/kg	96
7) Trichlorofluoromethane	7.74	101	65178	17.36	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	109461	45.99	ug/kg	89
9) acrolein	8.93	56	265452	406.09	ug/kg	98
10) Acetone	9.27	43	213162	250.02	ug/kg	95
11) 1,1-Dichloroethene	8.53	96	95898	43.84	ug/kg	91
12) 3-Chloropropene	9.12	76	74404	52.42	ug/kg	81
13) Acetonitrile	9.81	41	185055	516.35	ug/kg	99
14) Iodomethane	8.74	142	693771	219.33	ug/kg	89
15) Carbon disulfide	8.64	76	1898007	254.84	ug/kg	100
16) Methylene Chloride	9.23	84	141864	50.08	ug/kg	89
17) Methyl tert-butyl ether	9.55	73	372159	51.38	ug/kg	98
18) Acrylonitrile	10.14	53	731935	479.28	ug/kg	98
19) T-1,2-Dichloroethene	9.46	96	124380	52.84	ug/kg	92
20) Isopropyl Ether	9.92	45	617280	50.64	ug/kg	96
21) C-1,2-Dichloroethene	10.69	96	143970	56.52	ug/kg	94
22) 1,1-Dichloroethane	10.14	63	247142	49.64	ug/kg	99
23) Vinyl Acetate	10.32	43	2021449	249.98	ug/kg	98
24) Chloroprene	10.12	88	112710	54.05	ug/kg	81
25) 2-Butanone	11.20	72	75089	277.71	ug/kg	86
26) Propionitrile	11.47	54	209626	513.32	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	190472	50.14	ug/kg	76
28) Methacrylonitrile	11.51	67	582597	519.23	ug/kg	93
29) Chloroform	10.91	83	245598	53.42	ug/kg	97
31) Dibromofluoromethane	11.10	113	117539	47.32	ug/kg	100
32) Bromochloromethane	10.89	128	78568	51.54	ug/kg	97
33) 1,1,1-Trichloroethane	11.21	97	175454	48.31	ug/kg	95
34) 1,1-Dichloropropene	11.31	75	191504	53.82	ug/kg	99
35) Diethyl Ether	8.16	59	120820	46.85	ug/kg	94
36) Methyl Acetate	9.42	74	25163	51.55	ug/kg	86
37) Cyclohexane	10.98	56	200594	47.14	ug/kg	92
39) Methyl Cyclohexane	12.09	55	162694	52.38	ug/kg	89
40) Carbon Tetrachloride	11.17	117	170351	48.62	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	184926	51.19	ug/kg	96
42) Benzene	11.55	78	498019	61.57	ug/kg	92
43) Isobutyl Alcohol	11.57	43	240593	1110.17	ug/kg	99
44) Trichloroethene	12.06	130	142812	58.90	ug/kg	100
45) 1,2-Dichloropropane	12.51	63	157490	56.85	ug/kg	97
46) Methyl Methacrylate	12.59	100	43266	61.37	ug/kg	97
47) 1,4-Dioxane	12.71	88	26932	1297.54	ug/kg	93
48) Bromodichloromethane	12.52	83	193548	59.88	ug/kg	98
49) Dibromomethane	12.44	93	97735	59.97	ug/kg	93
50) 4-Methyl-2-Pentanone	13.53	100	102322	306.43	ug/kg	90
51) 2-Chloroethyl vinyl ether	12.94	63	142583	200.10	ug/kg	100
52) 2-Hexanone	14.23	43	587509	290.31	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU002.D Vial: 2
Acq On : 26 Apr 2021 7:33 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 7:56 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

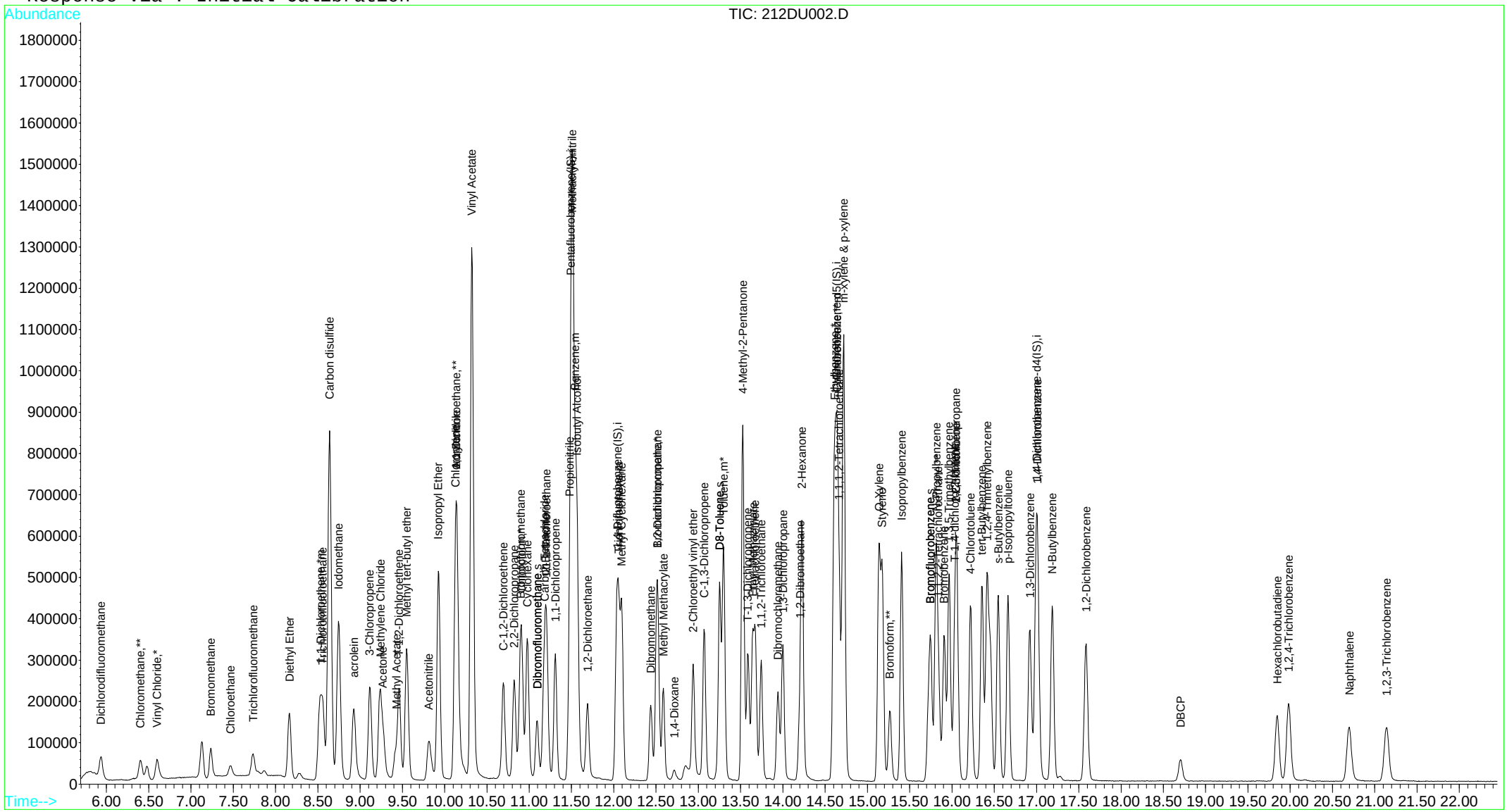
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	278251	62.88	ug/kg	95
55) D8-Toluene	13.25	98	394168	55.38	ug/kg	93
57) Toluene	13.30	92	322272	53.65	ug/kg	98
58) Ethyl Methacrylate	13.64	69	201535	47.55	ug/kg	98
59) T-1,3-Dichloropropene	13.59	75	227753	52.70	ug/kg	97
60) 1,1,2-Trichloroethane	13.74	97	120342	51.49	ug/kg	95
61) 1,3-Dichloropropane	14.00	76	256972	51.87	ug/kg	100
62) Tetrachloroethene	13.67	164	108122	59.28	ug/kg	86
63) Dibromochloromethane	13.94	129	155064	48.20	ug/kg	97
64) 1,2-Dibromoethane	14.20	107	142142	49.54	ug/kg	100
65) Chlorobenzene	14.65	112	338456	50.26	ug/kg	97
66) 1,1,1,2-Tetrachloroethane	14.67	131	128973	47.95	ug/kg#	75
67) Ethylbenzene	14.61	106	174945	50.75	ug/kg	96
68) m-xylene & p-xylene	14.72	106	426005	101.05	ug/kg	97
69) O-Xylene	15.14	106	216346	52.10	ug/kg	97
70) Bromoform	15.27	173	99252	59.36	ug/kg	98
71) Styrene	15.18	104	363599	51.13	ug/kg	100
72) Isopropylbenzene	15.40	105	526065	50.56	ug/kg	100
73) 1,2,3-Trichloropropane	16.04	75	195391	52.45	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.84	83	167057	55.57	ug/kg	99
76) Bromofluorobenzene	15.75	95	162666	43.41	ug/kg#	68
77) T-1,4-dichloro-2-butene	16.03	53	48187	49.53	ug/kg	97
78) N-Propylbenzene	15.81	91	635913	53.85	ug/kg	97
80) Bromobenzene	15.91	156	156060	50.85	ug/kg	92
81) 1,3,5-Trimethylbenzene	15.97	105	405248	42.88	ug/kg	99
82) 2-Chlorotoluene	16.05	91	375988	43.52	ug/kg	98
83) 4-Chlorotoluene	16.22	91	393564	43.99	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	408984	42.80	ug/kg	99
85) s-Butylbenzene	16.55	105	487217	43.53	ug/kg	99
86) tert-Butylbenzene	16.36	119	356207	42.47	ug/kg	98
87) p-Isopropyltoluene	16.66	119	419183	42.05	ug/kg	98
88) 1,3-Dichlorobenzene	16.92	146	262973	49.38	ug/kg	96
89) 1,4-Dichlorobenzene	17.01	146	267101	48.23	ug/kg	95
90) 1,2-Dichlorobenzene	17.59	146	253218	49.90	ug/kg	95
91) N-Butylbenzene	17.18	91	391300	46.49	ug/kg	99
92) DBCP	18.70	75	24187	38.68	ug/kg	79
93) Naphthalene	20.70	128	254837	45.90	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	132438	50.16	ug/kg	96
95) Hexachlorobutadiene	19.85	225	65830	56.43	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.14	180	100620	48.46	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU002.D Vial: 2
Acq On : 26 Apr 2021 7:33 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 7:56 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU003.D Vial: 3
Acq On : 26 Apr 2021 8:04 am Operator: nmc
Sample : 1D26010-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 8:26 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	238097	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	397281	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	225938	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	193572	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	123091	46.26	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 92.52%			
54) D8-Toluene	13.25	98	414468	55.36	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.72%			
75) Bromofluorobenzene	15.74	95	165888	42.55	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	83664	16.38	ug/kg	99
3) Chloromethane	6.41	50	88398	16.49	ug/kg	98
4) Vinyl Chloride	6.60	62	77996	18.79	ug/kg	96
5) Bromomethane	7.25	96	22425	9.93	ug/kg	99
6) Chloroethane	7.47	64	42838	19.58	ug/kg	97
7) Trichlorofluoromethane	7.74	101	70570	17.55	ug/kg	98
8) Trichlorotrifluoroethane	8.56	101	102622	40.25	ug/kg	89
9) acrolein	8.93	56	48996	69.97	ug/kg	100
10) Acetone	9.28	43	87080	95.35	ug/kg	94
11) 1,1-Dichloroethene	8.53	96	45913	19.60	ug/kg	91
12) 3-Chloropropene	9.12	76	33203	21.84	ug/kg	84
13) Acetonitrile	9.83	41	31399	81.79	ug/kg	95
14) Iodomethane	8.75	142	80372	23.72	ug/kg	87
15) Carbon disulfide	8.64	76	197208	24.72	ug/kg	99
16) Methylene Chloride	9.24	84	61040	20.11	ug/kg	91
17) Methyl tert-butyl ether	9.55	73	155229	20.01	ug/kg	97
18) Acrylonitrile	10.12	53	115154	70.39	ug/kg#	71
19) T-1,2-Dichloroethene	9.47	96	54452	21.60	ug/kg	90
20) Isopropyl Ether	9.92	45	258330	19.78	ug/kg	96
21) C-1,2-Dichloroethene	10.69	96	60428	22.15	ug/kg	93
22) 1,1-Dichloroethane	10.14	63	104827	19.66	ug/kg	98
23) Vinyl Acetate	10.33	43	165412	19.10	ug/kg	100
24) Chloroprene	10.12	88	47279	21.17	ug/kg	1
25) 2-Butanone	11.20	72	37734	130.28	ug/kg	52
26) Propionitrile	11.49	54	7571	17.31	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	79620	19.56	ug/kg	55
28) Methacrylonitrile	11.51	67	25968	21.61	ug/kg	74
29) Chloroform	10.91	83	102604	20.84	ug/kg	92
31) Dibromofluoromethane	11.09	113	123091	46.26	ug/kg	100
32) Bromochloromethane	10.89	128	33152	20.30	ug/kg	96
33) 1,1,1-Trichloroethane	11.21	97	73267	18.83	ug/kg	94
34) 1,1-Dichloropropene	11.31	75	78971	20.72	ug/kg	99
35) Diethyl Ether	8.16	59	106195	38.44	ug/kg	93
36) Methyl Acetate	9.42	74	10277	19.65	ug/kg	82
37) Cyclohexane	10.98	56	94899	20.82	ug/kg	95
39) Methyl Cyclohexane	12.09	55	69729	21.34	ug/kg	88
40) Carbon Tetrachloride	11.17	117	70099	19.02	ug/kg	98
41) 1,2-Dichloroethane	11.69	62	74394	19.58	ug/kg	96
42) Benzene	11.55	78	218980	25.74	ug/kg#	49
43) Isobutyl Alcohol	11.57	43	56235	246.69	ug/kg#	1
44) Trichloroethene	12.06	130	57235	22.44	ug/kg	95
45) 1,2-Dichloropropane	12.51	63	62298	21.38	ug/kg	97
46) Methyl Methacrylate	12.59	100	17867	24.09	ug/kg	99
47) 1,4-Dioxane	12.72	88	1263	57.85	ug/kg#	78
48) Bromodichloromethane	12.52	83	76470	22.49	ug/kg	98
49) Dibromomethane	12.44	93	38066	22.21	ug/kg	93
50) 4-Methyl-2-Pentanone	13.53	100	39765	113.21	ug/kg	84
51) 2-Chloroethyl vinyl ether	12.94	63	46678	62.28	ug/kg	100
52) 2-Hexanone	14.23	43	214232	100.64	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU003.D Vial: 3
Acq On : 26 Apr 2021 8:04 am Operator: nmc
Sample : 1D26010-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 8:26 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

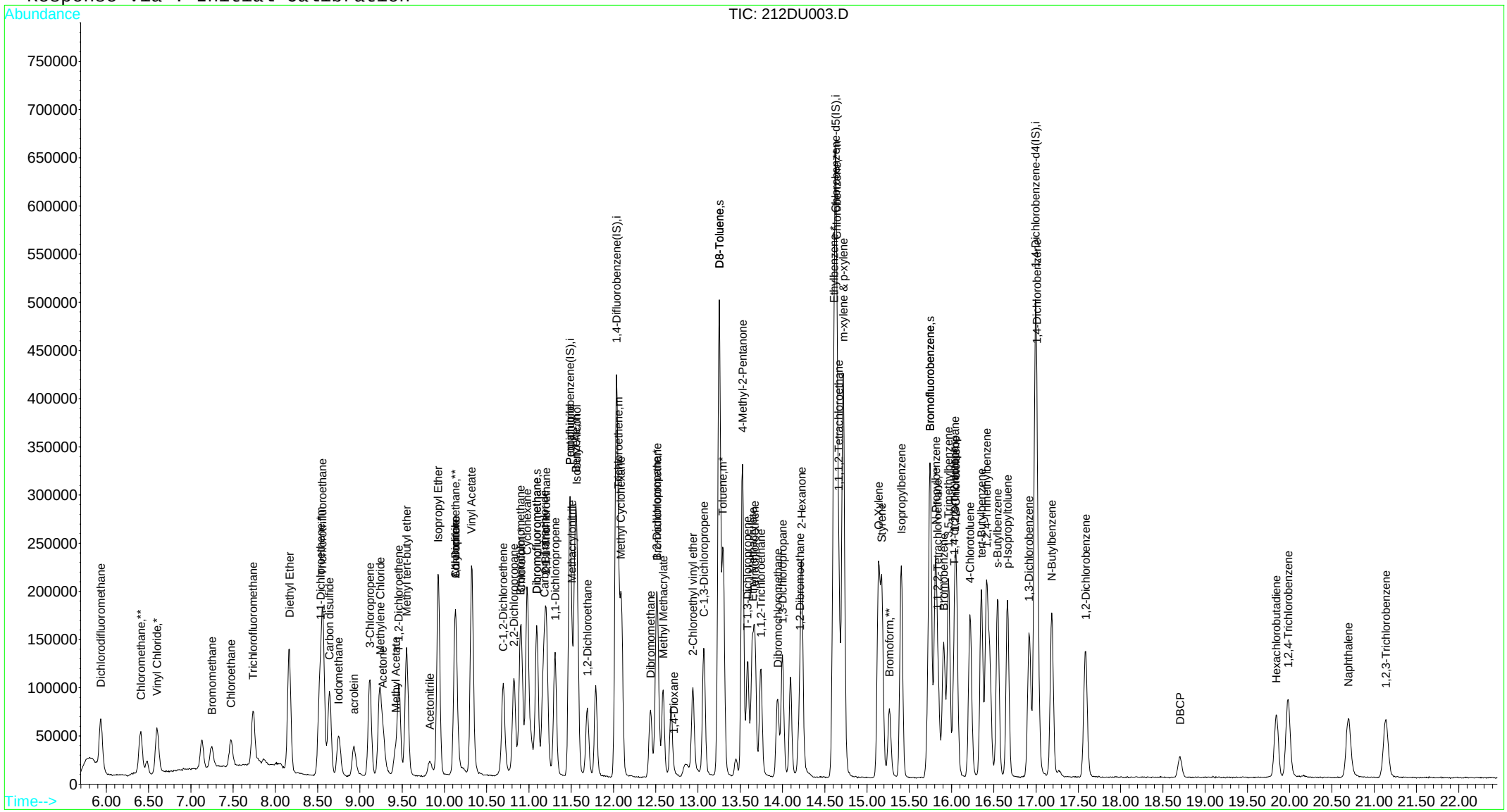
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	103113	22.15 ug/kg	94
55) D8-Toluene	13.25	98	414468	55.36 ug/kg	93
57) Toluene	13.30	92	130374	20.86 ug/kg	98
58) Ethyl Methacrylate	13.64	69	81602	18.51 ug/kg	96
59) T-1,3-Dichloropropene	13.59	75	90491	20.13 ug/kg	96
60) 1,1,2-Trichloroethane	13.75	97	48151	19.80 ug/kg	97
61) 1,3-Dichloropropane	14.00	76	97212	18.86 ug/kg	98
62) Tetrachloroethene	13.67	164	44960	23.70 ug/kg	86
63) Dibromochloromethane	13.94	129	60457	18.07 ug/kg	96
64) 1,2-Dibromoethane	14.20	107	54950	18.41 ug/kg	99
65) Chlorobenzene	14.65	112	136778	19.52 ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.67	131	50497	18.05 ug/kg#	25
67) Ethylbenzene	14.60	106	69115	19.27 ug/kg	95
68) m-xylene & p-xylene	14.72	106	168194	38.35 ug/kg	98
69) O-Xylene	15.14	106	84501	19.56 ug/kg	96
70) Bromoform	15.26	173	39999	23.00 ug/kg	98
71) Styrene	15.17	104	144313	19.51 ug/kg	99
72) Isopropylbenzene	15.41	105	210077	19.41 ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	75236	19.42 ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.84	83	64236	20.54 ug/kg	99
76) Bromofluorobenzene	15.74	95	165888	42.55 ug/kg#	80
77) T-1,4-dichloro-2-butene	16.03	53	17167	16.96 ug/kg	91
78) N-Propylbenzene	15.81	91	253315	20.62 ug/kg	97
80) Bromobenzene	15.91	156	63027	20.20 ug/kg	91
81) 1,3,5-Trimethylbenzene	15.96	105	163572	17.03 ug/kg	98
82) 2-Chlorotoluene	16.05	91	150847	17.18 ug/kg	97
83) 4-Chlorotoluene	16.22	91	156513	17.21 ug/kg	98
84) 1,2,4-Trimethylbenzene	16.42	105	167615	17.26 ug/kg	99
85) s-Butylbenzene	16.54	105	201183	17.68 ug/kg	100
86) tert-Butylbenzene	16.35	119	144443	16.94 ug/kg	98
87) p-Isopropyltoluene	16.66	119	168397	16.62 ug/kg	97
88) 1,3-Dichlorobenzene	16.92	146	106145	19.61 ug/kg	96
89) 1,4-Dichlorobenzene	17.02	146	105837	18.80 ug/kg	95
90) 1,2-Dichlorobenzene	17.59	146	100242	19.43 ug/kg	95
91) N-Butylbenzene	17.18	91	156325	18.27 ug/kg	99
92) DBCP	18.70	75	10079	15.86 ug/kg	83
93) Naphthalene	20.70	128	122369	23.77 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	56655	21.11 ug/kg	98
95) Hexachlorobutadiene	19.84	225	27401	23.10 ug/kg	98
96) 1,2,3-Trichlorobenzene	21.14	180	47307	22.41 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU003.D Vial: 3
Acq On : 26 Apr 2021 8:04 am Operator: nmc
Sample : 1D26010-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 8:26 2021 Quant Results File: 030921.RES

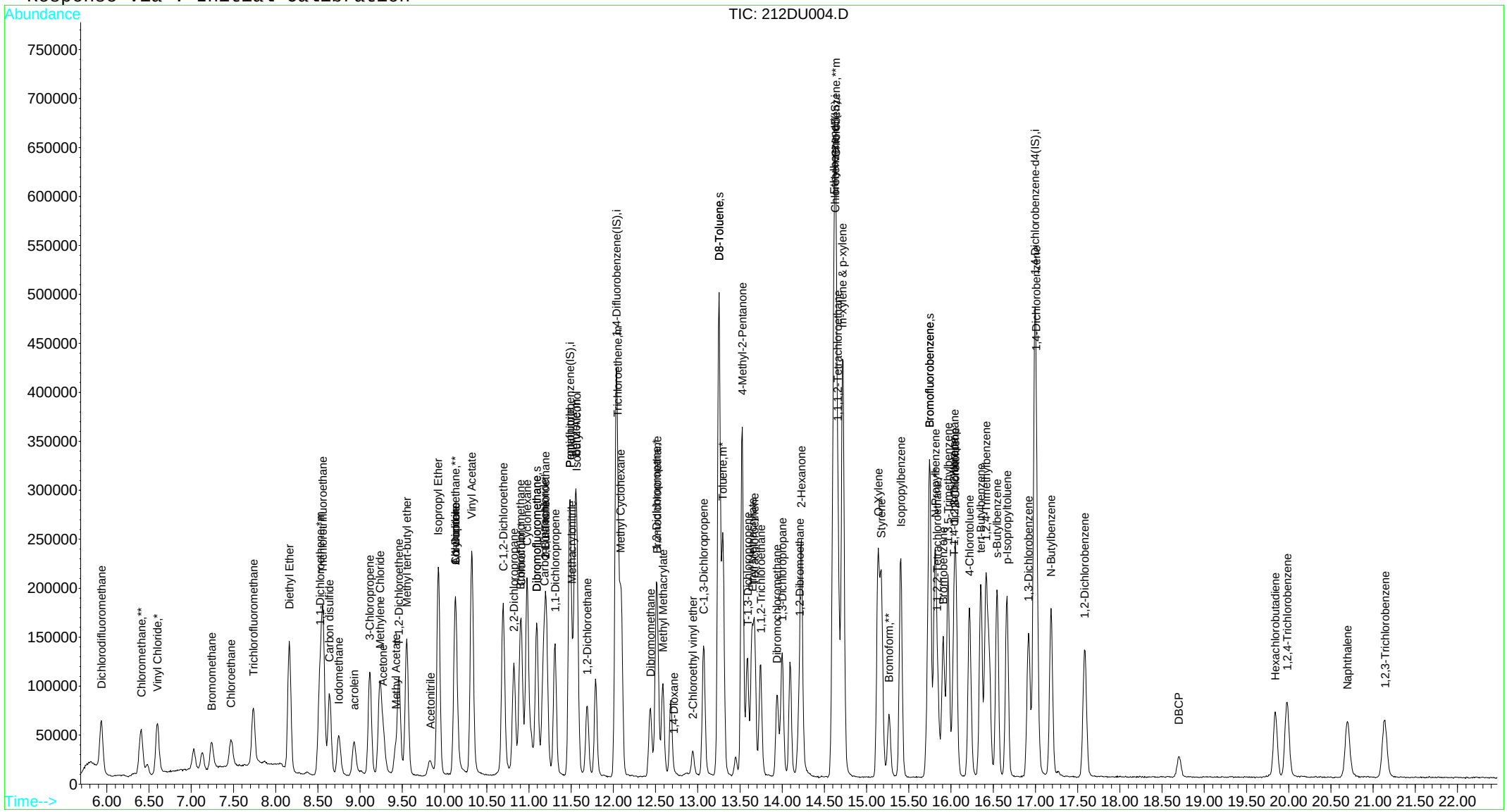
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU004.D Vial: 4
Acq On : 26 Apr 2021 8:33 am Operator: nmc
Sample : 1D26010-MS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 8:55 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU004.D Vial: 4
Acq On : 26 Apr 2021 8:33 am Operator: nmc
Sample : 1D26010-MS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 8:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	234018	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	388467	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	218425	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	188172	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	123205	47.11	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 94.22%			
54) D8-Toluene	13.25	98	409415	55.93	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 111.86%			
75) Bromofluorobenzene	15.74	95	163502	43.38	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 86.76%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.94	85	81916	16.32	ug/kg	98
3) Chloromethane	6.41	50	92618	17.58	ug/kg	98
4) Vinyl Chloride	6.60	62	87324	21.40	ug/kg	97
5) Bromomethane	7.24	96	25570	11.68	ug/kg	99
6) Chloroethane	7.47	64	42614	19.82	ug/kg	96
7) Trichlorofluoromethane	7.74	101	71011	17.97	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	101606	40.55	ug/kg	88
9) acrolein	8.93	56	55329	80.39	ug/kg	99
10) Acetone	9.28	43	88762	98.88	ug/kg	95
11) 1,1-Dichloroethene	8.52	96	48691	21.14	ug/kg	90
12) 3-Chloropropene	9.11	76	35635	23.85	ug/kg	81
13) Acetonitrile	9.83	41	33902	89.85	ug/kg	97
14) Iodomethane	8.75	142	76029	22.83	ug/kg	88
15) Carbon disulfide	8.63	76	186517	23.79	ug/kg	99
16) Methylene Chloride	9.23	84	62652	21.00	ug/kg	89
17) Methyl tert-butyl ether	9.55	73	162242	21.28	ug/kg	99
18) Acrylonitrile	10.12	53	119682	74.44	ug/kg#	71
19) T-1,2-Dichloroethene	9.46	96	57248	23.10	ug/kg	89
20) Isopropyl Ether	9.93	45	263386	20.52	ug/kg	96
21) C-1,2-Dichloroethene	10.70	96	107378	40.04	ug/kg	95
22) 1,1-Dichloroethane	10.14	63	111748	21.32	ug/kg	98
23) Vinyl Acetate	10.33	43	171022	20.09	ug/kg	100
24) Chloroprene	10.13	88	50340	22.93	ug/kg	1
25) 2-Butanone	11.20	72	36147	126.98	ug/kg	63
26) Propionitrile	11.49	54	7291	16.96	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	86371	21.59	ug/kg	60
28) Methacrylonitrile	11.51	67	25908	21.93	ug/kg	66
29) Chloroform	10.91	83	103583	21.40	ug/kg	97
31) Dibromofluoromethane	11.09	113	123205	47.11	ug/kg	100
32) Bromochloromethane	10.89	128	33503	20.87	ug/kg	96
33) 1,1,1-Trichloroethane	11.20	97	76901	20.11	ug/kg	94
34) 1,1-Dichloropropene	11.31	75	83665	22.33	ug/kg	98
35) Diethyl Ether	8.16	59	108456	39.94	ug/kg	94
36) Methyl Acetate	9.42	74	10769	20.95	ug/kg#	79
37) Cyclohexane	10.98	56	97207	21.70	ug/kg	92
39) Methyl Cyclohexane	12.09	55	69762	21.84	ug/kg	89
40) Carbon Tetrachloride	11.18	117	73253	20.33	ug/kg	98
41) 1,2-Dichloroethane	11.69	62	75418	20.30	ug/kg	96
42) Benzene	11.55	78	229192	27.55	ug/kg#	49
43) Isobutyl Alcohol	11.57	43	60256	270.32	ug/kg#	1
44) Trichloroethene	12.06	130	64411	25.83	ug/kg	95
45) 1,2-Dichloropropane	12.50	63	64579	22.66	ug/kg	97
46) Methyl Methacrylate	12.59	100	18382	25.35	ug/kg	98
47) 1,4-Dioxane	12.72	88	1107	51.85	ug/kg#	68
48) Bromodichloromethane	12.52	83	78766	23.69	ug/kg	98
49) Dibromomethane	12.44	93	38315	22.86	ug/kg	94
50) 4-Methyl-2-Pentanone	13.53	100	41740	121.53	ug/kg	92
51) 2-Chloroethyl vinyl ether	12.94	63	13603	18.56	ug/kg	97
52) 2-Hexanone	14.23	43	235583	113.18	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU004.D Vial: 4
Acq On : 26 Apr 2021 8:33 am Operator: nmc
Sample : 1D26010-MS1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 8:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

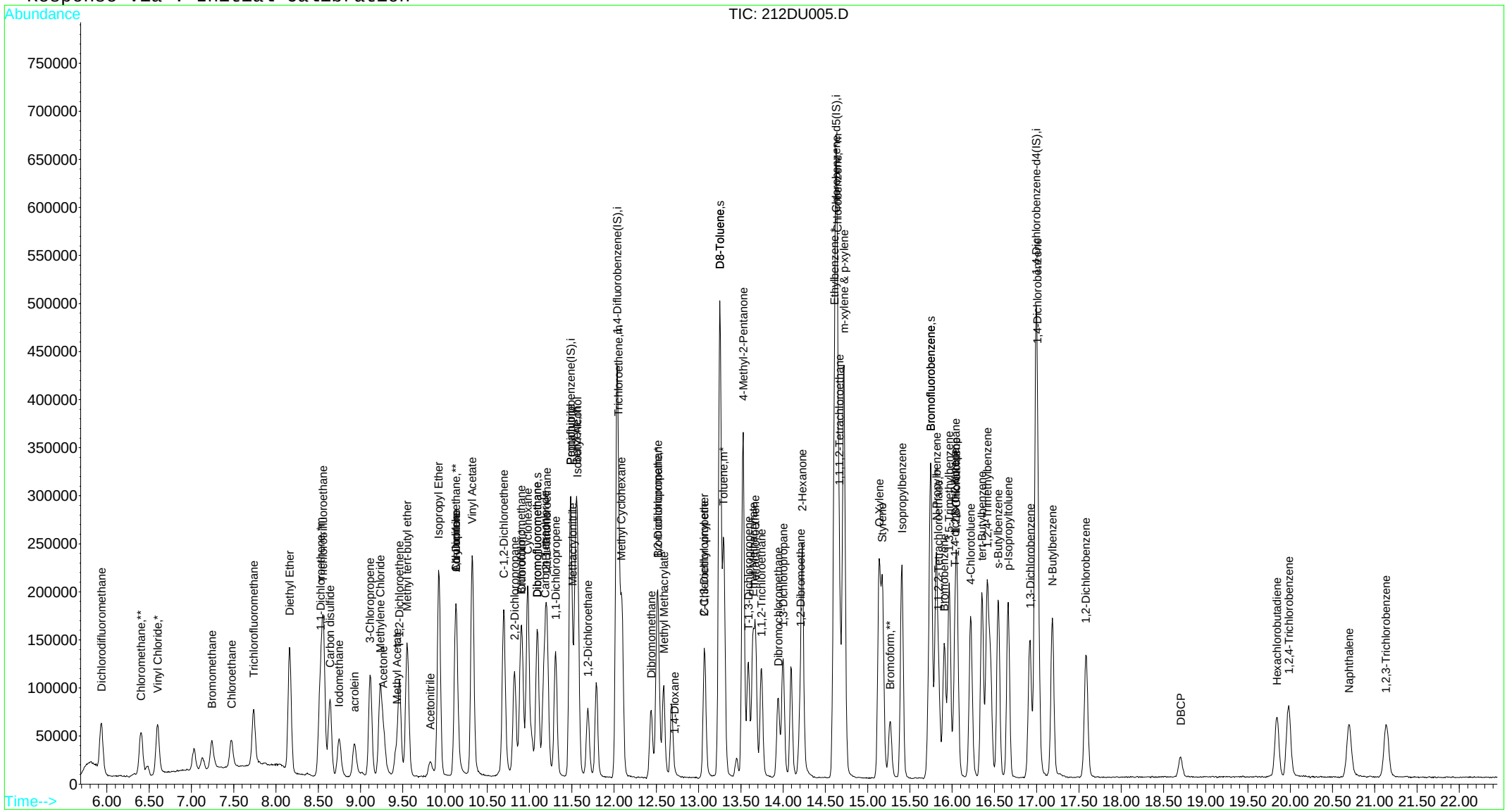
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	105227	23.12 ug/kg	94
55) D8-Toluene	13.25	98	409415	55.93 ug/kg	93
57) Toluene	13.30	92	136466	22.59 ug/kg	97
58) Ethyl Methacrylate	13.64	69	84868	19.91 ug/kg	97
59) T-1,3-Dichloropropene	13.59	75	91503	21.05 ug/kg	93
60) 1,1,2-Trichloroethane	13.75	97	48026	20.43 ug/kg	96
61) 1,3-Dichloropropane	14.00	76	99762	20.02 ug/kg	97
62) Tetrachloroethene	13.68	164	44751	24.40 ug/kg	87
63) Dibromochloromethane	13.94	129	59767	18.47 ug/kg	96
64) 1,2-Dibromoethane	14.20	107	55546	19.25 ug/kg	98
65) Chlorobenzene	14.64	112	138387	20.43 ug/kg	94
66) 1,1,1,2-Tetrachloroethane	14.66	131	51781	19.14 ug/kg#	32
67) Ethylbenzene	14.61	106	71216	20.54 ug/kg	95
68) m-xylene & p-xylene	14.72	106	170802	40.29 ug/kg	96
69) O-Xylene	15.14	106	86459	20.70 ug/kg	97
70) Bromoform	15.26	173	39202	23.31 ug/kg	98
71) Styrene	15.17	104	147487	20.62 ug/kg	99
72) Isopropylbenzene	15.41	105	213996	20.45 ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	74349	19.85 ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.84	83	64233	21.25 ug/kg	99
76) Bromofluorobenzene	15.74	95	163502	43.38 ug/kg#	80
77) T-1,4-dichloro-2-butene	16.03	53	16997	17.37 ug/kg#	88
78) N-Propylbenzene	15.81	91	258898	21.80 ug/kg	97
80) Bromobenzene	15.91	156	62859	20.72 ug/kg	92
81) 1,3,5-Trimethylbenzene	15.96	105	164132	17.57 ug/kg	98
82) 2-Chlorotoluene	16.06	91	153242	17.95 ug/kg	97
83) 4-Chlorotoluene	16.22	91	157458	17.81 ug/kg	99
84) 1,2,4-Trimethylbenzene	16.42	105	168338	17.83 ug/kg	100
85) s-Butylbenzene	16.54	105	206757	18.69 ug/kg	99
86) tert-Butylbenzene	16.35	119	142712	17.22 ug/kg	96
87) p-Isopropyltoluene	16.66	119	170729	17.33 ug/kg	98
88) 1,3-Dichlorobenzene	16.92	146	105235	20.00 ug/kg	96
89) 1,4-Dichlorobenzene	17.02	146	106806	19.52 ug/kg	96
90) 1,2-Dichlorobenzene	17.58	146	100716	20.08 ug/kg	96
91) N-Butylbenzene	17.19	91	159279	19.15 ug/kg	99
92) DBCP	18.70	75	10178	16.47 ug/kg	83
93) Naphthalene	20.70	128	114150	22.90 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	53830	20.63 ug/kg	99
95) Hexachlorobutadiene	19.84	225	27284	23.66 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.14	180	44463	21.67 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU005.D Vial: 4
Acq On : 26 Apr 2021 9:01 am Operator: nmc
Sample : 1D26010-MSD1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 9:24 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU005.D Vial: 4
Acq On : 26 Apr 2021 9:01 am Operator: nmc
Sample : 1D26010-MSD1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 9:24 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	240346	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	397801	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	226637	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	192512	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	124090	46.20	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 92.40%			
54) D8-Toluene	13.25	98	413681	55.19	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.38%			
75) Bromofluorobenzene	15.74	95	165647	42.36	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.72%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	80530	15.62	ug/kg	98
3) Chloromethane	6.40	50	91042	16.83	ug/kg	99
4) Vinyl Chloride	6.60	62	85756	20.47	ug/kg	98
5) Bromomethane	7.24	96	26893	11.99	ug/kg	95
6) Chloroethane	7.47	64	42997	19.47	ug/kg	96
7) Trichlorofluoromethane	7.74	101	69437	17.11	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	98973	38.46	ug/kg	87
9) acrolein	8.93	56	54186	76.66	ug/kg	99
10) Acetone	9.28	43	87500	94.91	ug/kg	95
11) 1,1-Dichloroethene	8.52	96	47185	19.95	ug/kg	91
12) 3-Chloropropene	9.11	76	34877	22.73	ug/kg	82
13) Acetonitrile	9.83	41	31029	80.07	ug/kg	97
14) Iodomethane	8.75	142	73371	21.45	ug/kg	89
15) Carbon disulfide	8.64	76	179620	22.30	ug/kg	99
16) Methylene Chloride	9.23	84	62319	20.34	ug/kg	90
17) Methyl tert-butyl ether	9.55	73	163076	20.82	ug/kg	98
18) Acrylonitrile	10.12	53	114041	69.06	ug/kg#	74
19) T-1,2-Dichloroethene	9.46	96	56656	22.26	ug/kg	90
20) Isopropyl Ether	9.92	45	261400	19.83	ug/kg	96
21) C-1,2-Dichloroethene	10.69	96	107122	38.89	ug/kg	94
22) 1,1-Dichloroethane	10.14	63	110559	20.54	ug/kg	99
23) Vinyl Acetate	10.33	43	172627	19.74	ug/kg	99
24) Chloroprene	10.12	88	49496	21.95	ug/kg	1
25) 2-Butanone	11.20	72	35277	120.66	ug/kg	62
26) Propionitrile	11.48	54	7176	16.25	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	85603	20.84	ug/kg	83
28) Methacrylonitrile	11.51	67	25192	20.76	ug/kg	79
29) Chloroform	10.91	83	103459	20.81	ug/kg	97
31) Dibromofluoromethane	11.09	113	124090	46.20	ug/kg	100
32) Bromochloromethane	10.89	128	32626	19.79	ug/kg	96
33) 1,1,1-Trichloroethane	11.21	97	75877	19.32	ug/kg	94
34) 1,1-Dichloropropene	11.31	75	82449	21.43	ug/kg	99
35) Diethyl Ether	8.16	59	107220	38.45	ug/kg	94
36) Methyl Acetate	9.42	74	10206	19.33	ug/kg#	88
37) Cyclohexane	10.98	56	95412	20.74	ug/kg	96
39) Methyl Cyclohexane	12.09	55	68679	20.99	ug/kg	90
40) Carbon Tetrachloride	11.17	117	72933	19.76	ug/kg	98
41) 1,2-Dichloroethane	11.69	62	76076	19.99	ug/kg	96
42) Benzene	11.55	78	227869	26.75	ug/kg#	48
43) Isobutyl Alcohol	11.57	43	62337	273.10	ug/kg#	1
44) Trichloroethene	12.06	130	64072	25.09	ug/kg	95
45) 1,2-Dichloropropane	12.51	63	63354	21.71	ug/kg	98
46) Methyl Methacrylate	12.59	100	18042	24.30	ug/kg	99
47) 1,4-Dioxane	12.72	88	915	41.85	ug/kg#	50
48) Bromodichloromethane	12.52	83	77066	22.64	ug/kg	99
49) Dibromomethane	12.44	93	38377	22.36	ug/kg	93
50) 4-Methyl-2-Pentanone	13.53	100	42104	119.71	ug/kg	89
51) 2-Chloroethyl vinyl ether	13.07	63	750	1.00	ug/kg#	45
52) 2-Hexanone	14.23	43	232736	109.19	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU005.D Vial: 4
Acq On : 26 Apr 2021 9:01 am Operator: nmc
Sample : 1D26010-MSD1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 9:24 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	104290	22.38	ug/kg	95
55) D8-Toluene	13.25	98	413681	55.19	ug/kg	93
57) Toluene	13.29	92	133063	21.23	ug/kg	100
58) Ethyl Methacrylate	13.64	69	85478	19.33	ug/kg	97
59) T-1,3-Dichloropropene	13.59	75	91301	20.24	ug/kg	96
60) 1,1,2-Trichloroethane	13.74	97	48707	19.97	ug/kg	96
61) 1,3-Dichloropropane	14.00	76	98551	19.06	ug/kg	98
62) Tetrachloroethene	13.67	164	44179	23.21	ug/kg	87
63) Dibromochloromethane	13.94	129	61271	18.25	ug/kg	96
64) 1,2-Dibromoethane	14.20	107	54461	18.19	ug/kg	99
65) Chlorobenzene	14.65	112	137713	19.60	ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.67	131	50682	18.06	ug/kg#	25
67) Ethylbenzene	14.60	106	70005	19.46	ug/kg	94
68) m-xylene & p-xylene	14.72	106	169138	38.45	ug/kg	97
69) O-Xylene	15.14	106	85666	19.77	ug/kg	98
70) Bromoform	15.27	173	39095	22.41	ug/kg	98
71) Styrene	15.17	104	144652	19.49	ug/kg	100
72) Isopropylbenzene	15.41	105	212767	19.60	ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	74776	19.24	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	63679	20.30	ug/kg	99
76) Bromofluorobenzene	15.74	95	165647	42.36	ug/kg#	80
77) T-1,4-dichloro-2-butene	16.03	53	17753	17.49	ug/kg	97
78) N-Propylbenzene	15.81	91	255018	20.69	ug/kg	97
80) Bromobenzene	15.91	156	62385	20.10	ug/kg	92
81) 1,3,5-Trimethylbenzene	15.96	105	159924	16.74	ug/kg	97
82) 2-Chlorotoluene	16.05	91	151727	17.37	ug/kg	96
83) 4-Chlorotoluene	16.22	91	156168	17.26	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	165067	17.09	ug/kg	98
85) s-Butylbenzene	16.54	105	201217	17.78	ug/kg	100
86) tert-Butylbenzene	16.35	119	142586	16.81	ug/kg	99
87) p-Isopropyltoluene	16.66	119	169181	16.79	ug/kg	99
88) 1,3-Dichlorobenzene	16.92	146	103223	19.17	ug/kg	96
89) 1,4-Dichlorobenzene	17.02	146	106324	18.99	ug/kg	95
90) 1,2-Dichlorobenzene	17.59	146	98160	19.13	ug/kg	96
91) N-Butylbenzene	17.18	91	153754	18.07	ug/kg	99
92) DBCP	18.71	75	9837	15.56	ug/kg	80
93) Naphthalene	20.69	128	107428	21.22	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	52231	19.57	ug/kg	96
95) Hexachlorobutadiene	19.85	225	25983	22.03	ug/kg	100
96) 1,2,3-Trichlorobenzene	21.14	180	42847	20.41	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU007.D Vial: 6
Acq On : 26 Apr 2021 9:58 am Operator: nmc
Sample : 1D26010-BLK1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 10:22 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	245461	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	406978	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234022	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	196189	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	139945	51.02	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.04%			
54) D8-Toluene	13.25	98	448029	58.42	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 116.84%			
75) Bromofluorobenzene	15.75	95	178091	44.11	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.22%			

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.	
3) Chloromethane	0.00	50	0	N.D.	
4) Vinyl Chloride	0.00	62	0	N.D.	
5) Bromomethane	0.00	96	0	N.D.	
6) Chloroethane	0.00	64	0	N.D.	
7) Trichlorofluoromethane	0.00	101	0	N.D.	
8) Trichlorotrifluoroethane	0.00	101	0	N.D.	
9) acrolein	0.00	56	0	N.D.	
10) Acetone	0.00	43	0	N.D. d	
11) 1,1-Dichloroethene	0.00	96	0	N.D.	
12) 3-Chloropropene	0.00	76	0	N.D.	
13) Acetonitrile	0.00	41	0	N.D. d	
14) Iodomethane	0.00	142	0	N.D. d	
15) Carbon disulfide	0.00	76	0	N.D. d	
16) Methylene Chloride	0.00	84	0	N.D.	
17) Methyl tert-butyl ether	0.00	73	0	N.D.	
18) Acrylonitrile	0.00	53	0	N.D.	
19) T-1,2-Dichloroethene	0.00	96	0	N.D.	
20) Isopropyl Ether	0.00	45	0	N.D.	
21) C-1,2-Dichloroethene	0.00	96	0	N.D.	
22) 1,1-Dichloroethane	0.00	63	0	N.D.	
23) Vinyl Acetate	0.00	43	0	N.D.	
24) Chloroprene	0.00	88	0	N.D.	
25) 2-Butanone	0.00	72	0	N.D. d	
26) Propionitrile	0.00	54	0	N.D.	
27) 2,2-Dichloropropane	0.00	77	0	N.D.	
28) Methacrylonitrile	0.00	67	0	N.D. d	
29) Chloroform	0.00	83	0	N.D.	
31) Dibromofluoromethane	11.09	113	139945	51.02 ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.	
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
34) 1,1-Dichloropropene	0.00	75	0	N.D.	
35) Diethyl Ether	0.00	59	0	N.D.	
36) Methyl Acetate	0.00	74	0	N.D.	
37) Cyclohexane	0.00	56	0	N.D.	
39) Methyl Cyclohexane	0.00	55	0	N.D. d	
40) Carbon Tetrachloride	0.00	117	0	N.D.	
41) 1,2-Dichloroethane	0.00	62	0	N.D.	
42) Benzene	0.00	78	0	N.D. d	
43) Isobutyl Alcohol	0.00	43	0	N.D. d	
44) Trichloroethene	0.00	130	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	
46) Methyl Methacrylate	0.00	100	0	N.D.	
47) 1,4-Dioxane	0.00	88	0	N.D.	
48) Bromodichloromethane	0.00	83	0	N.D.	
49) Dibromomethane	0.00	93	0	N.D.	
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.	
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	
52) 2-Hexanone	0.00	43	0	N.D. d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU007.D Vial: 6
Acq On : 26 Apr 2021 9:58 am Operator: nmc
Sample : 1D26010-BLK1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 10:22 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

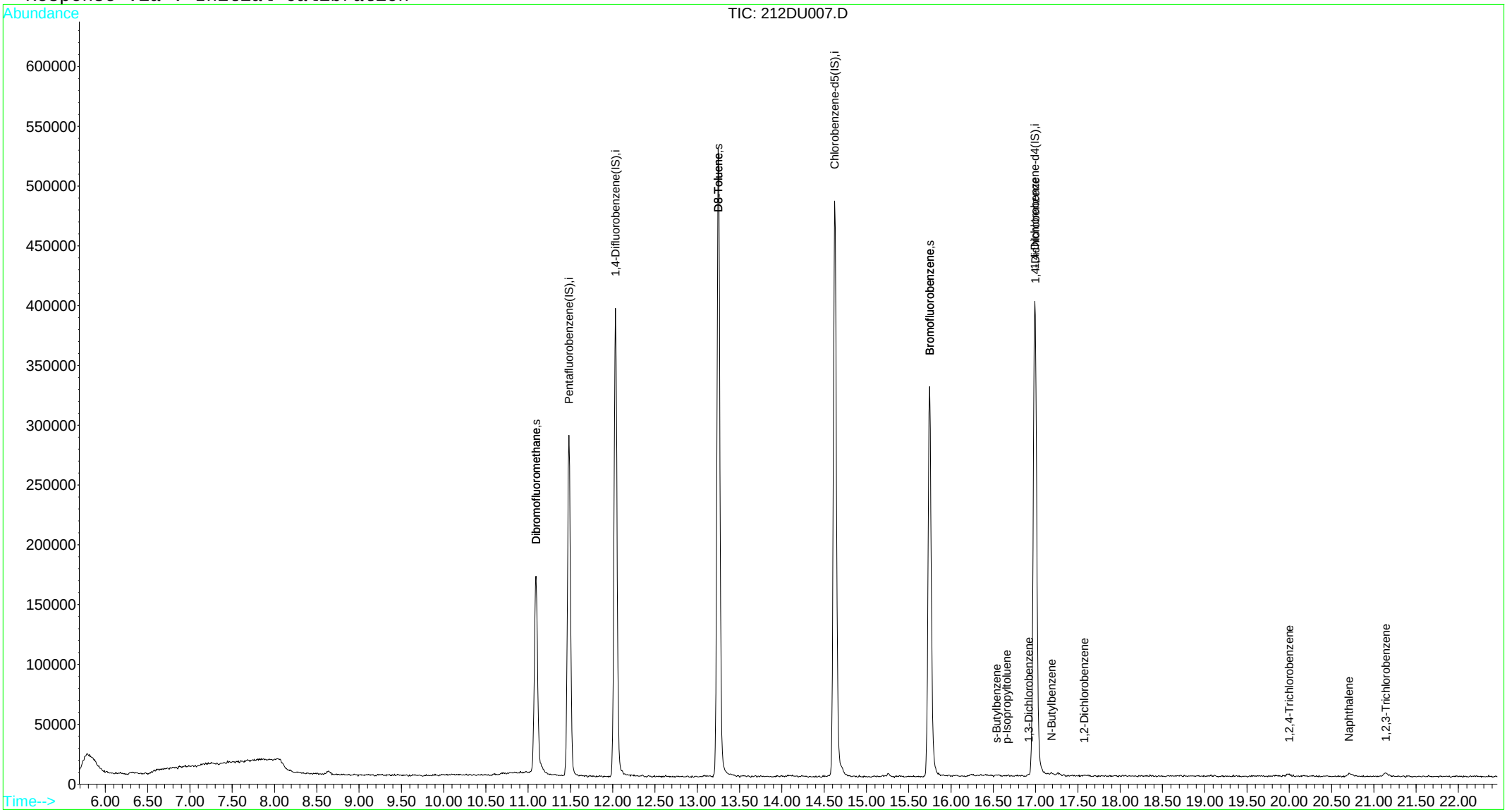
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	448029	58.42 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	178091	44.11 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D. d	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D. d	
85) s-Butylbenzene	16.53	105	1053	0.09 ug/kg#	57
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.66	119	956	0.09 ug/kg#	52
88) 1,3-Dichlorobenzene	16.92	146	630	0.11 ug/kg#	24
89) 1,4-Dichlorobenzene	17.00	146	742	0.13 ug/kg#	1
90) 1,2-Dichlorobenzene	17.58	146	670	0.13 ug/kg#	24
91) N-Butylbenzene	17.18	91	1272	0.15 ug/kg#	81
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.71	128	5268	1.12 ug/kg	100
94) 1,2,4-Trichlorobenzene	20.00	180	1495	0.55 ug/kg#	72
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.15	180	2135	1.00 ug/kg#	78

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU007.D Vial: 6
Acq On : 26 Apr 2021 9:58 am Operator: nmc
Sample : 1D26010-BLK1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 10:22 2021 Quant Results File: 030921.RES

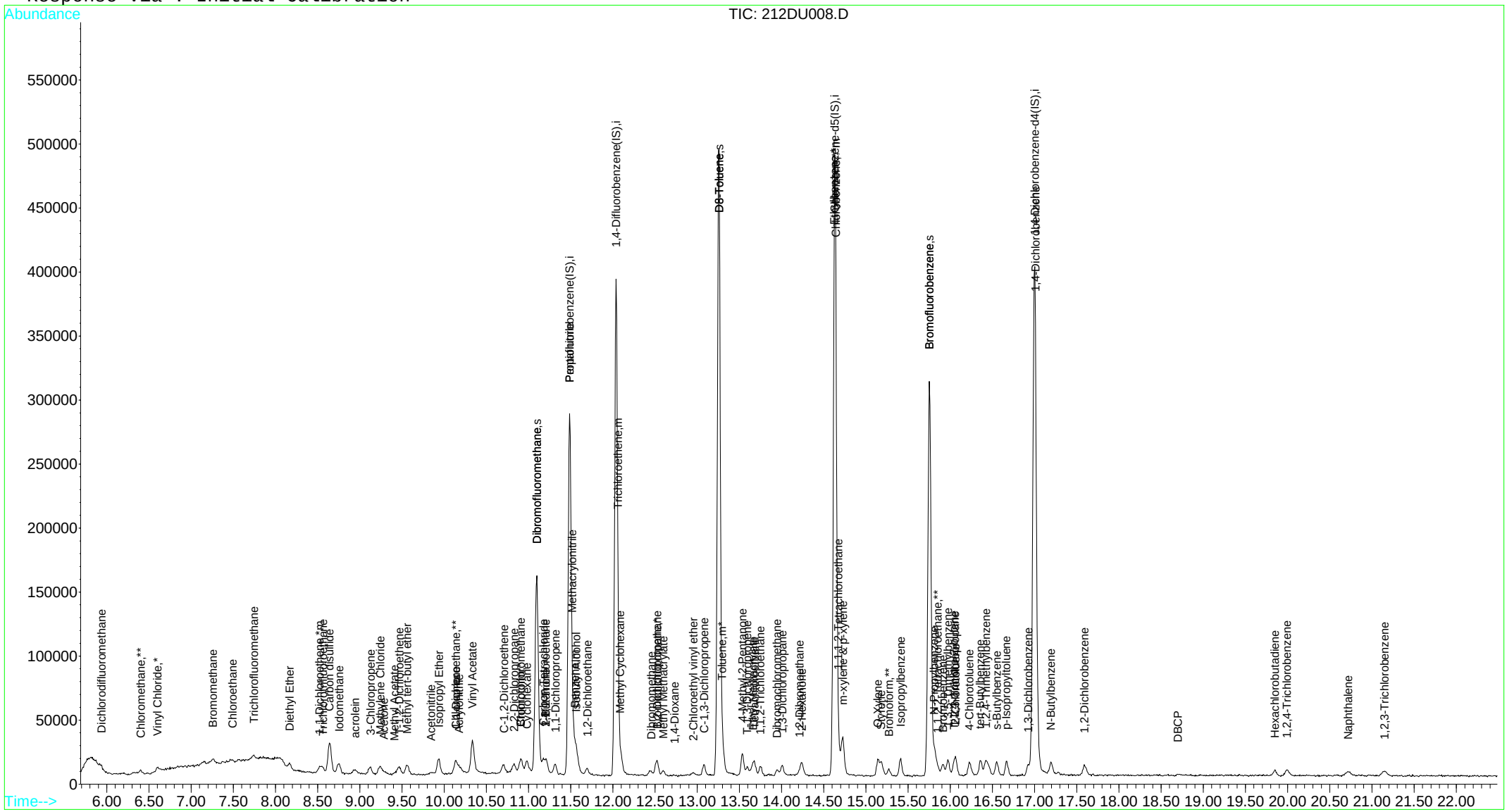
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU008.D Vial: 7
Acq On : 26 Apr 2021 10:27 am Operator: nmc
Sample : AA66091-CRL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 10:50 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU008.D Vial: 7
Acq On : 26 Apr 2021 10:27 am Operator: nmc
Sample : AA66091-CRL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 10:50 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	240466	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	403601	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	229823	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	191304	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	130322	48.50	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 97.00%			
54) D8-Toluene	13.25	98	422733	55.58	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 111.16%			
75) Bromofluorobenzene	15.75	95	169293	42.69	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.38%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.94	85	3996	0.77	ug/kg	94
3) Chloromethane	6.40	50	4893	0.90	ug/kg	93
4) Vinyl Chloride	6.59	62	4460	1.06	ug/kg	86
5) Bromomethane	7.25	96	3355	1.38	ug/kg#	56
6) Chloroethane	7.48	64	3196	1.45	ug/kg	90
7) Trichlorofluoromethane	7.74	101	3445	0.85	ug/kg	92
8) Trichlorotrifluoroethane	8.57	101	2490	0.97	ug/kg	85
9) acrolein	8.94	56	5559	7.86	ug/kg	93
10) Acetone	9.29	43	6177	6.70	ug/kg	90
11) 1,1-Dichloroethene	8.53	96	2511	1.06	ug/kg	89
12) 3-Chloropropene	9.12	76	2546	1.66	ug/kg	52
13) Acetonitrile	9.85	41	3237	8.35	ug/kg	70
14) Iodomethane	8.75	142	15172	4.43	ug/kg	82
15) Carbon disulfide	8.65	76	55617	6.90	ug/kg	100
16) Methylene Chloride	9.24	84	3891	1.27	ug/kg	93
17) Methyl tert-butyl ether	9.55	73	9107	1.16	ug/kg	85
18) Acrylonitrile	10.17	53	7626	4.62	ug/kg#	41
19) T-1,2-Dichloroethene	9.46	96	3453	1.36	ug/kg	92
20) Isopropyl Ether	9.93	45	15885	1.20	ug/kg	100
21) C-1,2-Dichloroethene	10.70	96	3819	1.39	ug/kg	93
22) 1,1-Dichloroethane	10.14	63	6803	1.26	ug/kg	79
23) Vinyl Acetate	10.34	43	45075	5.15	ug/kg	98
24) Chloroprene	10.13	88	2278	1.01	ug/kg#	1
25) 2-Butanone	11.21	72	1786	6.11	ug/kg#	66
26) Propionitrile	11.49	54	3975	9.00	ug/kg	100
27) 2,2-Dichloropropane	10.83	77	5343	1.30	ug/kg#	1
28) Methacrylonitrile	11.52	67	13561	11.17	ug/kg	88
29) Chloroform	10.91	83	7133	1.43	ug/kg	89
31) Dibromofluoromethane	11.10	113	130322	48.50	ug/kg	100
32) Bromochloromethane	10.91	128	1940	1.18	ug/kg	97
33) 1,1,1-Trichloroethane	11.21	97	4555	1.16	ug/kg	91
34) 1,1-Dichloropropene	11.32	75	4884	1.27	ug/kg	87
35) Diethyl Ether	8.17	59	3549	1.27	ug/kg#	84
36) Methyl Acetate	9.41	74	569	1.08	ug/kg#	90
37) Cyclohexane	10.98	56	5443	1.18	ug/kg	97
39) Methyl Cyclohexane	12.09	55	3995	1.20	ug/kg	93
40) Carbon Tetrachloride	11.18	117	4133	1.10	ug/kg	98
41) 1,2-Dichloroethane	11.71	62	4866	1.26	ug/kg	87
42) Benzene	11.56	78	15514	1.79	ug/kg#	28
43) Isobutyl Alcohol	11.57	43	4975	21.48	ug/kg#	1
44) Trichloroethene	12.07	130	3479	1.34	ug/kg#	1
45) 1,2-Dichloropropane	12.52	63	4581	1.55	ug/kg	94
46) Methyl Methacrylate	12.59	100	701	0.93	ug/kg#	54
47) 1,4-Dioxane	12.73	88	124	5.59	ug/kg#	1
48) Bromodichloromethane	12.52	83	4856	1.41	ug/kg	91
49) Dibromomethane	12.45	93	2429	1.39	ug/kg	99
50) 4-Methyl-2-Pentanone	13.54	100	2473	6.93	ug/kg	74
51) 2-Chloroethyl vinyl ether	12.95	63	1675	2.20	ug/kg	84
52) 2-Hexanone	14.24	43	12093	5.59	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU008.D Vial: 7
Acq On : 26 Apr 2021 10:27 am Operator: nmc
Sample : AA66091-CRL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 26 10:50 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.08	75	6686	1.41	ug/kg	91
55) D8-Toluene	13.25	98	422733	55.58	ug/kg	94
57) Toluene	13.30	92	8002	1.26	ug/kg	97
58) Ethyl Methacrylate	13.65	69	4224	0.94	ug/kg#	99
59) T-1,3-Dichloropropene	13.60	75	5918	1.29	ug/kg	96
60) 1,1,2-Trichloroethane	13.75	97	2919	1.18	ug/kg	89
61) 1,3-Dichloropropane	14.01	76	6928	1.32	ug/kg	91
62) Tetrachloroethene	13.68	164	2891	1.50	ug/kg	87
63) Dibromochloromethane	13.94	129	3380	0.99	ug/kg#	88
64) 1,2-Dibromoethane	14.21	107	3162	1.04	ug/kg#	97
65) Chlorobenzene	14.65	112	8252	1.16	ug/kg#	54
66) 1,1,1,2-Tetrachloroethane	14.68	131	3062	1.08	ug/kg#	1
67) Ethylbenzene	14.62	106	4108	1.13	ug/kg	80
68) m-xylene & p-xylene	14.73	106	10317	2.31	ug/kg	96
69) O-Xylene	15.14	106	4775	1.09	ug/kg	83
70) Bromoform	15.27	173	2150	1.22	ug/kg	92
71) Styrene	15.18	104	8397	1.12	ug/kg	95
72) Isopropylbenzene	15.41	105	12247	1.11	ug/kg	99
73) 1,2,3-Trichloropropane	16.05	75	5358	1.36	ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.86	83	4221	1.33	ug/kg	95
76) Bromofluorobenzene	15.75	95	169293	42.69	ug/kg#	85
77) T-1,4-dichloro-2-butene	16.03	53	1102	1.07	ug/kg#	70
78) N-Propylbenzene	15.82	91	15406	1.23	ug/kg	93
80) Bromobenzene	15.92	156	3753	1.22	ug/kg	95
81) 1,3,5-Trimethylbenzene	15.97	105	9244	0.97	ug/kg	98
82) 2-Chlorotoluene	16.06	91	9570	1.10	ug/kg	92
83) 4-Chlorotoluene	16.23	91	9800	1.09	ug/kg	94
84) 1,2,4-Trimethylbenzene	16.42	105	9641	1.00	ug/kg	99
85) s-Butylbenzene	16.55	105	11773	1.05	ug/kg	99
86) tert-Butylbenzene	16.36	119	8725	1.04	ug/kg	96
87) p-Isopropyltoluene	16.66	119	9537	0.95	ug/kg	96
88) 1,3-Dichlorobenzene	16.92	146	6248	1.17	ug/kg	98
89) 1,4-Dichlorobenzene	17.02	146	6767	1.22	ug/kg	76
90) 1,2-Dichlorobenzene	17.59	146	5798	1.14	ug/kg	95
91) N-Butylbenzene	17.19	91	8815	1.04	ug/kg	96
92) DBCP	18.70	75	636	1.01	ug/kg	90
93) Naphthalene	20.72	128	7610	1.66	ug/kg	100
94) 1,2,4-Trichlorobenzene	20.00	180	3304	1.25	ug/kg	92
95) Hexachlorobutadiene	19.86	225	1709	1.46	ug/kg	98
96) 1,2,3-Trichlorobenzene	21.15	180	2996	1.44	ug/kg	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU009.D Vial: 8
Acq On : 26 Apr 2021 10:55 am Operator: nmc
Sample : AE02766-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:51 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	247273	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	408798	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234492	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	193819	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	131562	47.61	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 95.22%			
54) D8-Toluene	13.25	98	429495	55.76	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 111.52%			
75) Bromofluorobenzene	15.74	95	168220	41.58	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.16%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	6586	1.53	ug/kg#	86
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	1072	0.41	ug/kg#	70
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	49192	17.36	ug/kg	95
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	131562	47.61	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	12.06	130	5812	2.21	ug/kg#	27
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042621\212DU009.D Vial: 8
Acq On : 26 Apr 2021 10:55 am Operator: nmc
Sample : AE02766-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:51 2021 Quant Results File: 030921.RES

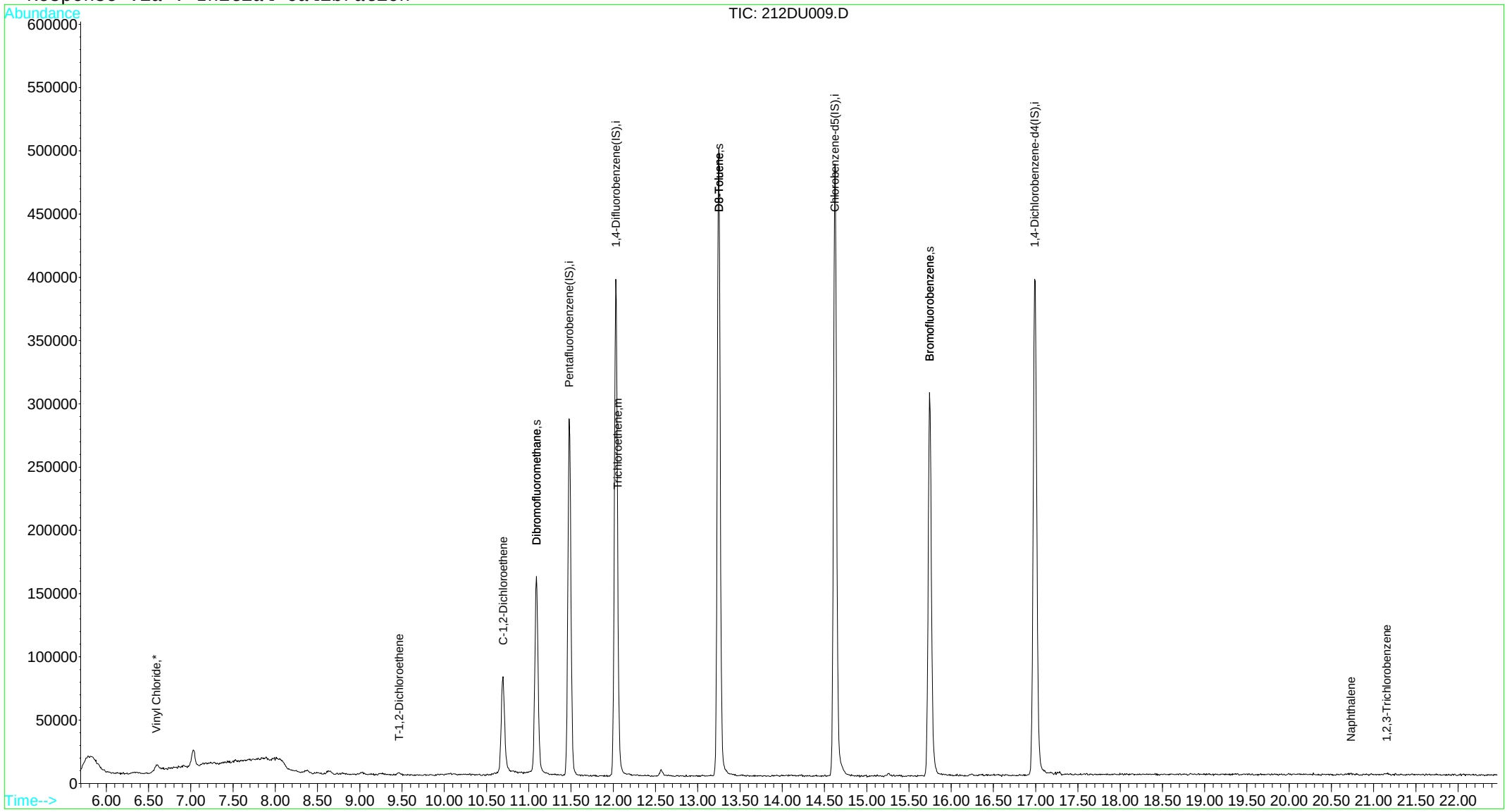
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	429495	55.76 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168220	41.58 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.72	128	1930	0.42 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.15	180	890	0.42 ug/kg#	11

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU009.D Vial: 8
Acq On : 26 Apr 2021 10:55 am Operator: nmc
Sample : AE02766-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:51 2021 Quant Results File: 030921.RES

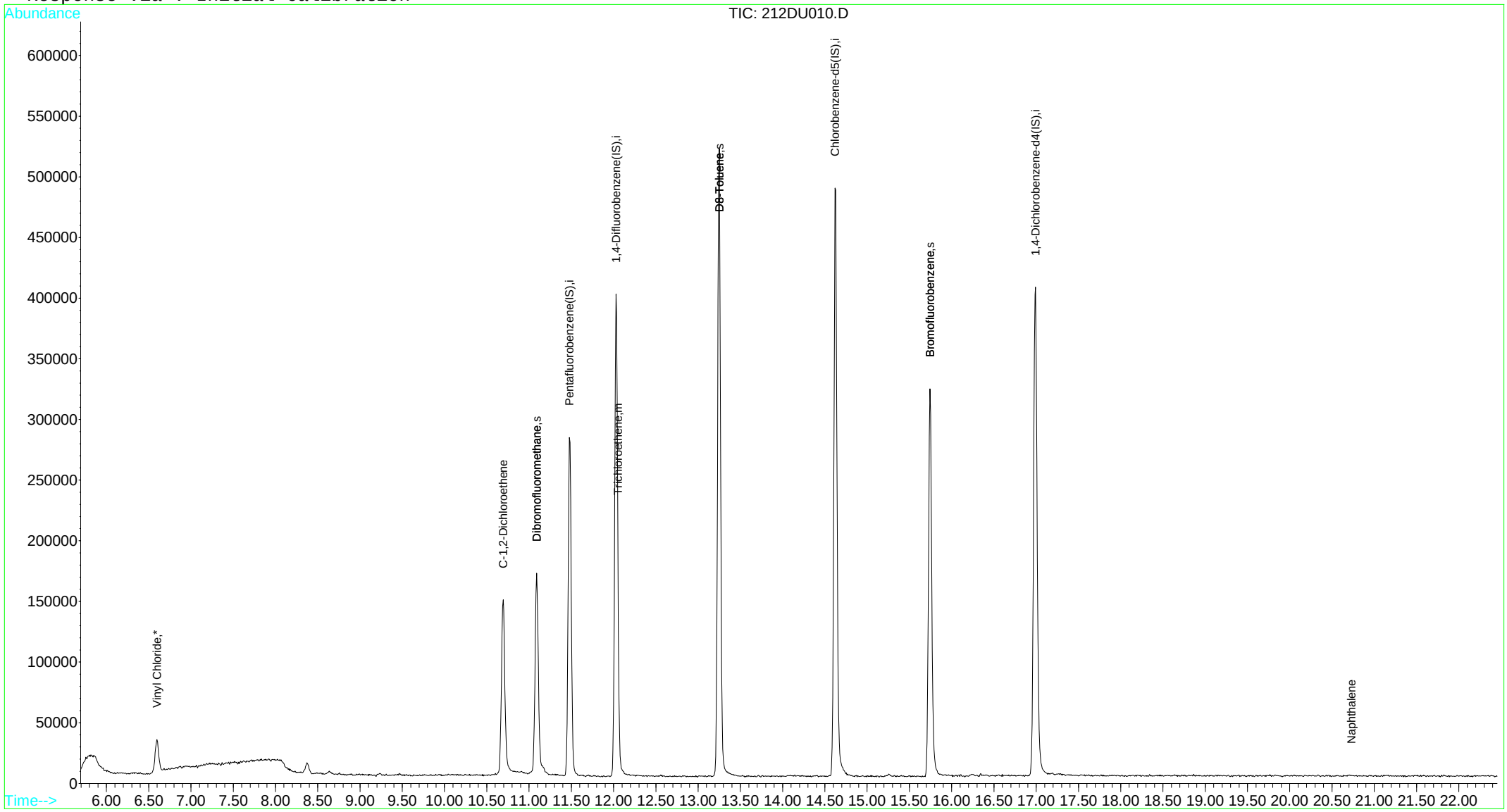
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU010.D Vial: 9
Acq On : 26 Apr 2021 11:24 am Operator: nmc
Sample : AE02766-02@20 Inst : OVGCMS2
Misc : 20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:51 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU010.D Vial: 9
Acq On : 26 Apr 2021 11:24 am Operator: nmc
Sample : AE02766-02@20 Inst : OVGCMS2
Misc : 20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:51 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	248812	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	413965	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235856	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	195212	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	136504	49.09	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 98.18%			
54) D8-Toluene	13.25	98	444192	56.94	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.88%			
75) Bromofluorobenzene	15.74	95	174725	42.94	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.88%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	42588	9.82	ug/kg	100
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D. d		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	93044	32.63	ug/kg	94
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	136504	49.09	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	1422	0.54	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU010.D Vial: 9
Acq On : 26 Apr 2021 11:24 am Operator: nmc
Sample : AE02766-02@20 Inst : OVGCMS2
Misc : 20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:51 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	444192	56.94 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	174725	42.94 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.73	128	1240	0.27 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU011.D Vial: 10
Acq On : 26 Apr 2021 11:53 am Operator: nmc
Sample : AE02766-03 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:52 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	239954	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	404276	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	233985	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	194101	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	125871	46.94	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 93.88%			
54) D8-Toluene	13.25	98	422389	55.45	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.90%			
75) Bromofluorobenzene	15.75	95	170520	42.24	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	179174	42.83	ug/kg	98
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D. d		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	8.52	96	914	0.39	ug/kg#	9
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	4138	1.63	ug/kg	95
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	669332	243.40	ug/kg	95
22) 1,1-Dichloroethane	10.13	63	1260	0.23	ug/kg#	67
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	125871	46.94	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	136149	52.46	ug/kg	99
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU011.D Vial: 10
Acq On : 26 Apr 2021 11:53 am Operator: nmc
Sample : AE02766-03 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:52 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

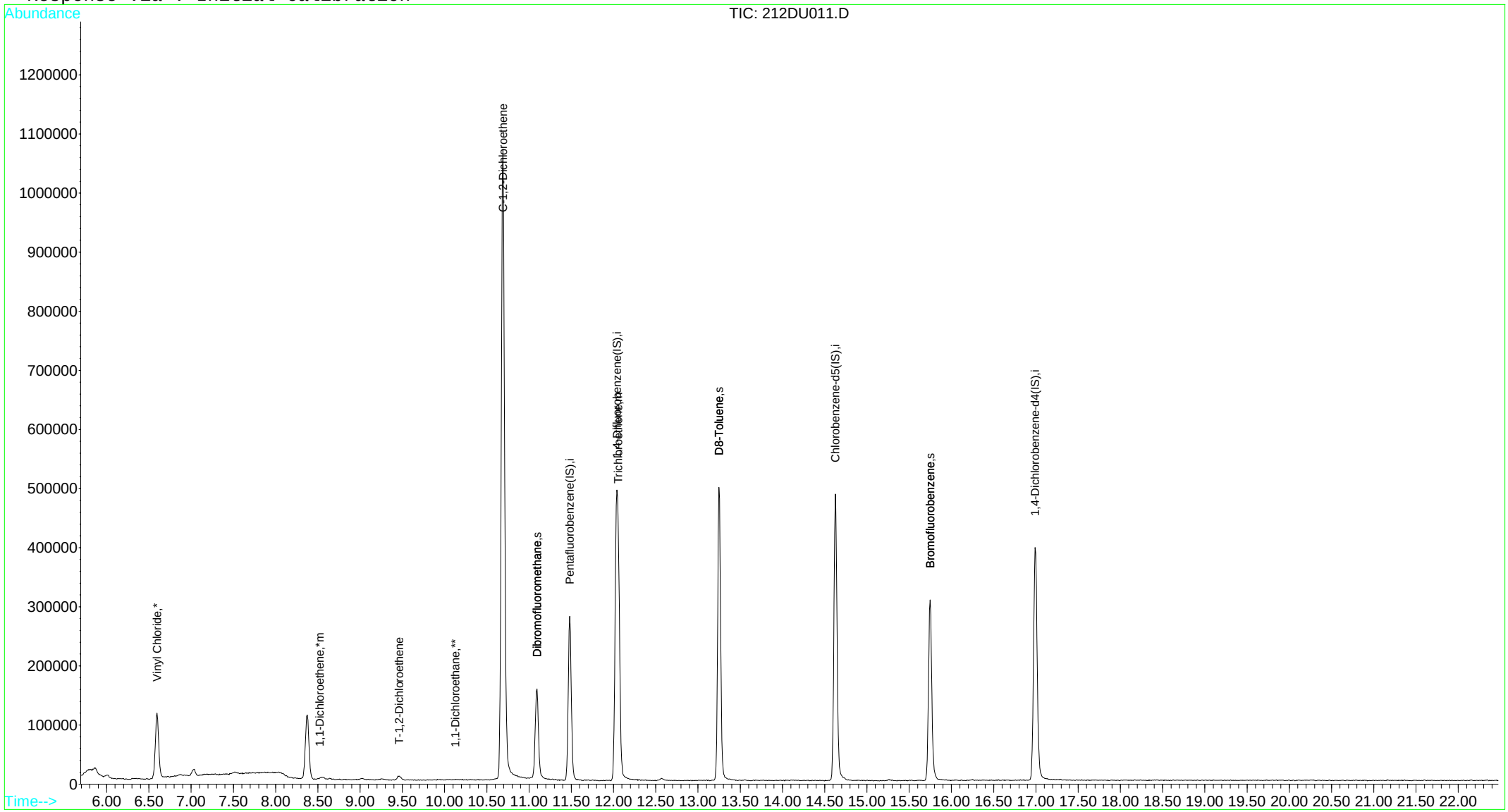
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	422389	55.45 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	170520	42.24 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU011.D Vial: 10
Acq On : 26 Apr 2021 11:53 am Operator: nmc
Sample : AE02766-03 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:52 2021 Quant Results File: 030921.RES

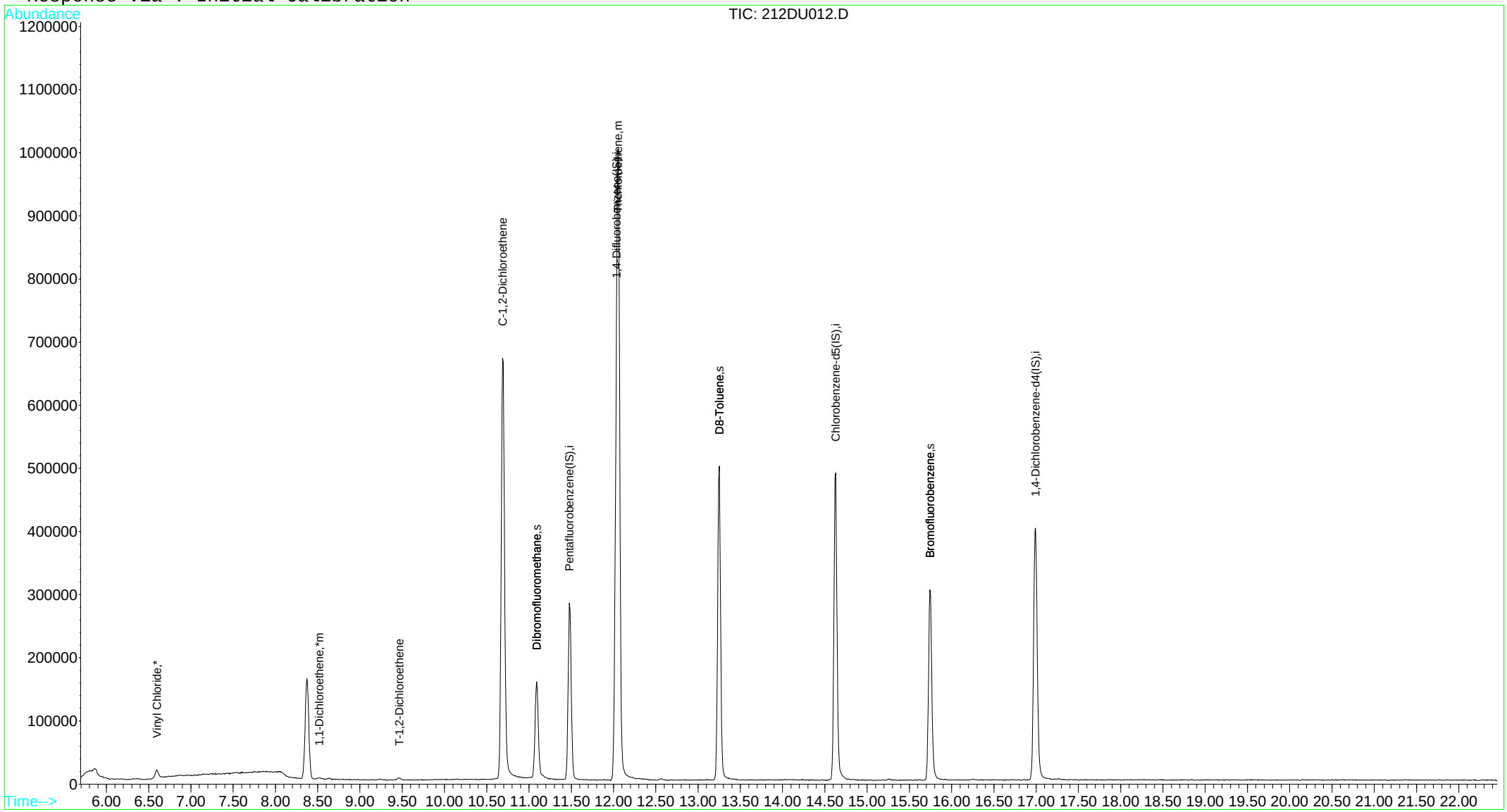
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU012.D Vial: 11
Acq On : 26 Apr 2021 12:21 pm Operator: nmc
Sample : AE02766-06@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:53 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU012.D Vial: 11
Acq On : 26 Apr 2021 12:21 pm Operator: nmc
Sample : AE02766-06@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:53 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	244576	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	406912	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235585	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198728	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	128939	47.18	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 94.36%			
54) D8-Toluene	13.25	98	422696	55.13	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.26%			
75) Bromofluorobenzene	15.74	95	168665	41.49	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	19756	4.63	ug/kg	96
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D. d		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	8.51	96	1181	0.49	ug/kg	100
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	1926	0.74	ug/kg	96
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	425024	151.64	ug/kg	95
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	128939	47.18	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	410124	157.01	ug/kg	98
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU012.D Vial: 11
Acq On : 26 Apr 2021 12:21 pm Operator: nmc
Sample : AE02766-06@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:53 2021 Quant Results File: 030921.RES

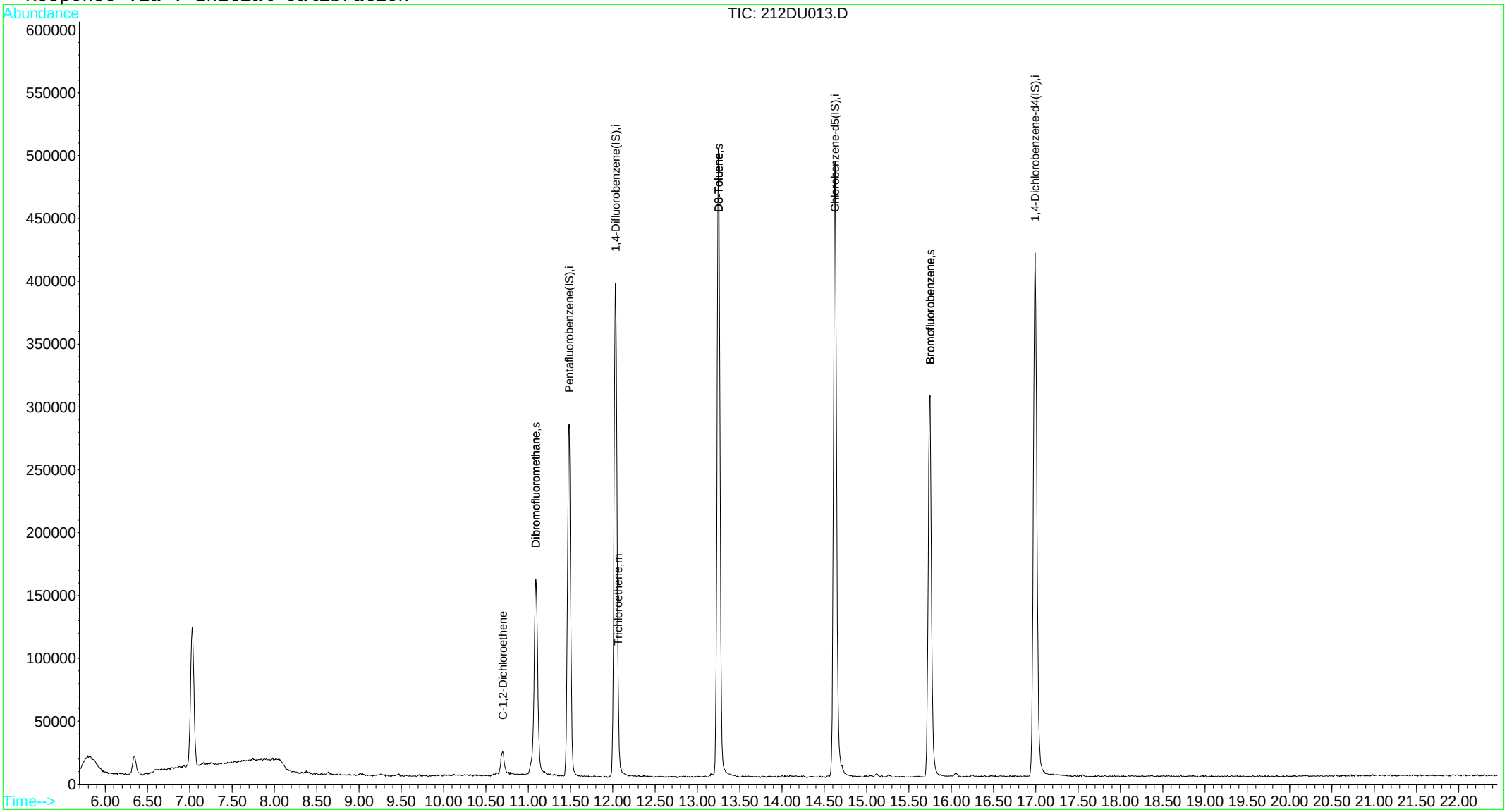
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	422696	55.13 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168665	41.49 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU013.D Vial: 12
Acq On : 26 Apr 2021 12:50 pm Operator: nmc
Sample : AE02766-08 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:53 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU013.D Vial: 12
Acq On : 26 Apr 2021 12:50 pm Operator: nmc
Sample : AE02766-08 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:53 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	245644	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	412582	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	238185	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198102	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	132067	48.11	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.22%			
54) D8-Toluene	13.25	98	424813	54.64	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 109.28%			
75) Bromofluorobenzene	15.75	95	167540	40.77	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 81.54%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	11562	4.11	ug/kg	100
22) 1,1-Dichloroethane	0.00	63	0	N.D. d		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	132067	48.11	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	2489	0.94	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU013.D Vial: 12
Acq On : 26 Apr 2021 12:50 pm Operator: nmc
Sample : AE02766-08 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:53 2021 Quant Results File: 030921.RES

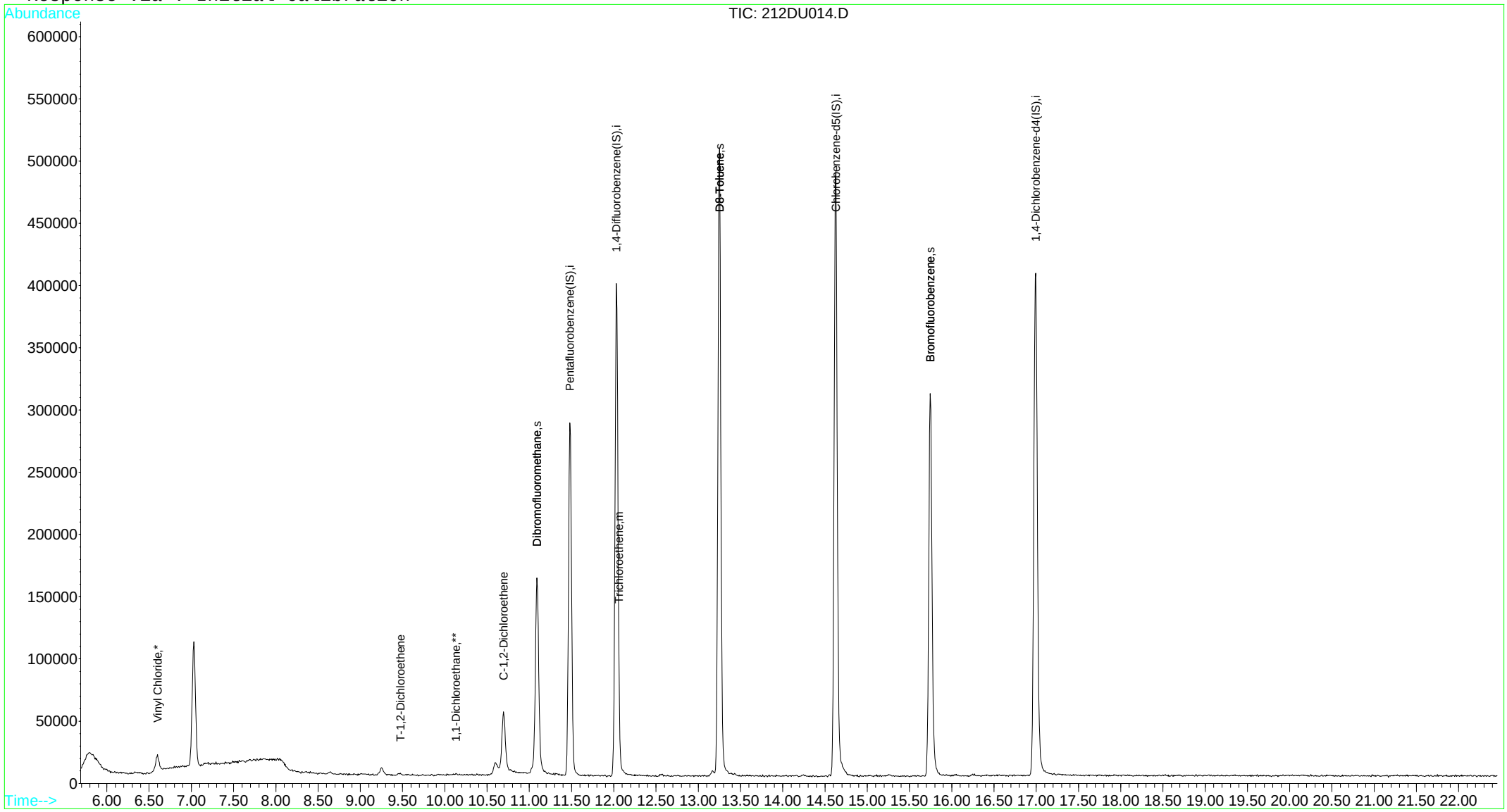
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53)	C-1,3-Dichloropropene	0.00	75	0	N.D.	
55)	D8-Toluene	13.25	98	424813	54.64 ug/kg	94
57)	Toluene	0.00	92	0	N.D.	
58)	Ethyl Methacrylate	0.00	69	0	N.D.	
59)	T-1,3-Dichloropropene	0.00	75	0	N.D.	
60)	1,1,2-Trichloroethane	0.00	97	0	N.D.	
61)	1,3-Dichloropropane	0.00	76	0	N.D.	
62)	Tetrachloroethene	0.00	164	0	N.D.	
63)	Dibromochloromethane	0.00	129	0	N.D.	
64)	1,2-Dibromoethane	0.00	107	0	N.D.	
65)	Chlorobenzene	0.00	112	0	N.D.	
66)	1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67)	Ethylbenzene	0.00	106	0	N.D.	
68)	m-xylene & p-xylene	0.00	106	0	N.D.	
69)	O-Xylene	0.00	106	0	N.D.	
70)	Bromoform	0.00	173	0	N.D.	
71)	Styrene	0.00	104	0	N.D.	
72)	Isopropylbenzene	0.00	105	0	N.D.	
73)	1,2,3-Trichloropropane	0.00	75	0	N.D.	
74)	1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76)	Bromofluorobenzene	15.75	95	167540	40.77 ug/kg#	86
77)	T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78)	N-Propylbenzene	0.00	91	0	N.D.	
80)	Bromobenzene	0.00	156	0	N.D.	
81)	1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82)	2-Chlorotoluene	0.00	91	0	N.D.	
83)	4-Chlorotoluene	0.00	91	0	N.D.	
84)	1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85)	s-Butylbenzene	0.00	105	0	N.D.	
86)	tert-Butylbenzene	0.00	119	0	N.D.	
87)	p-Isopropyltoluene	0.00	119	0	N.D.	
88)	1,3-Dichlorobenzene	0.00	146	0	N.D.	
89)	1,4-Dichlorobenzene	0.00	146	0	N.D.	
90)	1,2-Dichlorobenzene	0.00	146	0	N.D.	
91)	N-Butylbenzene	0.00	91	0	N.D.	
92)	DBCP	0.00	75	0	N.D.	
93)	Naphthalene	0.00	128	0	N.D.	
94)	1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95)	Hexachlorobutadiene	0.00	225	0	N.D.	
96)	1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU014.D Vial: 13
Acq On : 26 Apr 2021 1:18 pm Operator: nmc
Sample : AE02766-09 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU014.D Vial: 13
Acq On : 26 Apr 2021 1:18 pm Operator: nmc
Sample : AE02766-09 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	246682	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	410929	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	236466	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198382	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	130877	47.48	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 94.96%			
54) D8-Toluene	13.25	98	427809	55.25	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.50%			
75) Bromofluorobenzene	15.74	95	169749	41.61	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.22%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	18616	4.33	ug/kg	99
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	741	0.28	ug/kg#	69
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	30582	10.82	ug/kg	93
22) 1,1-Dichloroethane	10.14	63	1831	0.33	ug/kg#	58
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	130877	47.48	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	926	0.35	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU014.D Vial: 13
Acq On : 26 Apr 2021 1:18 pm Operator: nmc
Sample : AE02766-09 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53)	C-1,3-Dichloropropene	0.00	75	0	N.D.	
55)	D8-Toluene	13.25	98	427809	55.25 ug/kg	94
57)	Toluene	0.00	92	0	N.D.	
58)	Ethyl Methacrylate	0.00	69	0	N.D.	
59)	T-1,3-Dichloropropene	0.00	75	0	N.D.	
60)	1,1,2-Trichloroethane	0.00	97	0	N.D.	
61)	1,3-Dichloropropane	0.00	76	0	N.D.	
62)	Tetrachloroethene	0.00	164	0	N.D.	
63)	Dibromochloromethane	0.00	129	0	N.D.	
64)	1,2-Dibromoethane	0.00	107	0	N.D.	
65)	Chlorobenzene	0.00	112	0	N.D.	
66)	1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67)	Ethylbenzene	0.00	106	0	N.D.	
68)	m-xylene & p-xylene	0.00	106	0	N.D.	
69)	O-Xylene	0.00	106	0	N.D.	
70)	Bromoform	0.00	173	0	N.D.	
71)	Styrene	0.00	104	0	N.D.	
72)	Isopropylbenzene	0.00	105	0	N.D.	
73)	1,2,3-Trichloropropane	0.00	75	0	N.D.	
74)	1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76)	Bromofluorobenzene	15.74	95	169749	41.61 ug/kg#	85
77)	T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78)	N-Propylbenzene	0.00	91	0	N.D.	
80)	Bromobenzene	0.00	156	0	N.D.	
81)	1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82)	2-Chlorotoluene	0.00	91	0	N.D.	
83)	4-Chlorotoluene	0.00	91	0	N.D.	
84)	1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85)	s-Butylbenzene	0.00	105	0	N.D.	
86)	tert-Butylbenzene	0.00	119	0	N.D.	
87)	p-Isopropyltoluene	0.00	119	0	N.D.	
88)	1,3-Dichlorobenzene	0.00	146	0	N.D.	
89)	1,4-Dichlorobenzene	0.00	146	0	N.D.	
90)	1,2-Dichlorobenzene	0.00	146	0	N.D.	
91)	N-Butylbenzene	0.00	91	0	N.D.	
92)	DBCP	0.00	75	0	N.D.	
93)	Naphthalene	0.00	128	0	N.D.	
94)	1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95)	Hexachlorobutadiene	0.00	225	0	N.D.	
96)	1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU015.D Vial: 14
Acq On : 26 Apr 2021 1:47 pm Operator: nmc
Sample : AE02766-10@5 Inst : OVGCMS2
Misc : 5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	243822	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	407473	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	233995	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	195792	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	139059	51.04	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.08%			
54) D8-Toluene	13.25	98	449962	58.60	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.20%			
75) Bromofluorobenzene	15.74	95	178620	44.24	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	6539	1.54	ug/kg	90
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D. d		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	35501	12.70	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	139059	51.04	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	6812	2.60	ug/kg#	38
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU015.D Vial: 14
Acq On : 26 Apr 2021 1:47 pm Operator: nmc
Sample : AE02766-10@5 Inst : OVGCMS2
Misc : 5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

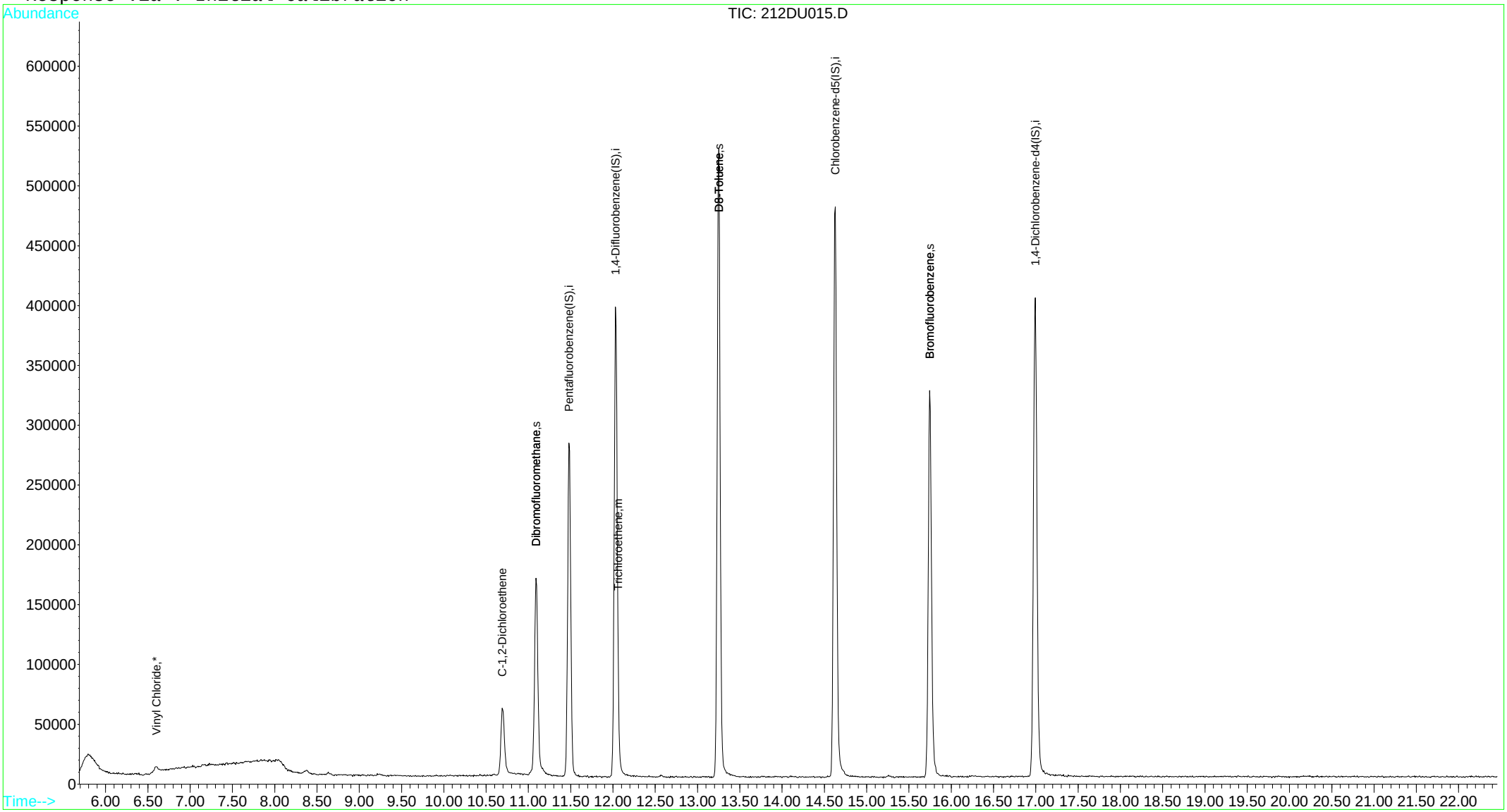
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	449962	58.60 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	178620	44.24 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU015.D Vial: 14
Acq On : 26 Apr 2021 1:47 pm Operator: nmc
Sample : AE02766-10@5 Inst : OVGCMS2
Misc : 5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

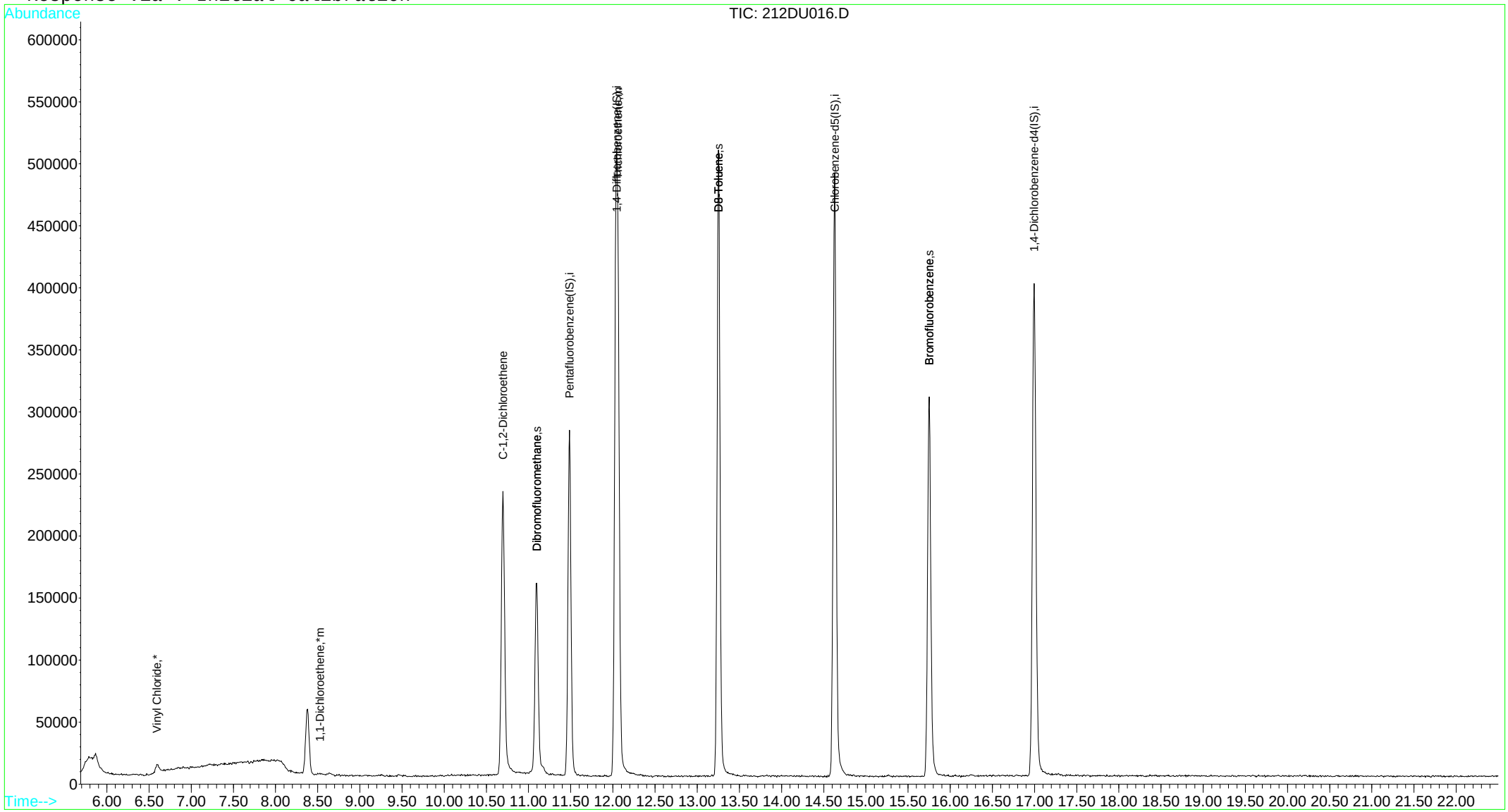
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU016.D Vial: 15
Acq On : 26 Apr 2021 2:16 pm Operator: nmc
Sample : AE02766-11@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU016.D Vial: 15
Acq On : 26 Apr 2021 2:16 pm Operator: nmc
Sample : AE02766-11@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	241896	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	403354	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	232112	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	194916	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	131643	48.70	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 97.40%			
54) D8-Toluene	13.25	98	421266	55.43	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.86%			
75) Bromofluorobenzene	15.75	95	169865	42.42	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	9559	2.27	ug/kg	87
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	8.52	96	613	0.26	ug/kg#	37
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	146109	52.71	ug/kg	94
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	131643	48.70	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	147962	57.14	ug/kg	99
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU016.D Vial: 15
Acq On : 26 Apr 2021 2:16 pm Operator: nmc
Sample : AE02766-11@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:54 2021 Quant Results File: 030921.RES

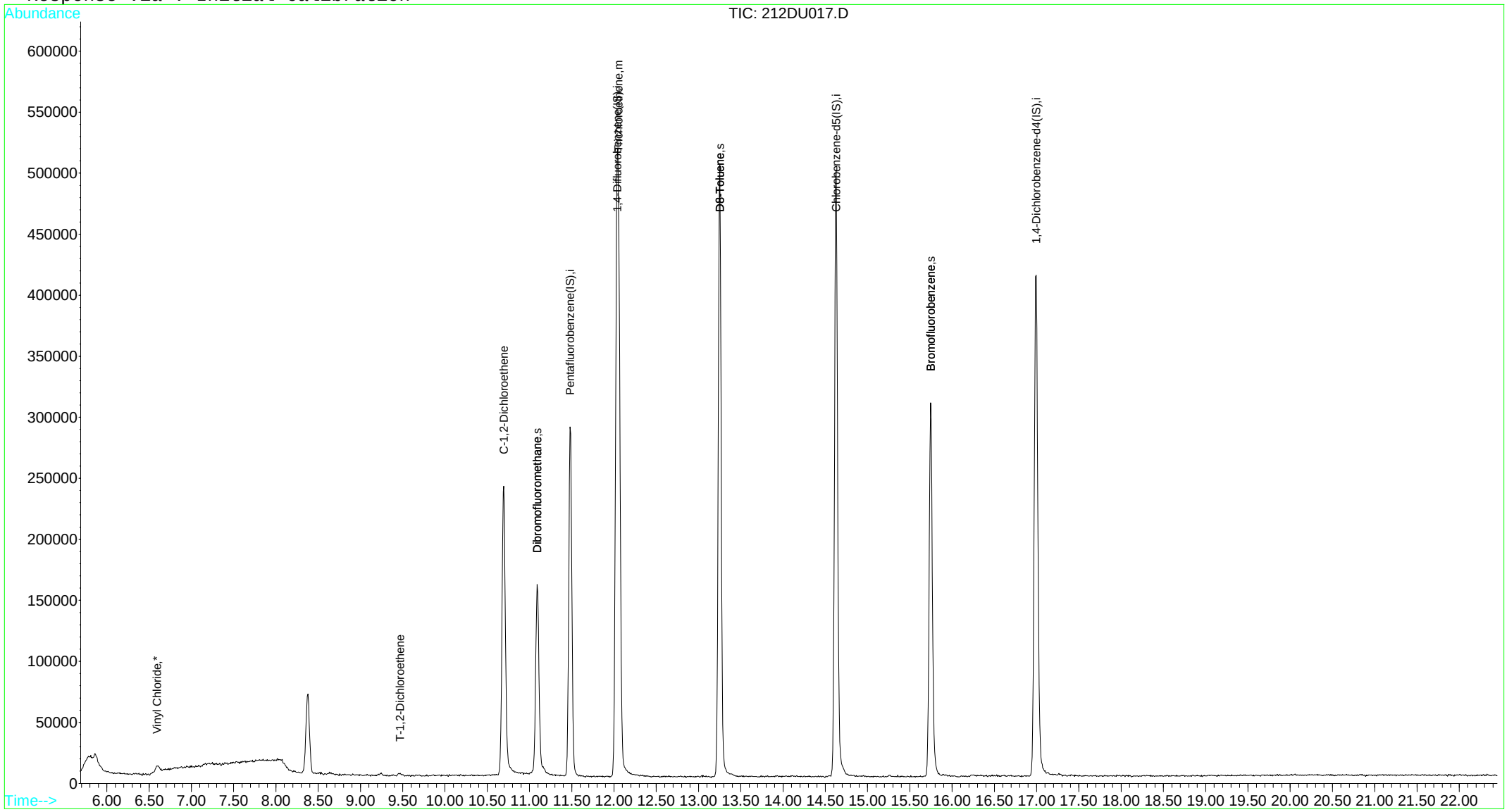
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	421266	55.43 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	169865	42.42 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU017.D Vial: 16
Acq On : 26 Apr 2021 2:44 pm Operator: nmc
Sample : AE02766-12@100 Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU017.D Vial: 16
Acq On : 26 Apr 2021 2:44 pm Operator: nmc
Sample : AE02766-12@100 Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	251237	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	417015	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	239541	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	201215	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	131966	47.00	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 94.00%			
54) D8-Toluene	13.25	98	427445	54.40	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 108.80%			
75) Bromofluorobenzene	15.74	95	168815	40.85	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 81.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.59	62	7542	1.72	ug/kg	89
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D. d		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	922	0.35	ug/kg#	69
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	150979	52.44	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	131966	47.00	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	145307	54.28	ug/kg	99
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU017.D Vial: 16
Acq On : 26 Apr 2021 2:44 pm Operator: nmc
Sample : AE02766-12@100 Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	427445	54.40 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168815	40.85 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU018.D Vial: 17
Acq On : 26 Apr 2021 3:13 pm Operator: nmc
Sample : AE02766-13 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	246438	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	410166	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235790	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198830	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	133283	48.40	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.80%			
54) D8-Toluene	13.25	98	424659	54.94	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 109.88%			
75) Bromofluorobenzene	15.75	95	169712	41.72	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.44%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	3878	0.90	ug/kg#	85
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	6732	2.38	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D. d		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	133283	48.40	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	1238	0.47	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	12.72	88	859	38.11	ug/kg	93
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042621\212DU018.D Vial: 17
Acq On : 26 Apr 2021 3:13 pm Operator: nmc
Sample : AE02766-13 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

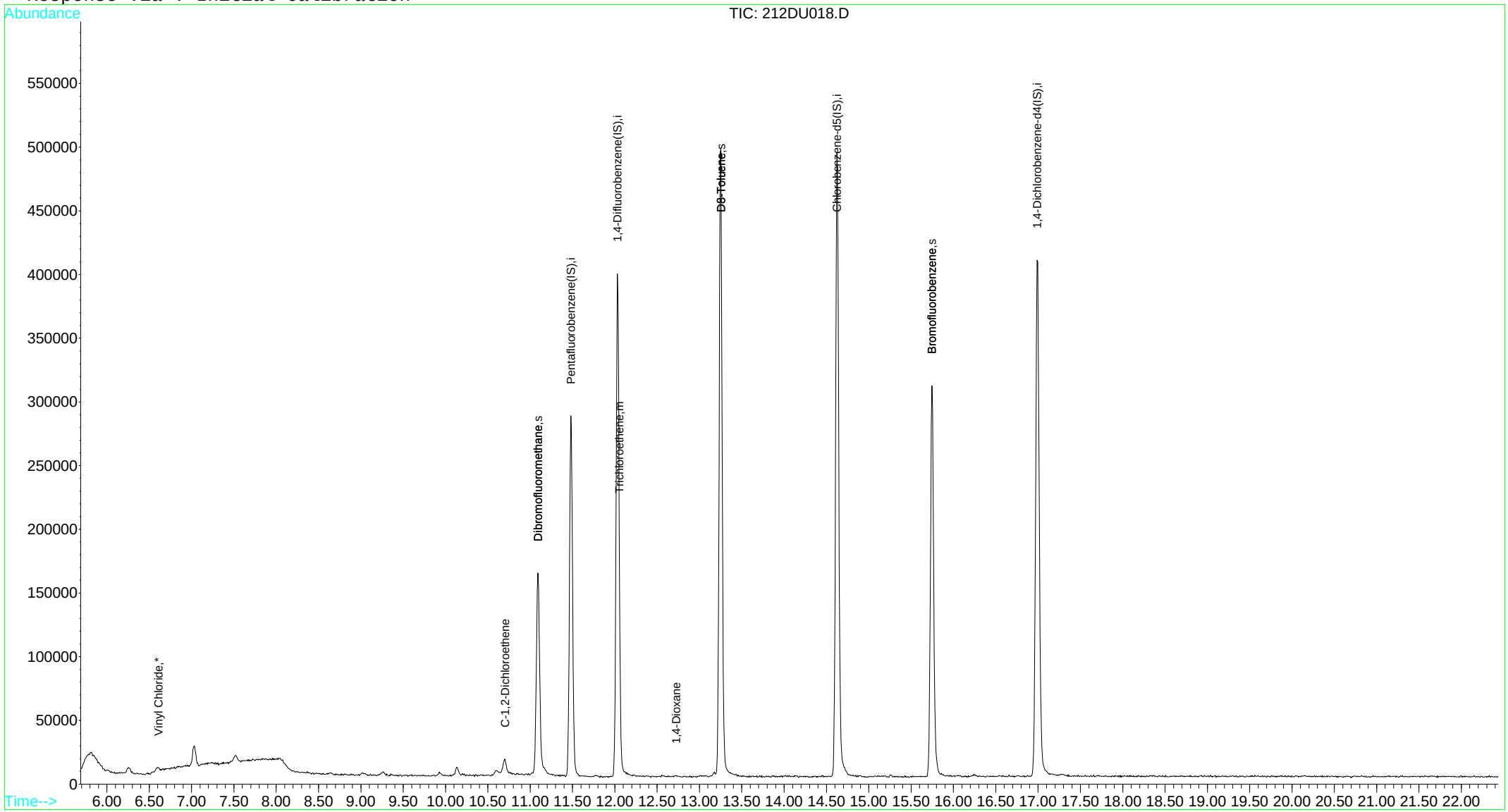
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	424659	54.94 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	169712	41.72 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU018.D Vial: 17
Acq On : 26 Apr 2021 3:13 pm Operator: nmc
Sample : AE02766-13 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

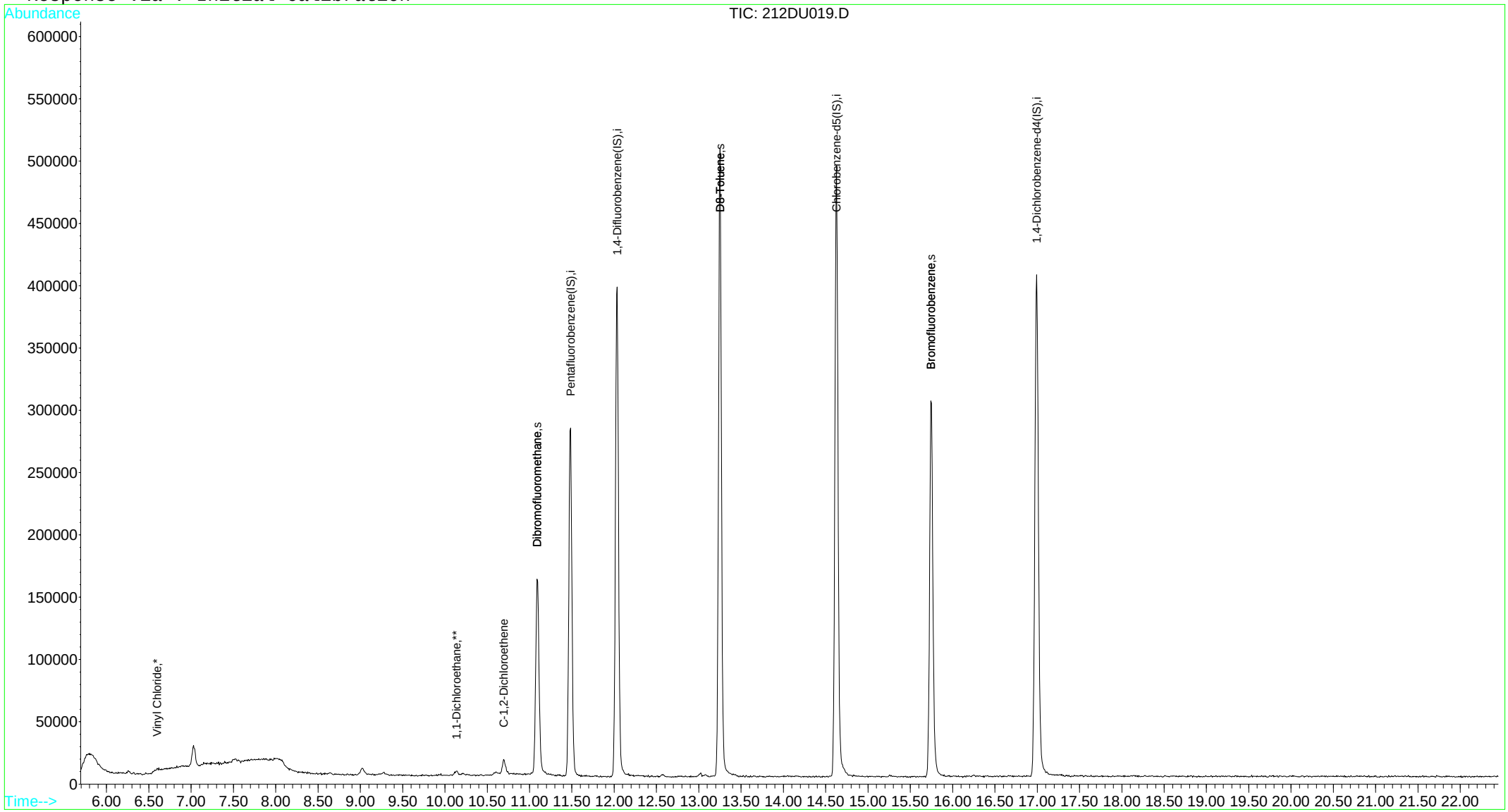
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU019.D Vial: 18
Acq On : 26 Apr 2021 3:41 pm Operator: nmc
Sample : AE02766-14 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU019.D Vial: 18
Acq On : 26 Apr 2021 3:41 pm Operator: nmc
Sample : AE02766-14 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	244179	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	410483	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	236047	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	197245	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	133724	49.01	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 98.02%			
54) D8-Toluene	13.25	98	429909	55.58	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 111.16%			
75) Bromofluorobenzene	15.74	95	168962	41.49	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	2277	0.53	ug/kg#	88
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	6899	2.47	ug/kg	94
22) 1,1-Dichloroethane	10.14	63	5436	0.99	ug/kg	87
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D. d		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	133724	49.01	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042621\212DU019.D Vial: 18
Acq On : 26 Apr 2021 3:41 pm Operator: nmc
Sample : AE02766-14 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:55 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	429909	55.58 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168962	41.49 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU020.D Vial: 19
Acq On : 26 Apr 2021 4:10 pm Operator: nmc
Sample : AE02766-15 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:56 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	245225	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	410506	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	236187	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	197387	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	139971	51.08	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.16%			
54) D8-Toluene	13.25	98	452502	58.50	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.00%			
75) Bromofluorobenzene	15.75	95	178458	43.79	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.58%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.60	62	92810	21.71	ug/kg	99
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	1097	0.42	ug/kg	94
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	1644	0.58	ug/kg	86
22) 1,1-Dichloroethane	10.13	63	58993	10.74	ug/kg	99
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	139971	51.08	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D. d		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU020.D Vial: 19
Acq On : 26 Apr 2021 4:10 pm Operator: nmc
Sample : AE02766-15 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:56 2021 Quant Results File: 030921.RES

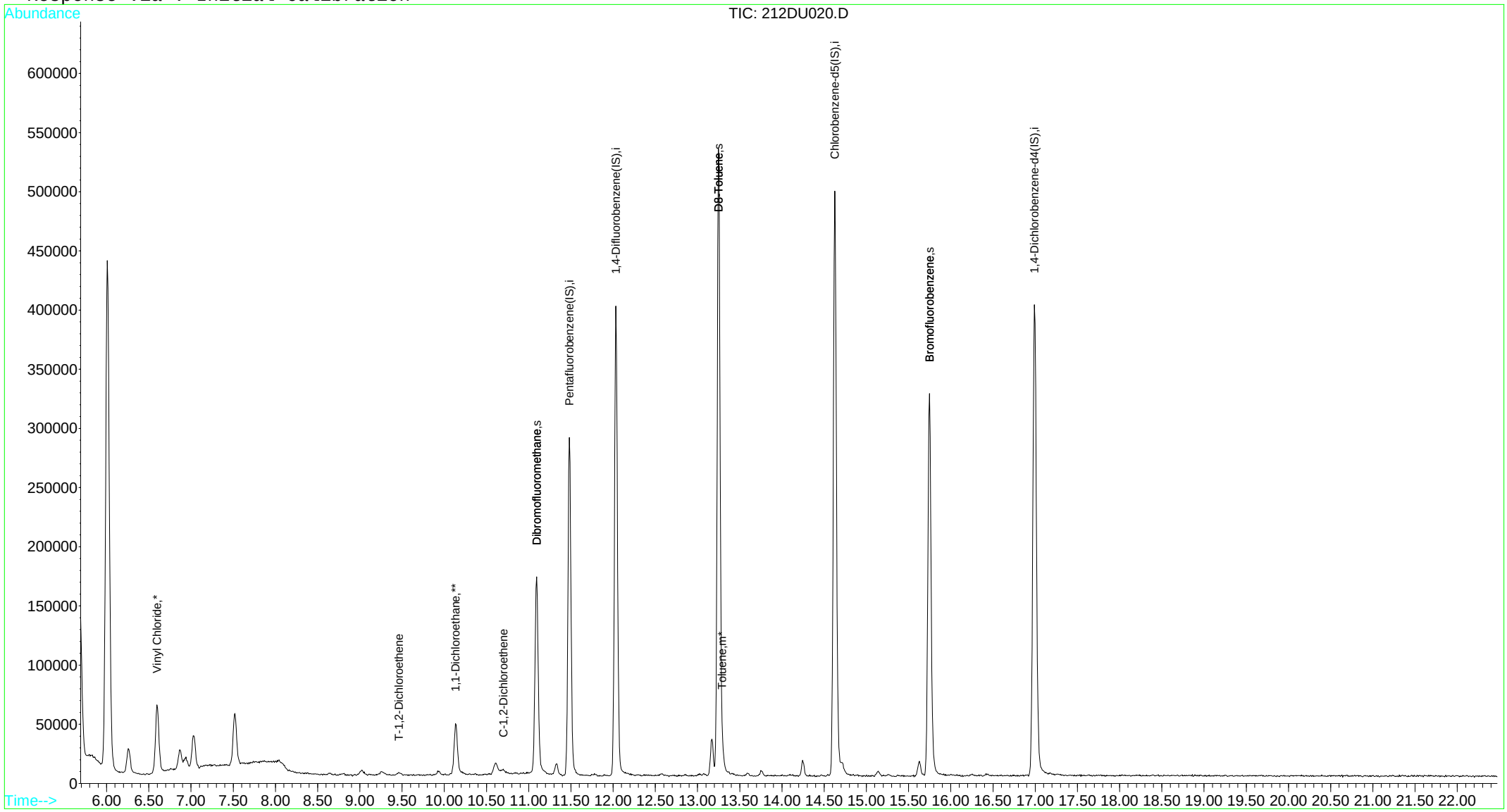
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53)	C-1,3-Dichloropropene	0.00	75	0	N.D.	
55)	D8-Toluene	13.25	98	452509	58.50 ug/kg	94
57)	Toluene	13.30	92	6179	0.95 ug/kg	95
58)	Ethyl Methacrylate	0.00	69	0	N.D.	
59)	T-1,3-Dichloropropene	0.00	75	0	N.D.	
60)	1,1,2-Trichloroethane	0.00	97	0	N.D.	
61)	1,3-Dichloropropane	0.00	76	0	N.D.	
62)	Tetrachloroethene	0.00	164	0	N.D.	
63)	Dibromochloromethane	0.00	129	0	N.D. d	
64)	1,2-Dibromoethane	0.00	107	0	N.D.	
65)	Chlorobenzene	0.00	112	0	N.D.	
66)	1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67)	Ethylbenzene	0.00	106	0	N.D. d	
68)	m-xylene & p-xylene	0.00	106	0	N.D. d	
69)	O-Xylene	0.00	106	0	N.D. d	
70)	Bromoform	0.00	173	0	N.D.	
71)	Styrene	0.00	104	0	N.D.	
72)	Isopropylbenzene	0.00	105	0	N.D. d	
73)	1,2,3-Trichloropropane	0.00	75	0	N.D.	
74)	1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76)	Bromofluorobenzene	15.75	95	178458	43.79 ug/kg#	85
77)	T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78)	N-Propylbenzene	0.00	91	0	N.D.	
80)	Bromobenzene	0.00	156	0	N.D.	
81)	1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82)	2-Chlorotoluene	0.00	91	0	N.D.	
83)	4-Chlorotoluene	0.00	91	0	N.D.	
84)	1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85)	s-Butylbenzene	0.00	105	0	N.D.	
86)	tert-Butylbenzene	0.00	119	0	N.D.	
87)	p-Isopropyltoluene	0.00	119	0	N.D.	
88)	1,3-Dichlorobenzene	0.00	146	0	N.D.	
89)	1,4-Dichlorobenzene	0.00	146	0	N.D.	
90)	1,2-Dichlorobenzene	0.00	146	0	N.D.	
91)	N-Butylbenzene	0.00	91	0	N.D.	
92)	DBCP	0.00	75	0	N.D.	
93)	Naphthalene	0.00	128	0	N.D.	
94)	1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95)	Hexachlorobutadiene	0.00	225	0	N.D.	
96)	1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU020.D Vial: 19
Acq On : 26 Apr 2021 4:10 pm Operator: nmc
Sample : AE02766-15 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:56 2021 Quant Results File: 030921.RES

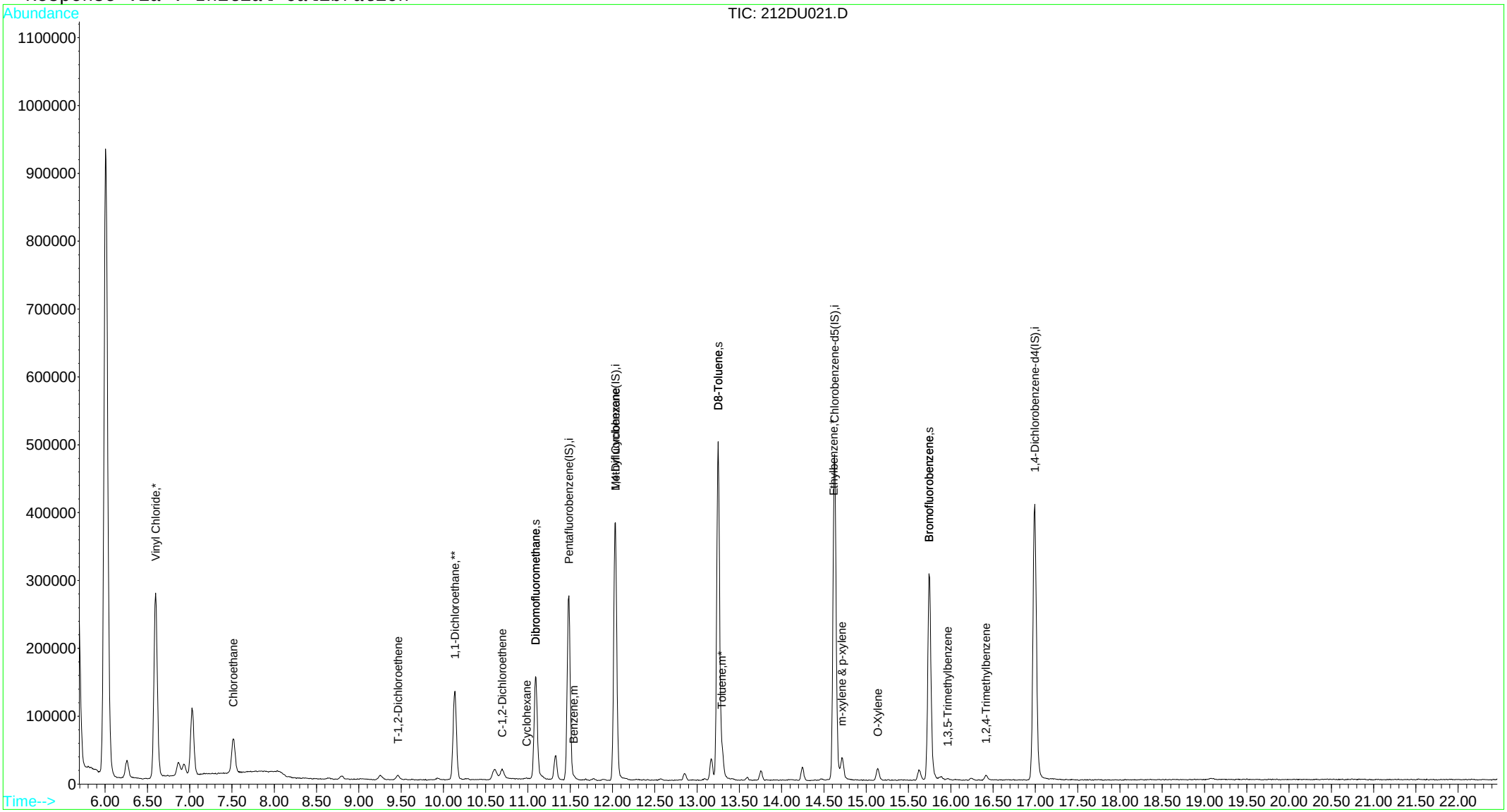
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU021.D Vial: 20
Acq On : 26 Apr 2021 4:39 pm Operator: nmc
Sample : AE02766-16 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:57 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU021.D Vial: 20
Acq On : 26 Apr 2021 4:39 pm Operator: nmc
Sample : AE02766-16 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:57 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	237143	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	400119	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	232700	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198668	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	130783	49.35	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 98.70%			
54) D8-Toluene	13.25	98	420029	55.71	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 111.42%			
75) Bromofluorobenzene	15.74	95	168352	41.93	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.86%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	453365	109.66	ug/kg	100
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	7.51	64	3475	1.59	ug/kg#	1
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D. d		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	3484	1.39	ug/kg	94
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	8438	3.10	ug/kg	98
22) 1,1-Dichloroethane	10.14	63	178867	33.67	ug/kg	99
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D. d		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	130783	49.35	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D. d		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	10.98	56	964	0.21	ug/kg#	22
39) Methyl Cyclohexane	12.03	55	2357	0.72	ug/kg#	11
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	11.55	78	4422	0.52	ug/kg#	47
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU021.D Vial: 20
Acq On : 26 Apr 2021 4:39 pm Operator: nmc
Sample : AE02766-16 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:57 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D. d	
55) D8-Toluene	13.25	98	420029	55.71 ug/kg	93
57) Toluene	13.30	92	19043	2.96 ug/kg	97
58) Ethyl Methacrylate	0.00	69	0	N.D. d	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D. d	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	14.61	106	2444	0.66 ug/kg	81
68) m-xylene & p-xylene	14.71	106	11103	2.46 ug/kg	99
69) O-Xylene	15.14	106	6547	1.47 ug/kg	91
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D. d	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168352	41.93 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	15.95	105	1554	0.16 ug/kg	95
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	16.41	105	5063	0.51 ug/kg	96
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D. d	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU022.D Vial: 21
Acq On : 26 Apr 2021 5:07 pm Operator: nmc
Sample : AE02766-20 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:57 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	241256	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	405049	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	233048	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	196025	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	131868	48.91	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 97.82%			
54) D8-Toluene	13.25	98	427734	56.04	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 112.08%			
75) Bromofluorobenzene	15.75	95	170473	42.40	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	41940	9.97	ug/kg	99
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	14527	5.69	ug/kg	93
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.70	96	182083	65.86	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	131868	48.91	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	1963	0.75	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU022.D Vial: 21
Acq On : 26 Apr 2021 5:07 pm Operator: nmc
Sample : AE02766-20 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:57 2021 Quant Results File: 030921.RES

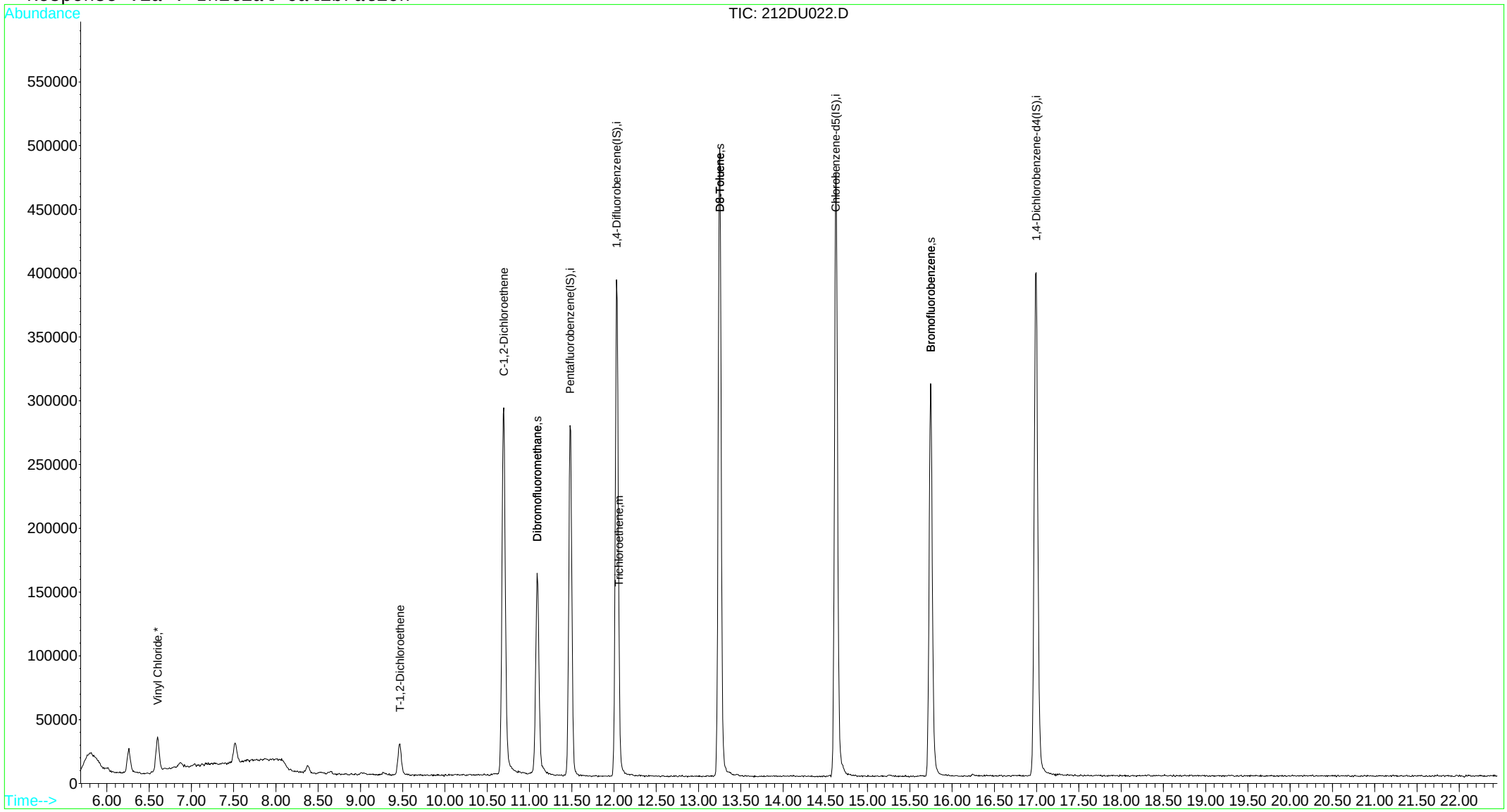
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53)	C-1,3-Dichloropropene	0.00	75	0	N.D.	
55)	D8-Toluene	13.25	98	427734	56.04 ug/kg	93
57)	Toluene	0.00	92	0	N.D.	
58)	Ethyl Methacrylate	0.00	69	0	N.D.	
59)	T-1,3-Dichloropropene	0.00	75	0	N.D.	
60)	1,1,2-Trichloroethane	0.00	97	0	N.D.	
61)	1,3-Dichloropropane	0.00	76	0	N.D.	
62)	Tetrachloroethene	0.00	164	0	N.D.	
63)	Dibromochloromethane	0.00	129	0	N.D.	
64)	1,2-Dibromoethane	0.00	107	0	N.D.	
65)	Chlorobenzene	0.00	112	0	N.D.	
66)	1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67)	Ethylbenzene	0.00	106	0	N.D.	
68)	m-xylene & p-xylene	0.00	106	0	N.D.	
69)	O-Xylene	0.00	106	0	N.D.	
70)	Bromoform	0.00	173	0	N.D.	
71)	Styrene	0.00	104	0	N.D.	
72)	Isopropylbenzene	0.00	105	0	N.D.	
73)	1,2,3-Trichloropropane	0.00	75	0	N.D.	
74)	1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76)	Bromofluorobenzene	15.75	95	170473	42.40 ug/kg#	85
77)	T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78)	N-Propylbenzene	0.00	91	0	N.D. d	
80)	Bromobenzene	0.00	156	0	N.D.	
81)	1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82)	2-Chlorotoluene	0.00	91	0	N.D.	
83)	4-Chlorotoluene	0.00	91	0	N.D.	
84)	1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85)	s-Butylbenzene	0.00	105	0	N.D.	
86)	tert-Butylbenzene	0.00	119	0	N.D.	
87)	p-Isopropyltoluene	0.00	119	0	N.D.	
88)	1,3-Dichlorobenzene	0.00	146	0	N.D.	
89)	1,4-Dichlorobenzene	0.00	146	0	N.D.	
90)	1,2-Dichlorobenzene	0.00	146	0	N.D.	
91)	N-Butylbenzene	0.00	91	0	N.D.	
92)	DBCP	0.00	75	0	N.D.	
93)	Naphthalene	0.00	128	0	N.D.	
94)	1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95)	Hexachlorobutadiene	0.00	225	0	N.D.	
96)	1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU022.D Vial: 21
Acq On : 26 Apr 2021 5:07 pm Operator: nmc
Sample : AE02766-20 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:57 2021 Quant Results File: 030921.RES

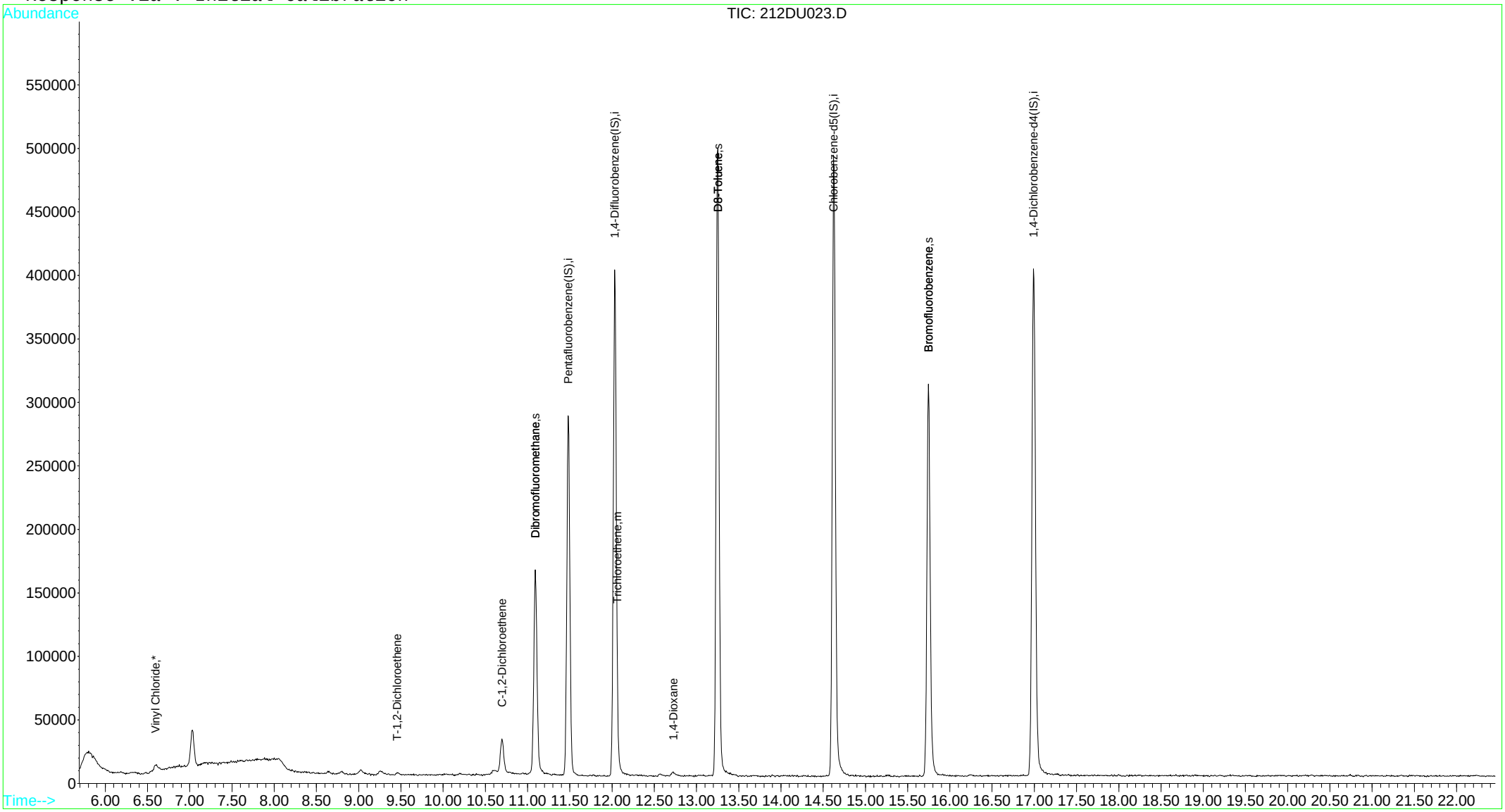
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU023.D Vial: 22
Acq On : 26 Apr 2021 5:36 pm Operator: nmc
Sample : AE02766-21 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:58 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU023.D Vial: 22
Acq On : 26 Apr 2021 5:36 pm Operator: nmc
Sample : AE02766-21 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	244219	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	410683	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234426	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	196160	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	132960	48.72	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 97.44%			
54) D8-Toluene	13.25	98	426444	55.11	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.22%			
75) Bromofluorobenzene	15.75	95	169827	41.99	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.59	62	7007	1.65	ug/kg	93
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	774	0.30	ug/kg#	73
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	17449	6.23	ug/kg	95
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	132960	48.72	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	3236	1.23	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	12.72	88	3281	145.37	ug/kg	97
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU023.D Vial: 22
Acq On : 26 Apr 2021 5:36 pm Operator: nmc
Sample : AE02766-21 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:58 2021 Quant Results File: 030921.RES

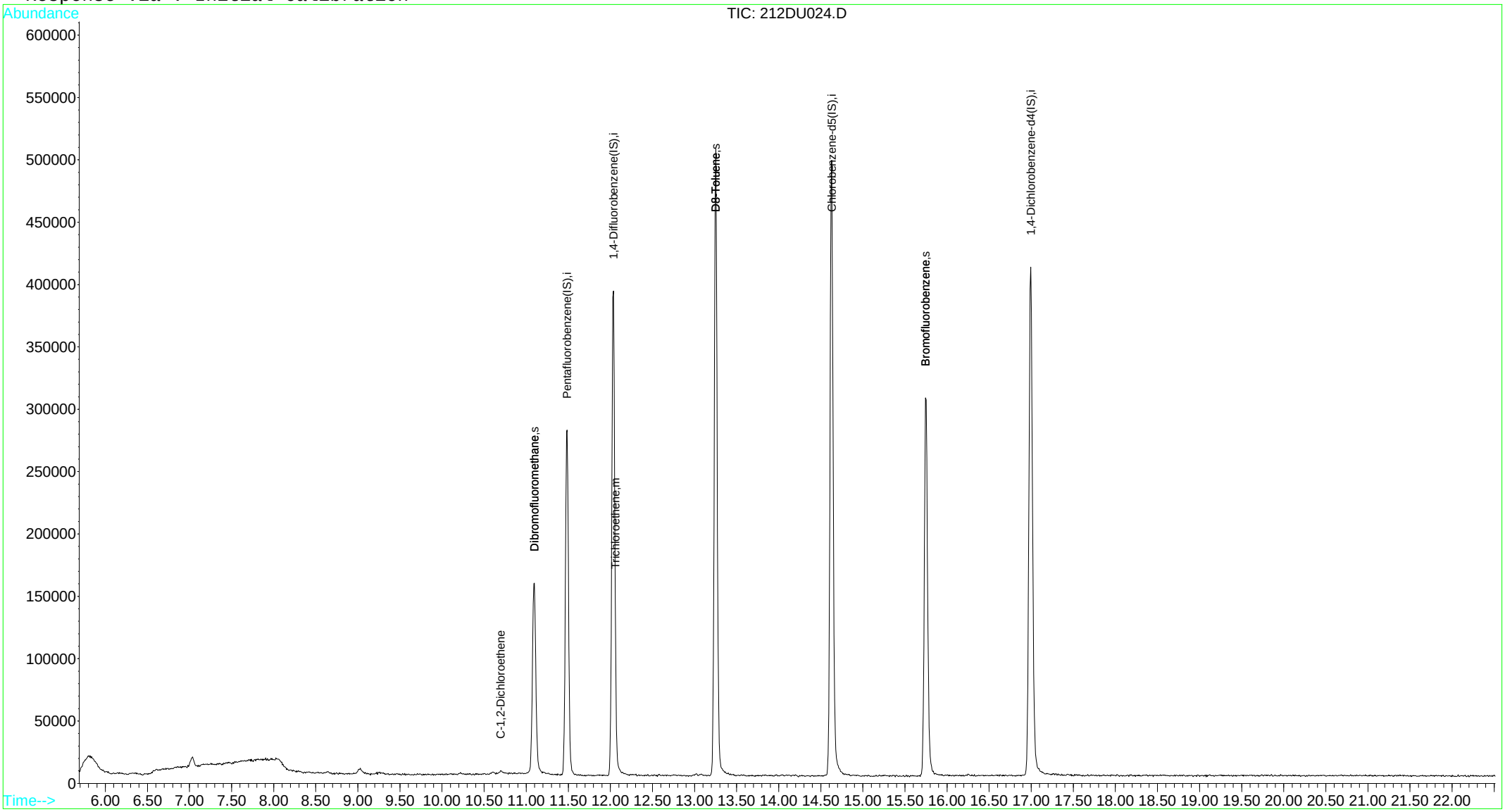
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	426444	55.11 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	169827	41.99 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042621\212DU024.D Vial: 23
Acq On : 26 Apr 2021 6:04 pm Operator: nmc
Sample : AE02766-22 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:58 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU024.D Vial: 23
Acq On : 26 Apr 2021 6:04 pm Operator: nmc
Sample : AE02766-22 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	244725	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	408514	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	237207	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	201024	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	131953	48.25	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.50%			
54) D8-Toluene	13.25	98	426823	55.45	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.90%			
75) Bromofluorobenzene	15.74	95	170452	41.65	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.70	96	896	0.32	ug/kg#	72
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	131953	48.25	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.07	130	2361	0.90	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042621\212DU024.D Vial: 23
Acq On : 26 Apr 2021 6:04 pm Operator: nmc
Sample : AE02766-22 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 6:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	426823	55.45 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170452	41.65 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

ANALYSIS SEQUENCE

AA66113

Instrument: OVGCMS2

Calibration ID: 2103054

Printed: 4/27/2021 1:06:17PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA66113-TUN1	QC		1		A1B1157			
AA66113-CCV1	QC		2		A1D1157	A1B0764		
1D27005-BS1	QC		3			A1B0764		
1D27005-MS1	QC		4			A1B0764		
1D27005-MSD1	QC		5			A1B0764		
1D27005-BLK1	QC		6			A1B0764		
AA66113-CRL1	QC		7		A1D1158	A1B0764		
AE03398-01	624.1	C	8			A1B0764		run1x nc4/26/21
AE03398-01	624.1 Acrolein/2CEV	C	9			A1B0764		run1x nc4/26/21 Vials are preserved, J
AE03398-01	60D TCL SOM01.2 CLP-LIK	C	10			A1B0764		BatchQC
AE03398-02	624.1 Acrolein/2CEV	C	11			A1B0764		run1x nc4/26/21 Vials are preserved, J
AE03398-02	624.1	C	12			A1B0764		run1x nc4/26/21
AE03398-03	624.1 Acrolein/2CEV	C	13			A1B0764		run1x nc4/26/21 Vials are preserved, J
AE03398-03	624.1	C	14			A1B0764		run1x nc4/26/21
AE02766-02RE1	60D TCL SOM01.2 CLP-LIK	B	15			A1B0764	Tetra Tech NUS, Inc. (TE015)	rr10x overdilute \Re-extract added 4/27
AE02766-04	60D TCL SOM01.2 CLP-LIK	C	16			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 400x Freon 113 jmw 4/23/21 c
AE02766-05	60D TCL SOM01.2 CLP-LIK	A	17			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 2x TCE jmw 4/23/21 custom
AE02766-07	60D TCL SOM01.2 CLP-LIK	B	18			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-10RE1	60D TCL SOM01.2 CLP-LIK	B	19			A1B0764	Tetra Tech NUS, Inc. (TE015)	rr1x overdilute Re-extract added 4/27/2
AE02766-17	60D TCL SOM01.2 CLP-LIK	A	20			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1000x TCE jmw 4/23/21 custo
AE02766-18	60D TCL SOM01.2 CLP-LIK	A	21			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 5000x TCE jmw 4/23/21 custo
AE02766-19	60D TCL SOM01.2 CLP-LIK	A	22			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-23	60D TCL SOM01.2 CLP-LIK	A	23			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 10x TCE jmw 4/23/21 custom

Samples Loaded By 4/27/21 Date

Data Processed By 4/27/21 Date

ANALYSIS SEQUENCE

AA66113

Instrument: OVGCMS2

Calibration ID: 2103054

Printed: 4/27/2021 1:06:17PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AE02766-24	60D TCL SOM01.2 CLP-LIK	A	24			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-25	60D TCL SOM01.2 CLP-LIK	B	25			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 50x C12DCE jmw 4/23/21 cus
AE02766-26	60D TCL SOM01.2 CLP-LIK	A	26			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-27	60D TCL SOM01.2 CLP-LIK	A	27			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom
AE02766-28	60D TCL SOM01.2 CLP-LIK	A	28			A1B0764	Tetra Tech NUS, Inc. (TE015)	History 1x jmw 4/23/21 custom

Samples Loaded By 4/27/21 Date

Data Processed By 4/27/21 Date

PREPARATION BENCH SHEET

Printed: 4/27/2021 1:06:33PM

1D27005

ENCO Orlando

Analysis
624.1 [EPA 624.1]
624.1 Acrolein/2CEV [EPA 624.1]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
___ A1B1156 8260 surr working

Prepared using: EPA 5030B_MS

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl[1]	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1D27005-BLK1		Blank		QC			5	5			1	
1D27005-BS1		LCS		QC			5	5	A1D1159 A1D1060	2 2	1	
1D27005-MS1		Matrix Spike [AE03398-01]		QC	≤2	N	5	5	A1D1159 A1D1060	2 2	1	
1D27005-MSD1		Matrix Spike Dup [AE03398-01]		QC	≤2	N	5	5	A1D1159 A1D1060	2 2	1	
AE02766-02RE1	C	HMPN-MW0039-035.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	rr10x overdilute \Re-extract added 4/27/2021 by NMC
AE02766-04	C	HMPN-MW0044-045.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 400x Freon 113 jmw 4/23/21 custom
AE02766-05	C	HMPN-MW0030-025.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 2x TCE jmw 4/23/21 custom
AE02766-07	C	HMPN-MW0029-015.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-10RE1	C	HMPN-MW0009-020.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	rr1x overdilute Re-extract added 4/27/2021 by NMC
AE02766-17	C	HMPN-MW0027-042.5-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 1000x TCE jmw 4/23/21 custom
AE02766-18	C	HMPN-MW0028-047.5-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 5000x TCE jmw 4/23/21 custom
AE02766-19	C	HMPN-MW0004-010.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-23	C	HMPN-MW0002-035.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 10x TCE jmw 4/23/21 custom
AE02766-24	C	HMPN-MW0008-025.0-202104[illegible]MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 1x jmw 4/23/21 custom
AE02766-25	C	HMPN-MW0042-042.5-202104[illegible]MS41	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			1	History 50x C12DCE jmw 4/23/21 custom

PREPARATION BENCH SHEET

Printed: 4/27/2021 1:06:33PM

1D27005

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

__ A1B1156 8260 surr working

Spiking Solution

A1D1060 8260 2nd source Gases/Acrolein virtual

A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE02766-26	C	HMPN-MW0043-035.0-20210422 C[MS41	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	~	5	5			1	History 1x jmw 4/23/21 custom
AE02766-27	C	HMPN-MW0034-015.0-20210421 C[MS41	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	~	5	5			1	History 1x jmw 4/23/21 custom
AE02766-28	C	HMPN-MW0035-035.0-20210421 C[MS41	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	~	5	5			1	History 1x jmw 4/23/21 custom
AE03398-01		CWWTF-INF C[MS21	29-Apr-21	624.1 Acrolein/2CEV	<2	~	5	5			1	run1x nc4/26/21 Vials are preserved, JAJ 4/23/21.
AE03398-01		CWWTF-INF C[MS21	29-Apr-21	624.1	<2	~	5	5			1	run1x nc4/26/21
AE03398-01		CWWTF-INF C[MS21		8260D TCL SOM01.2 CLP-LIKE	<2	~	5	5			1	Added for BatchQC in: 1D27005
AE03398-02		LS-1719 C[MS21	29-Apr-21	624.1 Acrolein/2CEV	<2	~	5	5			1	run1x nc4/26/21 Vials are preserved, JAJ 4/23/21.
AE03398-02		LS-1719 C[MS21	29-Apr-21	624.1	<2	~	5	5			1	run1x nc4/26/21
AE03398-03		XY-MH C[MS21	29-Apr-21	624.1 Acrolein/2CEV	<2	~	5	5			1	run1x nc4/26/21 Vials are preserved, JAJ 4/23/21.
AE03398-03		XY-MH C[MS21	29-Apr-21	624.1	<2	~	5	5			1	run1x nc4/26/21

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

PREPARATION BENCH SHEET

1D27005

ENCO Orlando

Printed: 4/27/2021 1:06:33PM

Surrogate Solution

___ A1B1156	8260 surr working

Spiking Solution

A1D1060	8260 2nd source Gases/Acrolein virtual
A1D1159	8260 2nd source Mega Mix(no acetonitrile)

Prepared using: EPA 5030B_MS

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments

Instrument 2

Start Date 4/27/21

StopDate 4/27/21

Instrument ID OVGCMS2

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1C1135	P&T Anti-Foam working solution	N/A

Samples Prepared By 4/27/21 Date

Samples Prepared By Date

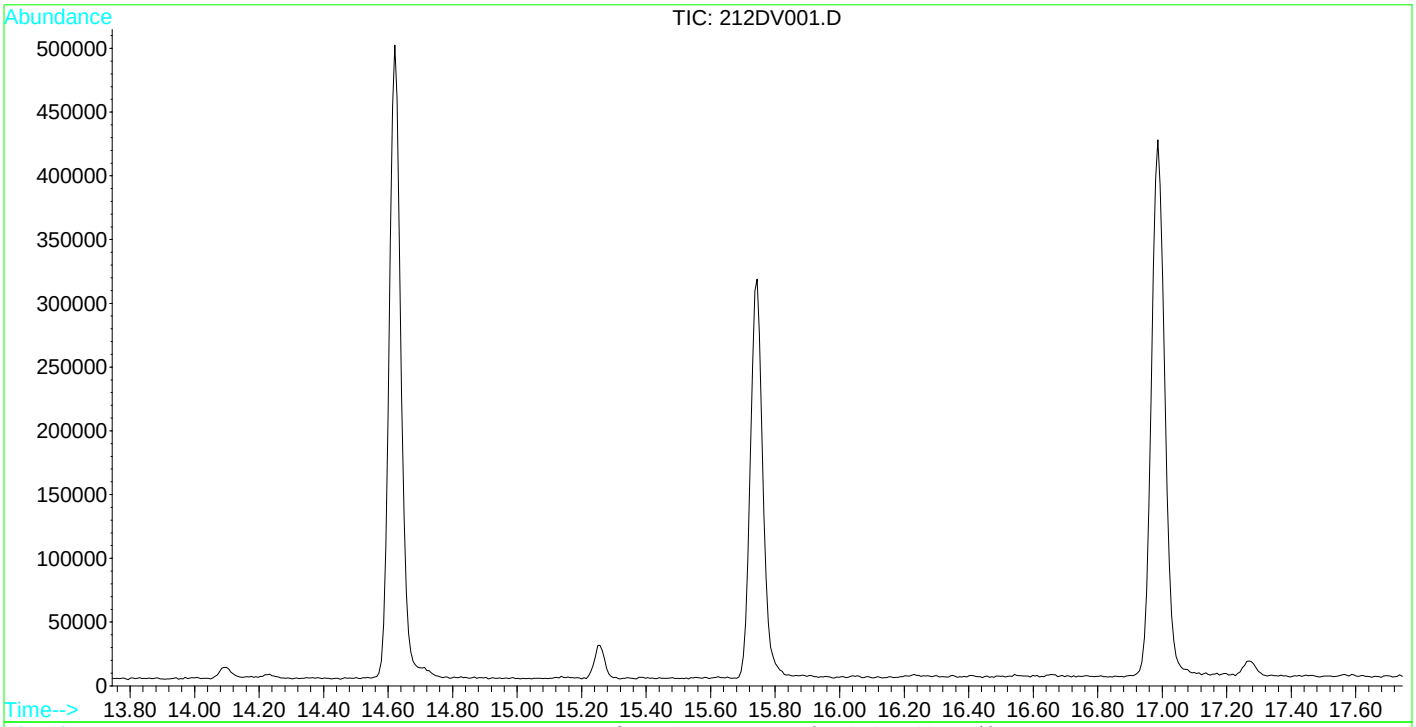
Sequence Name: C:\HPCHEM\1\SEQUENCE\212DV.S
Comment:
Operator: nmc
Data Path: C:\HPchem\1\DATA\042721\
Pre-Seq Cmd:
Post-Seq Cmd:

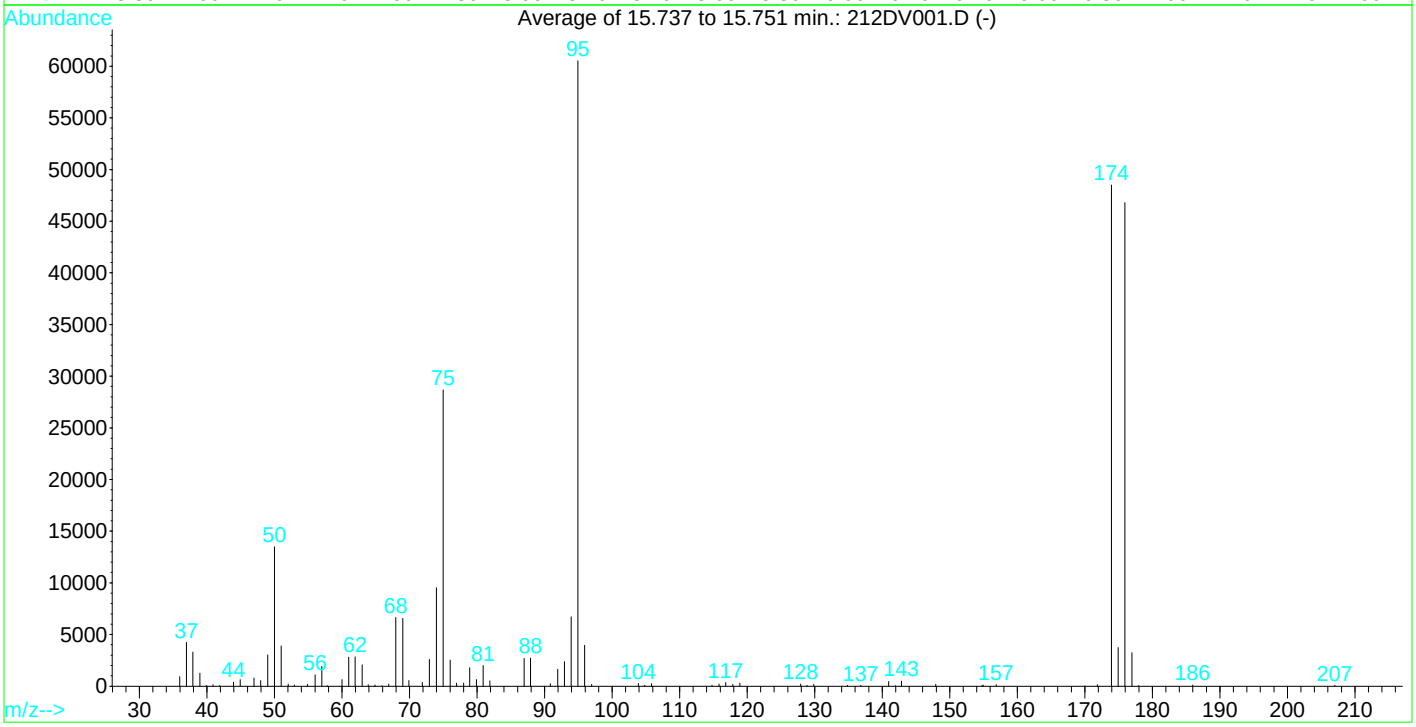
Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212DV001	8260S	tun1
2	Sample	2	212DV002	8260S	ccv1
3	Sample	3	212DV003	8260S	1d27005-bs1
4	Sample	4	212DV004	8260S	1d27005-ms1
5	Sample	4	212DV005	8260S	1d27005-msd1
6	Sample	5	212DV006	8260S	rinse
7	Sample	6	212DV007	8260S	1d27005-blk1
8	Sample	7	212DV008	8260S	aa66113-crl1
9	Sample	8	212DV009	8260S	ae03398-01 RR Bromodich.
10	Sample	9	212DV010	8260S	ae03398-02
11	Sample	10	212DV011	8260S	ae03398-03
12	Sample	11	212DV012	8260S	ae02766-02re1@10
13	Sample	12	212DV013	8260S	ae02766-04@400
14	Sample	13	212DV014	8260S	ae02766-05@2 RR 1x overdilute
15	Sample	14	212DV015	8260S	ae02766-07
16	Sample	15	212DV016	8260S	ae02766-10re1
17	Sample	16	212DV017	8260S	ae02766-17@1000
18	Sample	17	212DV018	8260S	~~ae02766-15@5000~~ RR 10,000x TCE AE02766-18@5000 (NC 4/29/21)
19	Sample	18	212DV019	8260S	ae02766-19
20	Sample	19	212DV020	8260S	ae02766-23@10
21	Sample	20	212DV021	8260S	ae02766-24
22	Sample	21	212DV022	8260S	ae02766-25@50
23	Sample	22	212DV023	8260S	ae02766-26
24	Sample	23	212DV024	8260S	ae02766-27
25	Sample	24	212DV025	8260S	ae02766-28

Data File : C:\HPCHEM\1\DATA\042721\212DV001.D Vial: 1
Acq On : 27 Apr 2021 7:03 am Operator: nmc
Sample : tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054

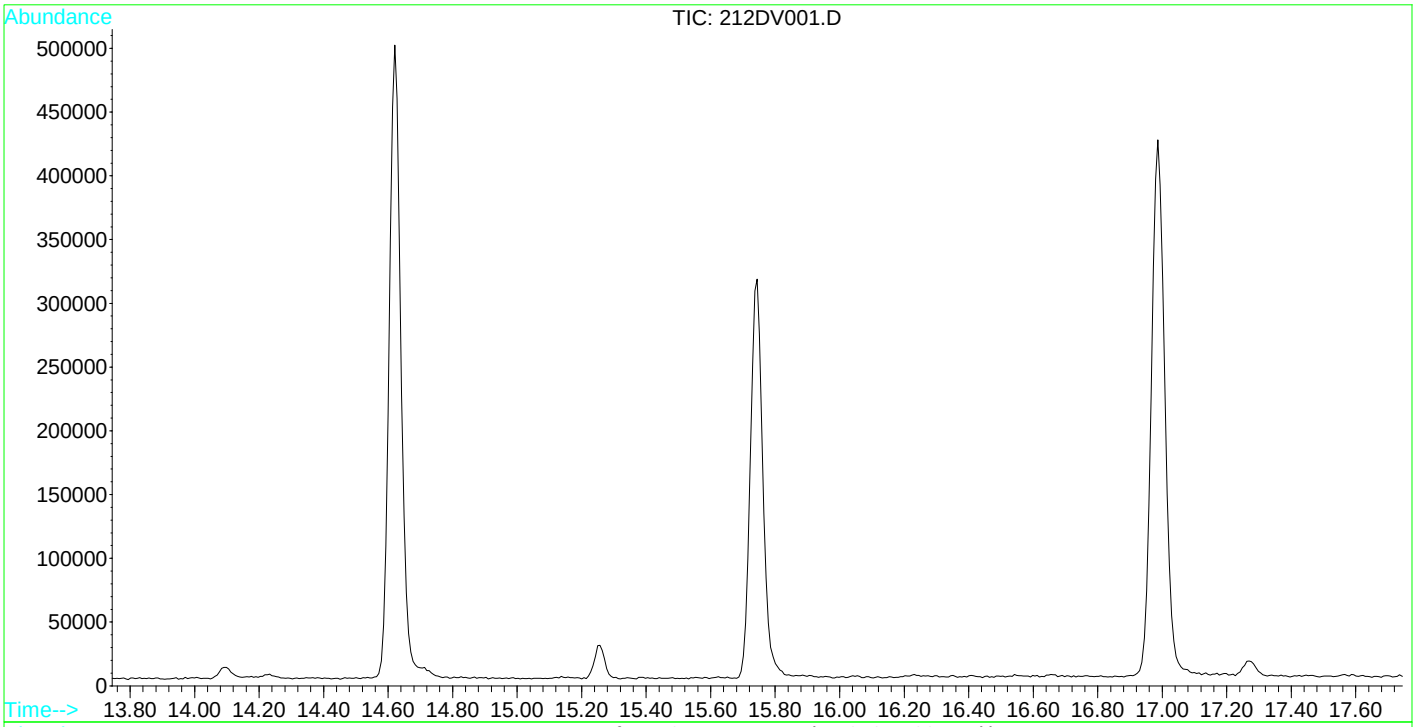


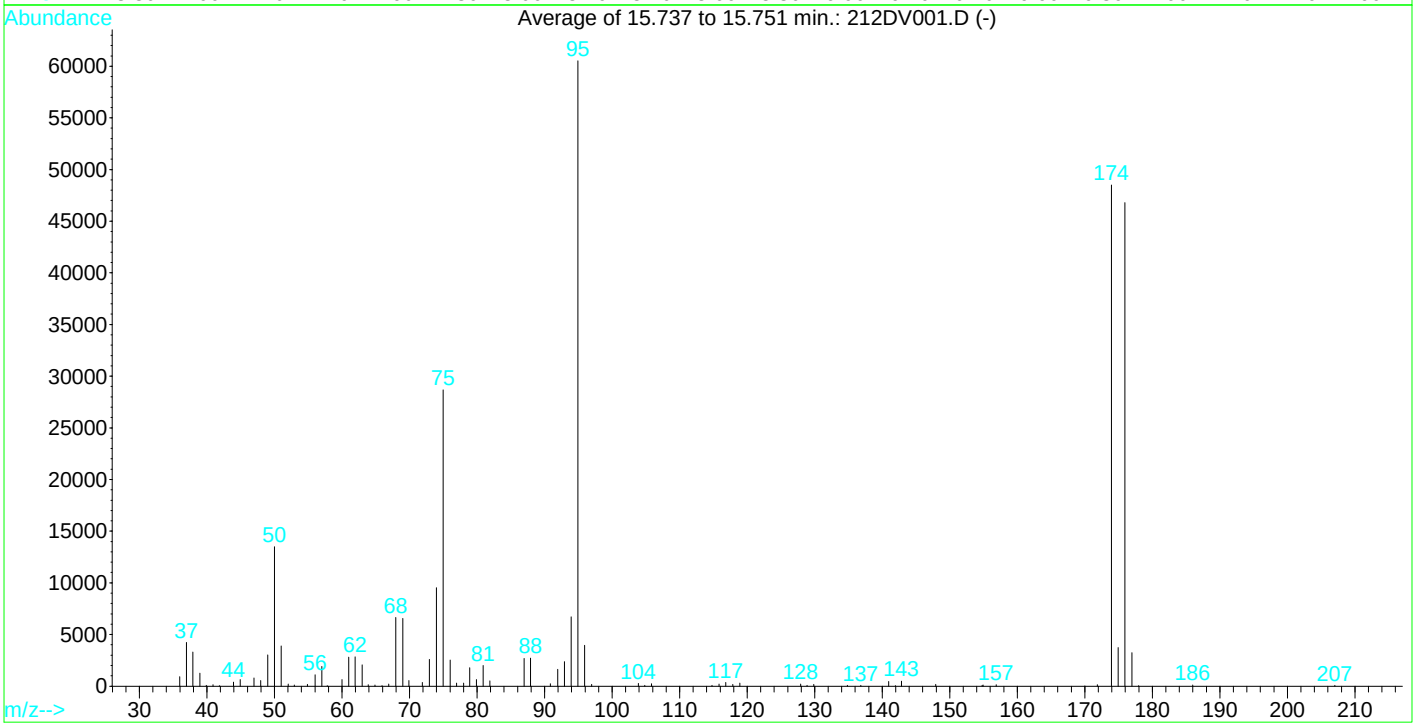


AutoFind: Scans 1424, 1425, 1426; Background Corrected with Scan 1413

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	124.8	60515	PASS
96	95	5	9	6.5	3962	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	80.2	48504	PASS
175	174	5	9	7.7	3721	PASS
176	174	95	105	96.5	46787	PASS
177	176	5	10	6.9	3227	PASS

Data File : C:\HPCHEM\1\DATA\042721\212DV001.D Vial: 1
Acq On : 27 Apr 2021 7:03 am Operator: nmc
Sample : tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054





AutoFind: Scans 1424, 1425, 1426; Background Corrected with Scan 1413

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	124.8	60515	PASS
96	95	5	9	6.5	3962	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	80.2	48504	PASS
175	174	5	9	7.7	3721	PASS
176	174	95	105	96.5	46787	PASS
177	176	5	10	6.9	3227	PASS

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV002.D Vial: 2
Acq On : 27 Apr 2021 7:35 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 7:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	212107	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.02	114	372551	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.61	82	221198	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	195685	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	120402	50.80	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.60%			
54) D8-Toluene	13.24	98	404401	57.61	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 115.22%			
75) Bromofluorobenzene	15.74	95	167288	43.83	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.66%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	83624	18.38	ug/kg	98
3) Chloromethane	6.39	50	101282	21.21	ug/kg	99
4) Vinyl Chloride	6.58	62	80571	21.79	ug/kg	99
5) Bromomethane	7.22	96	56023	34.14	ug/kg	99
6) Chloroethane	7.45	64	42821	21.97	ug/kg	96
7) Trichlorofluoromethane	7.72	101	68755	19.19	ug/kg	98
8) Trichlorotrifluoroethane	8.55	101	106360	46.83	ug/kg	88
9) acrolein	8.91	56	364991	585.11	ug/kg	100
10) Acetone	9.26	43	244693	300.75	ug/kg	95
11) 1,1-Dichloroethene	8.50	96	93674	44.88	ug/kg	93
12) 3-Chloropropene	9.10	76	85476	63.11	ug/kg	85
13) Acetonitrile	9.80	41	216455	632.90	ug/kg	99
14) Iodomethane	8.73	142	930472	308.25	ug/kg	90
15) Carbon disulfide	8.62	76	2547855	358.49	ug/kg	100
16) Methylene Chloride	9.22	84	139107	51.45	ug/kg	91
17) Methyl tert-butyl ether	9.54	73	375195	54.28	ug/kg	99
18) Acrylonitrile	10.13	53	874899	600.35	ug/kg	98
19) T-1,2-Dichloroethene	9.45	96	122534	54.55	ug/kg	93
20) Isopropyl Ether	9.91	45	620178	53.32	ug/kg	97
21) C-1,2-Dichloroethene	10.69	96	142264	58.53	ug/kg	96
22) 1,1-Dichloroethane	10.12	63	242998	51.15	ug/kg	99
23) Vinyl Acetate	10.30	43	2364126	306.37	ug/kg	98
24) Chloroprene	10.11	88	133318	67.00	ug/kg	82
25) 2-Butanone	11.18	72	86559	335.47	ug/kg	87
26) Propionitrile	11.46	54	235727	604.90	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	191156	52.73	ug/kg	100
28) Methacrylonitrile	11.50	67	660730	617.08	ug/kg	92
29) Chloroform	10.90	83	246535	56.20	ug/kg	97
31) Dibromofluoromethane	11.08	113	120402	50.80	ug/kg	100
32) Bromochloromethane	10.88	128	78117	53.70	ug/kg	96
33) 1,1,1-Trichloroethane	11.19	97	175141	50.53	ug/kg	95
34) 1,1-Dichloropropene	11.29	75	189949	55.94	ug/kg	99
35) Diethyl Ether	8.14	59	120761	49.07	ug/kg	94
36) Methyl Acetate	9.40	74	25473	54.68	ug/kg#	89
37) Cyclohexane	10.96	56	198695	48.93	ug/kg	94
39) Methyl Cyclohexane	12.08	55	159622	52.10	ug/kg	89
40) Carbon Tetrachloride	11.16	117	169862	49.14	ug/kg	98
41) 1,2-Dichloroethane	11.67	62	184760	51.84	ug/kg	98
42) Benzene	11.53	78	490550	61.48	ug/kg	99
43) Isobutyl Alcohol	11.55	43	246733	1154.19	ug/kg#	83
44) Trichloroethene	12.05	130	141138	59.01	ug/kg	99
45) 1,2-Dichloropropane	12.49	63	156391	57.23	ug/kg	98
46) Methyl Methacrylate	12.57	100	47715	68.61	ug/kg	99
47) 1,4-Dioxane	12.71	88	28216	1378.14	ug/kg	98
48) Bromodichloromethane	12.52	83	193419	60.66	ug/kg	98
49) Dibromomethane	12.42	93	96211	59.85	ug/kg	93
50) 4-Methyl-2-Pentanone	13.51	100	113961	345.98	ug/kg	91
51) 2-Chloroethyl vinyl ether	12.92	63	168950	240.37	ug/kg	100
52) 2-Hexanone	14.22	43	641931	321.57	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV002.D Vial: 2
Acq On : 27 Apr 2021 7:35 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 7:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	277096	63.48 ug/kg	96
55) D8-Toluene	13.24	98	404401	57.61 ug/kg	94
57) Toluene	13.29	92	316692	51.76 ug/kg	100
58) Ethyl Methacrylate	13.63	69	224450	51.99 ug/kg	97
59) T-1,3-Dichloropropene	13.57	75	228152	51.83 ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	119325	50.13 ug/kg	94
61) 1,3-Dichloropropane	13.99	76	258162	51.16 ug/kg	99
62) Tetrachloroethene	13.67	164	104945	56.49 ug/kg	88
63) Dibromochloromethane	13.93	129	152157	46.44 ug/kg	96
64) 1,2-Dibromoethane	14.19	107	142754	48.85 ug/kg	98
65) Chlorobenzene	14.63	112	335059	48.85 ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.66	131	128248	46.81 ug/kg#	55
67) Ethylbenzene	14.59	106	173546	49.44 ug/kg	95
68) m-xylene & p-xylene	14.70	106	426216	99.27 ug/kg	97
69) O-Xylene	15.13	106	216714	51.24 ug/kg	98
70) Bromoform	15.26	173	97758	57.40 ug/kg	98
71) Styrene	15.16	104	364500	50.33 ug/kg	100
72) Isopropylbenzene	15.40	105	522465	49.31 ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	200320	52.80 ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.83	83	168001	54.87 ug/kg	99
76) Bromofluorobenzene	15.74	95	167288	43.83 ug/kg#	67
77) T-1,4-dichloro-2-butene	16.02	53	49399	49.85 ug/kg	98
78) N-Propylbenzene	15.80	91	634025	52.72 ug/kg	97
80) Bromobenzene	15.90	156	155804	49.40 ug/kg	93
81) 1,3,5-Trimethylbenzene	15.95	105	403372	41.53 ug/kg	98
82) 2-Chlorotoluene	16.05	91	377810	42.55 ug/kg	97
83) 4-Chlorotoluene	16.21	91	395986	43.06 ug/kg	96
84) 1,2,4-Trimethylbenzene	16.41	105	411969	41.95 ug/kg	99
85) s-Butylbenzene	16.53	105	484460	42.12 ug/kg	100
86) tert-Butylbenzene	16.34	119	351467	40.77 ug/kg	98
87) p-Isopropyltoluene	16.65	119	416499	40.66 ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	264818	48.39 ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	265452	46.64 ug/kg	95
90) 1,2-Dichlorobenzene	17.57	146	251493	48.22 ug/kg	95
91) N-Butylbenzene	17.18	91	390804	45.18 ug/kg	99
92) DBCP	18.69	75	24200	37.66 ug/kg	80
93) Naphthalene	20.68	128	254641	44.82 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	133787	49.30 ug/kg	96
95) Hexachlorobutadiene	19.83	225	66635	55.58 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	103612	48.55 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV002.D Vial: 2
Acq On : 27 Apr 2021 7:35 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 7:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	212107	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.02	114	372551	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.61	82	221198	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	195685	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	120402	50.80	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.60%			
54) D8-Toluene	13.24	98	404401	57.61	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 115.22%			
75) Bromofluorobenzene	15.74	95	167288	43.83	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.66%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	83624	18.38	ug/kg	98
3) Chloromethane	6.39	50	101282	21.21	ug/kg	99
4) Vinyl Chloride	6.58	62	80571	21.79	ug/kg	99
5) Bromomethane	7.22	96	56023	34.14	ug/kg	99
6) Chloroethane	7.45	64	42821	21.97	ug/kg	96
7) Trichlorofluoromethane	7.72	101	68755	19.19	ug/kg	98
8) Trichlorotrifluoroethane	8.55	101	106360	46.83	ug/kg	88
9) acrolein	8.91	56	364991	585.11	ug/kg	100
10) Acetone	9.26	43	244693	300.75	ug/kg	95
11) 1,1-Dichloroethene	8.50	96	93674	44.88	ug/kg	93
12) 3-Chloropropene	9.10	76	85476	63.11	ug/kg	85
13) Acetonitrile	9.80	41	216455	632.90	ug/kg	99
14) Iodomethane	8.73	142	930472	308.25	ug/kg	90
15) Carbon disulfide	8.62	76	2547855	358.49	ug/kg	100
16) Methylene Chloride	9.22	84	139107	51.45	ug/kg	91
17) Methyl tert-butyl ether	9.54	73	375195	54.28	ug/kg	99
18) Acrylonitrile	10.13	53	874899	600.35	ug/kg	98
19) T-1,2-Dichloroethene	9.45	96	122534	54.55	ug/kg	93
20) Isopropyl Ether	9.91	45	620178	53.32	ug/kg	97
21) C-1,2-Dichloroethene	10.69	96	142264	58.53	ug/kg	96
22) 1,1-Dichloroethane	10.12	63	242998	51.15	ug/kg	99
23) Vinyl Acetate	10.30	43	2364126	306.37	ug/kg	98
24) Chloroprene	10.11	88	133318	67.00	ug/kg	82
25) 2-Butanone	11.18	72	86559	335.47	ug/kg	87
26) Propionitrile	11.46	54	235727	604.90	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	191156	52.73	ug/kg	100
28) Methacrylonitrile	11.50	67	660730	617.08	ug/kg	92
29) Chloroform	10.90	83	246535	56.20	ug/kg	97
31) Dibromofluoromethane	11.08	113	120402	50.80	ug/kg	100
32) Bromochloromethane	10.88	128	78117	53.70	ug/kg	96
33) 1,1,1-Trichloroethane	11.19	97	175141	50.53	ug/kg	95
34) 1,1-Dichloropropene	11.29	75	189949	55.94	ug/kg	99
35) Diethyl Ether	8.14	59	120761	49.07	ug/kg	94
36) Methyl Acetate	9.40	74	25473	54.68	ug/kg#	89
37) Cyclohexane	10.96	56	198695	48.93	ug/kg	94
39) Methyl Cyclohexane	12.08	55	159622	52.10	ug/kg	89
40) Carbon Tetrachloride	11.16	117	169862	49.14	ug/kg	98
41) 1,2-Dichloroethane	11.67	62	184760	51.84	ug/kg	98
42) Benzene	11.53	78	490550	61.48	ug/kg	99
43) Isobutyl Alcohol	11.55	43	246733	1154.19	ug/kg#	83
44) Trichloroethene	12.05	130	141138	59.01	ug/kg	99
45) 1,2-Dichloropropane	12.49	63	156391	57.23	ug/kg	98
46) Methyl Methacrylate	12.57	100	47715	68.61	ug/kg	99
47) 1,4-Dioxane	12.71	88	28216	1378.14	ug/kg	98
48) Bromodichloromethane	12.52	83	193419	60.66	ug/kg	98
49) Dibromomethane	12.42	93	96211	59.85	ug/kg	93
50) 4-Methyl-2-Pentanone	13.51	100	113961	345.98	ug/kg	91
51) 2-Chloroethyl vinyl ether	12.92	63	168950	240.37	ug/kg	100
52) 2-Hexanone	14.22	43	641931	321.57	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV002.D Vial: 2
Acq On : 27 Apr 2021 7:35 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 7:58 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

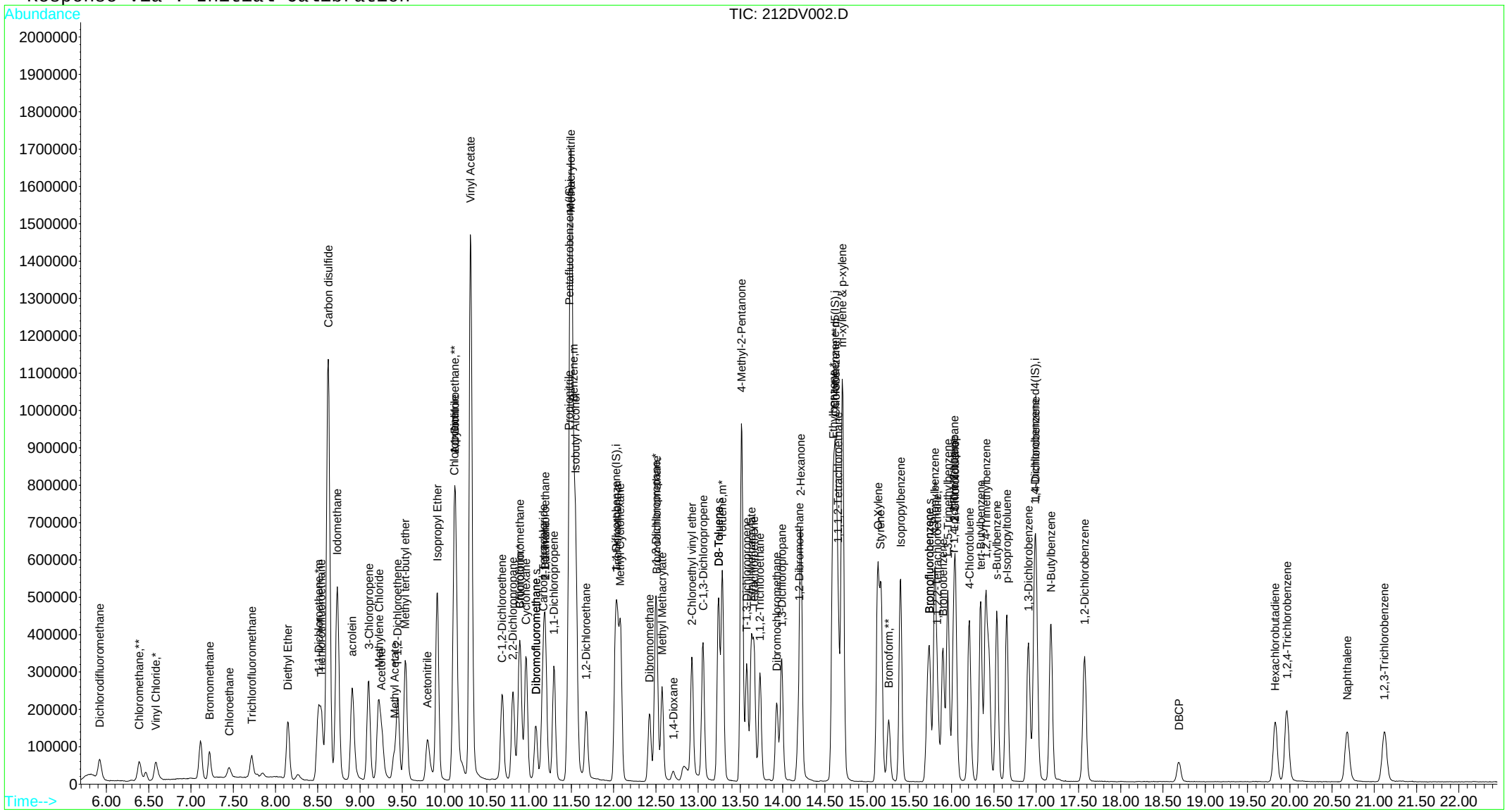
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	277096	63.48	ug/kg	96
55) D8-Toluene	13.24	98	404401	57.61	ug/kg	94
57) Toluene	13.29	92	316692	51.76	ug/kg	100
58) Ethyl Methacrylate	13.63	69	224450	51.99	ug/kg	97
59) T-1,3-Dichloropropene	13.57	75	228152	51.83	ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	119325	50.13	ug/kg	94
61) 1,3-Dichloropropane	13.99	76	258162	51.16	ug/kg	99
62) Tetrachloroethene	13.67	164	104945	56.49	ug/kg	88
63) Dibromochloromethane	13.93	129	152157	46.44	ug/kg	96
64) 1,2-Dibromoethane	14.19	107	142754	48.85	ug/kg	98
65) Chlorobenzene	14.63	112	335059	48.85	ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.66	131	128248	46.81	ug/kg#	55
67) Ethylbenzene	14.59	106	173546	49.44	ug/kg	95
68) m-xylene & p-xylene	14.70	106	426216	99.27	ug/kg	97
69) O-Xylene	15.13	106	216714	51.24	ug/kg	98
70) Bromoform	15.26	173	97758	57.40	ug/kg	98
71) Styrene	15.16	104	364500	50.33	ug/kg	100
72) Isopropylbenzene	15.40	105	522465	49.31	ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	200320	52.80	ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.83	83	168001	54.87	ug/kg	99
76) Bromofluorobenzene	15.74	95	167288	43.83	ug/kg#	67
77) T-1,4-dichloro-2-butene	16.02	53	49399	49.85	ug/kg	98
78) N-Propylbenzene	15.80	91	634025	52.72	ug/kg	97
80) Bromobenzene	15.90	156	155804	49.40	ug/kg	93
81) 1,3,5-Trimethylbenzene	15.95	105	403372	41.53	ug/kg	98
82) 2-Chlorotoluene	16.05	91	377810	42.55	ug/kg	97
83) 4-Chlorotoluene	16.21	91	395986	43.06	ug/kg	96
84) 1,2,4-Trimethylbenzene	16.41	105	411969	41.95	ug/kg	99
85) s-Butylbenzene	16.53	105	484460	42.12	ug/kg	100
86) tert-Butylbenzene	16.34	119	351467	40.77	ug/kg	98
87) p-Isopropyltoluene	16.65	119	416499	40.66	ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	264818	48.39	ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	265452	46.64	ug/kg	95
90) 1,2-Dichlorobenzene	17.57	146	251493	48.22	ug/kg	95
91) N-Butylbenzene	17.18	91	390804	45.18	ug/kg	99
92) DBCP	18.69	75	24200	37.66	ug/kg	80
93) Naphthalene	20.68	128	254641	44.82	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	133787	49.30	ug/kg	96
95) Hexachlorobutadiene	19.83	225	66635	55.58	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	103612	48.55	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV002.D Vial: 2
Acq On : 27 Apr 2021 7:35 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 7:58 2021 Quant Results File: 030921.RES

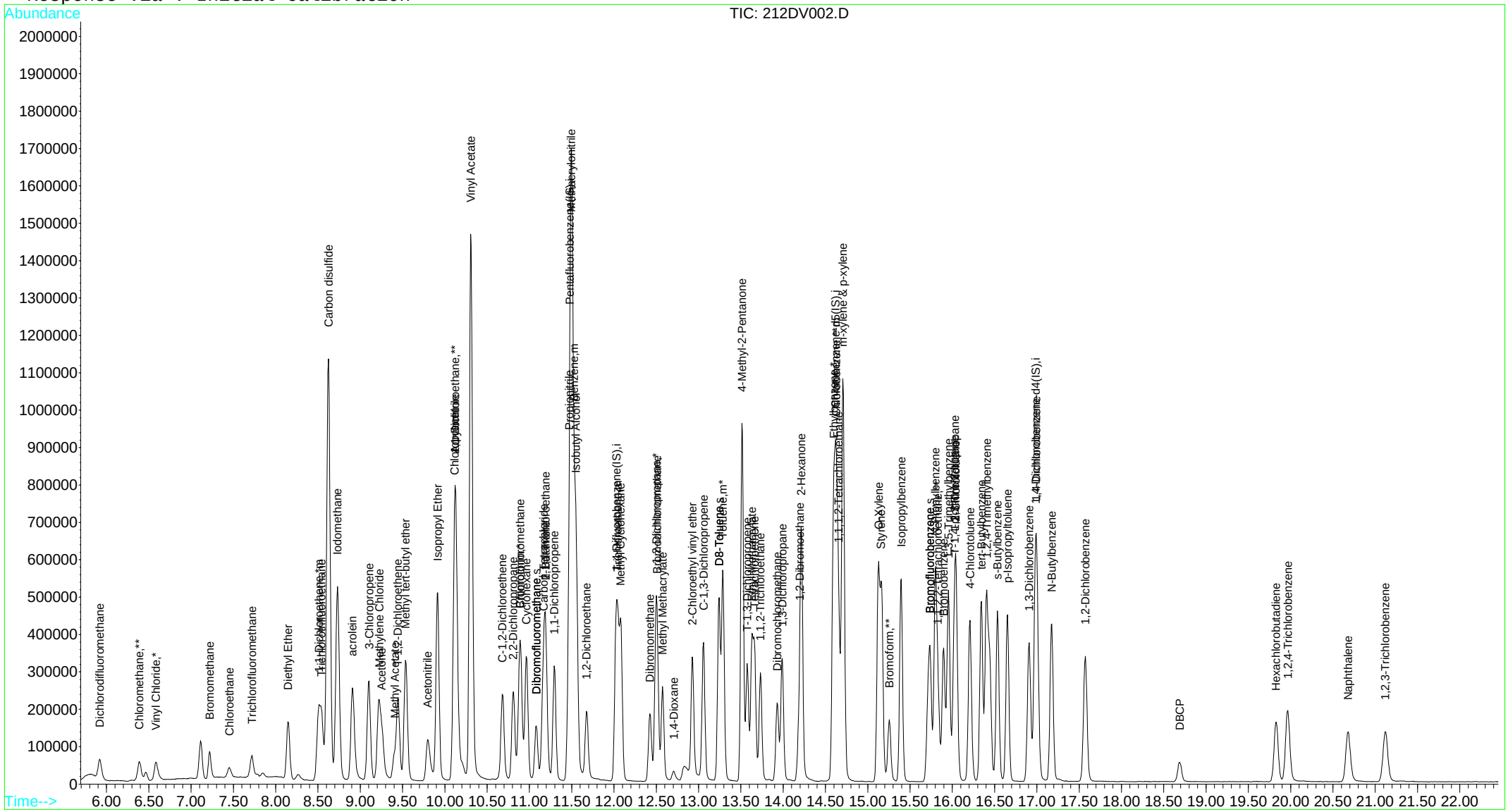
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV002.D Vial: 2
Acq On : 27 Apr 2021 7:35 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 7:58 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV003.D Vial: 3
Acq On : 27 Apr 2021 8:18 am Operator: nmc
Sample : 1d27005-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 8:40 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	229793	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	391367	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	231978	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	199862	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	129901	50.58	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.16%			
54) D8-Toluene	13.24	98	435456	59.05	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 118.10%			
75) Bromofluorobenzene	15.74	95	175773	43.92	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	79729	16.17	ug/kg	99
3) Chloromethane	6.39	50	84997	16.43	ug/kg	99
4) Vinyl Chloride	6.58	62	76901	19.20	ug/kg	98
5) Bromomethane	7.23	96	19827	9.04	ug/kg	96
6) Chloroethane	7.46	64	40803	19.32	ug/kg	95
7) Trichlorofluoromethane	7.72	101	66504	17.14	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	56545	22.98	ug/kg	87
9) acrolein	8.91	56	61087	90.39	ug/kg	96
10) Acetone	9.26	43	96952	109.99	ug/kg	95
11) 1,1-Dichloroethene	8.51	96	55030	24.34	ug/kg	93
12) 3-Chloropropene	9.11	76	39517	26.93	ug/kg	80
13) Acetonitrile	9.83	41	5745	15.51	ug/kg	94
14) Iodomethane	8.73	142	92859	28.40	ug/kg	90
15) Carbon disulfide	8.63	76	251842	32.71	ug/kg	99
16) Methylene Chloride	9.22	84	69095	23.59	ug/kg	90
17) Methyl tert-butyl ether	9.54	73	169865	22.68	ug/kg	97
18) Acrylonitrile	10.11	53	129857	82.25	ug/kg#	71
19) T-1,2-Dichloroethene	9.45	96	61767	25.38	ug/kg	93
20) Isopropyl Ether	9.92	45	275560	21.87	ug/kg	96
21) C-1,2-Dichloroethene	10.69	96	65361	24.82	ug/kg	95
22) 1,1-Dichloroethane	10.12	63	119313	23.18	ug/kg	99
23) Vinyl Acetate	10.32	43	182513	21.83	ug/kg	100
24) Chloroprene	10.11	88	54776	25.41	ug/kg	1
25) 2-Butanone	11.18	72	47070	168.39	ug/kg#	39
26) Propionitrile	11.48	54	7480	17.72	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	87818	22.36	ug/kg	95
28) Methacrylonitrile	11.50	67	27739	23.91	ug/kg	71
29) Chloroform	10.90	83	112255	23.62	ug/kg	95
31) Dibromofluoromethane	11.08	113	129901	50.58	ug/kg	100
32) Bromochloromethane	10.89	128	35974	22.83	ug/kg	95
33) 1,1,1-Trichloroethane	11.20	97	80281	21.38	ug/kg	95
34) 1,1-Dichloropropene	11.30	75	87622	23.82	ug/kg	99
35) Diethyl Ether	8.15	59	59425	22.29	ug/kg	94
36) Methyl Acetate	9.40	74	11416	22.62	ug/kg#	86
37) Cyclohexane	10.96	56	105848	24.06	ug/kg	95
39) Methyl Cyclohexane	12.09	55	79642	24.74	ug/kg	93
40) Carbon Tetrachloride	11.16	117	76795	21.15	ug/kg	98
41) 1,2-Dichloroethane	11.68	62	83357	22.27	ug/kg	98
42) Benzene	11.53	78	237908	28.38	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	60691	270.26	ug/kg#	1
44) Trichloroethene	12.05	130	62160	24.74	ug/kg	95
45) 1,2-Dichloropropane	12.50	63	67429	23.49	ug/kg	97
46) Methyl Methacrylate	12.58	100	18130	24.82	ug/kg	96
47) 1,4-Dioxane	12.71	88	10551	490.56	ug/kg	96
48) Bromodichloromethane	12.52	83	82891	24.75	ug/kg	99
49) Dibromomethane	12.42	93	40751	24.13	ug/kg	93
50) 4-Methyl-2-Pentanone	13.52	100	42553	122.98	ug/kg	88
51) 2-Chloroethyl vinyl ether	12.93	63	51141	69.26	ug/kg	99
52) 2-Hexanone	14.22	43	235002	112.06	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV003.D Vial: 3
Acq On : 27 Apr 2021 8:18 am Operator: nmc
Sample : 1d27005-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 8:40 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	112309	24.49 ug/kg	94
55) D8-Toluene	13.24	98	435456	59.05 ug/kg	93
57) Toluene	13.29	92	139650	21.77 ug/kg	99
58) Ethyl Methacrylate	13.63	69	87288	19.28 ug/kg	94
59) T-1,3-Dichloropropene	13.58	75	98504	21.34 ug/kg	95
60) 1,1,2-Trichloroethane	13.73	97	50297	20.15 ug/kg	95
61) 1,3-Dichloropropane	13.99	76	103871	19.63 ug/kg	100
62) Tetrachloroethene	13.67	164	46572	23.91 ug/kg	88
63) Dibromochloromethane	13.93	129	63529	18.49 ug/kg	96
64) 1,2-Dibromoethane	14.19	107	58778	19.18 ug/kg	97
65) Chlorobenzene	14.64	112	147678	20.53 ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.66	131	53864	18.75 ug/kg#	32
67) Ethylbenzene	14.59	106	74042	20.11 ug/kg	93
68) m-xylene & p-xylene	14.71	106	180185	40.02 ug/kg	96
69) O-Xylene	15.13	106	91436	20.61 ug/kg	96
70) Bromoform	15.26	173	41468	23.22 ug/kg	97
71) Styrene	15.16	104	155134	20.43 ug/kg	100
72) Isopropylbenzene	15.40	105	225178	20.26 ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	77718	19.53 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	67276	20.95 ug/kg	99
76) Bromofluorobenzene	15.74	95	175773	43.92 ug/kg#	79
77) T-1,4-dichloro-2-butene	16.02	53	18870	18.16 ug/kg	97
78) N-Propylbenzene	15.80	91	270817	21.47 ug/kg	98
80) Bromobenzene	15.90	156	66806	20.74 ug/kg	92
81) 1,3,5-Trimethylbenzene	15.96	105	170246	17.16 ug/kg	98
82) 2-Chlorotoluene	16.05	91	162612	17.93 ug/kg	96
83) 4-Chlorotoluene	16.21	91	167032	17.79 ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	175918	17.54 ug/kg	98
85) s-Butylbenzene	16.54	105	213510	18.17 ug/kg	100
86) tert-Butylbenzene	16.34	119	148925	16.92 ug/kg	97
87) p-Isopropyltoluene	16.66	119	181331	17.33 ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	112922	20.20 ug/kg	95
89) 1,4-Dichlorobenzene	17.01	146	114003	19.61 ug/kg	96
90) 1,2-Dichlorobenzene	17.57	146	107920	20.26 ug/kg	95
91) N-Butylbenzene	17.18	91	165584	18.74 ug/kg	99
92) DBCP	18.69	75	10402	15.85 ug/kg	83
93) Naphthalene	20.69	128	123887	23.35 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	59912	21.62 ug/kg	97
95) Hexachlorobutadiene	19.83	225	28411	23.20 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.13	180	48261	22.14 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV003.D Vial: 3
Acq On : 27 Apr 2021 8:18 am Operator: nmc
Sample : 1d27005-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 8:40 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	229793	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	391367	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	231978	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	199862	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	129901	50.58	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.16%			
54) D8-Toluene	13.24	98	435456	59.05	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 118.10%			
75) Bromofluorobenzene	15.74	95	175773	43.92	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.84%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	79729	16.17	ug/kg	99
3) Chloromethane	6.39	50	84997	16.43	ug/kg	99
4) Vinyl Chloride	6.58	62	76901	19.20	ug/kg	98
5) Bromomethane	7.23	96	19827	9.04	ug/kg	96
6) Chloroethane	7.46	64	40803	19.32	ug/kg	95
7) Trichlorofluoromethane	7.72	101	66504	17.14	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	56545	22.98	ug/kg	87
9) acrolein	8.91	56	61087	90.39	ug/kg	96
10) Acetone	9.26	43	96952	109.99	ug/kg	95
11) 1,1-Dichloroethene	8.51	96	55030	24.34	ug/kg	93
12) 3-Chloropropene	9.11	76	39517	26.93	ug/kg	80
13) Acetonitrile	9.83	41	5745	15.51	ug/kg	94
14) Iodomethane	8.73	142	92859	28.40	ug/kg	90
15) Carbon disulfide	8.63	76	251842	32.71	ug/kg	99
16) Methylene Chloride	9.22	84	69095	23.59	ug/kg	90
17) Methyl tert-butyl ether	9.54	73	169865	22.68	ug/kg	97
18) Acrylonitrile	10.11	53	129857	82.25	ug/kg#	71
19) T-1,2-Dichloroethene	9.45	96	61767	25.38	ug/kg	93
20) Isopropyl Ether	9.92	45	275560	21.87	ug/kg	96
21) C-1,2-Dichloroethene	10.69	96	65361	24.82	ug/kg	95
22) 1,1-Dichloroethane	10.12	63	119313	23.18	ug/kg	99
23) Vinyl Acetate	10.32	43	182513	21.83	ug/kg	100
24) Chloroprene	10.11	88	54776	25.41	ug/kg	1
25) 2-Butanone	11.18	72	47070	168.39	ug/kg#	39
26) Propionitrile	11.48	54	7480	17.72	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	87818	22.36	ug/kg	95
28) Methacrylonitrile	11.50	67	27739	23.91	ug/kg	71
29) Chloroform	10.90	83	112255	23.62	ug/kg	95
31) Dibromofluoromethane	11.08	113	129901	50.58	ug/kg	100
32) Bromochloromethane	10.89	128	35974	22.83	ug/kg	95
33) 1,1,1-Trichloroethane	11.20	97	80281	21.38	ug/kg	95
34) 1,1-Dichloropropene	11.30	75	87622	23.82	ug/kg	99
35) Diethyl Ether	8.15	59	59425	22.29	ug/kg	94
36) Methyl Acetate	9.40	74	11416	22.62	ug/kg#	86
37) Cyclohexane	10.96	56	105848	24.06	ug/kg	95
39) Methyl Cyclohexane	12.09	55	79642	24.74	ug/kg	93
40) Carbon Tetrachloride	11.16	117	76795	21.15	ug/kg	98
41) 1,2-Dichloroethane	11.68	62	83357	22.27	ug/kg	98
42) Benzene	11.53	78	237908	28.38	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	60691	270.26	ug/kg#	1
44) Trichloroethene	12.05	130	62160	24.74	ug/kg	95
45) 1,2-Dichloropropane	12.50	63	67429	23.49	ug/kg	97
46) Methyl Methacrylate	12.58	100	18130	24.82	ug/kg	96
47) 1,4-Dioxane	12.71	88	10551	490.56	ug/kg	96
48) Bromodichloromethane	12.52	83	82891	24.75	ug/kg	99
49) Dibromomethane	12.42	93	40751	24.13	ug/kg	93
50) 4-Methyl-2-Pentanone	13.52	100	42553	122.98	ug/kg	88
51) 2-Chloroethyl vinyl ether	12.93	63	51141	69.26	ug/kg	99
52) 2-Hexanone	14.22	43	235002	112.06	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042721\212DV003.D Vial: 3
Acq On : 27 Apr 2021 8:18 am Operator: nmc
Sample : 1d27005-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 8:40 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

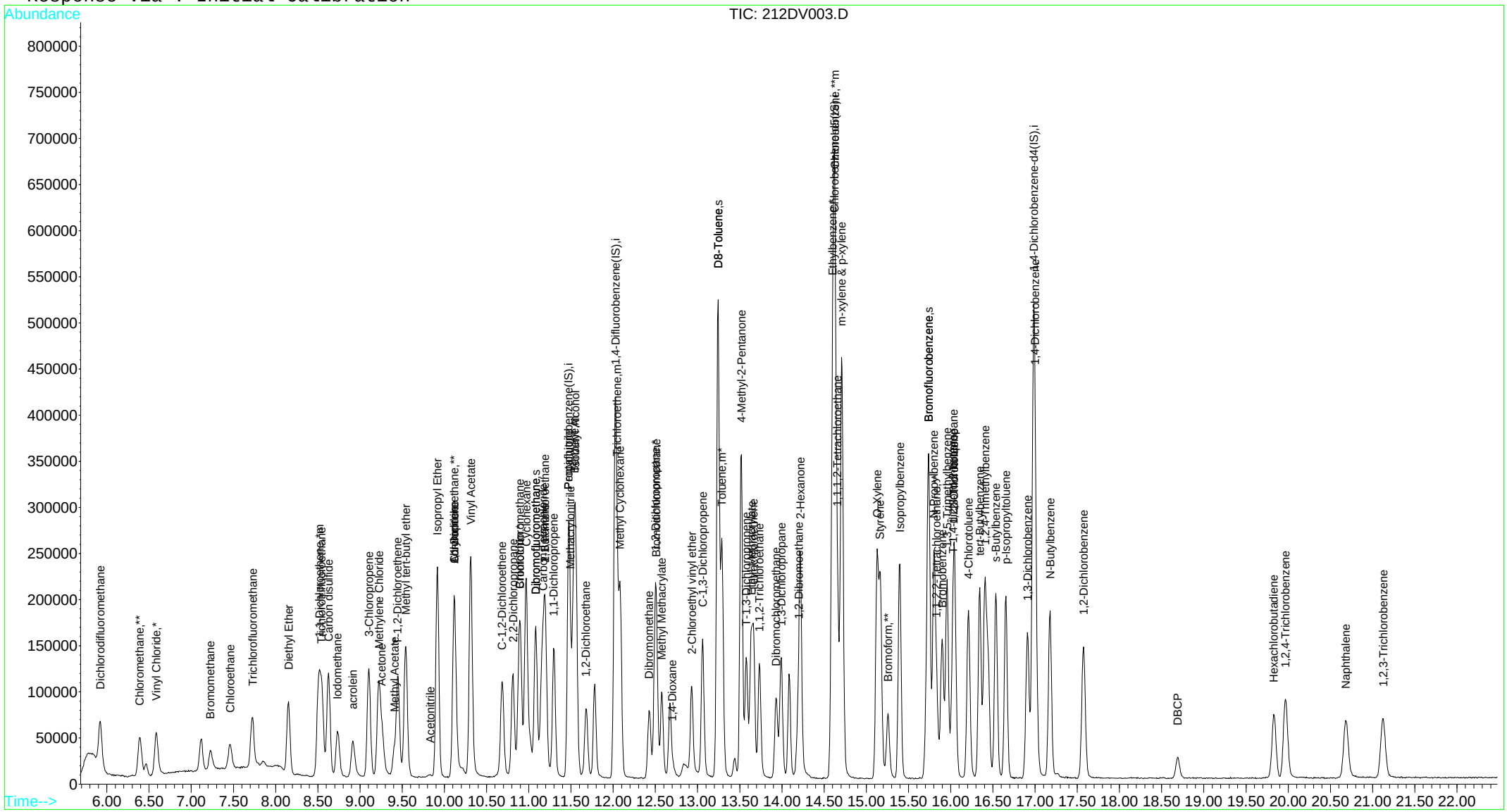
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53)	C-1,3-Dichloropropene	13.06	75	112309	24.49	ug/kg	94
55)	D8-Toluene	13.24	98	435456	59.05	ug/kg	93
57)	Toluene	13.29	92	139650	21.77	ug/kg	99
58)	Ethyl Methacrylate	13.63	69	87288	19.28	ug/kg	94
59)	T-1,3-Dichloropropene	13.58	75	98504	21.34	ug/kg	95
60)	1,1,2-Trichloroethane	13.73	97	50297	20.15	ug/kg	95
61)	1,3-Dichloropropane	13.99	76	103871	19.63	ug/kg	100
62)	Tetrachloroethene	13.67	164	46572	23.91	ug/kg	88
63)	Dibromochloromethane	13.93	129	63529	18.49	ug/kg	96
64)	1,2-Dibromoethane	14.19	107	58778	19.18	ug/kg	97
65)	Chlorobenzene	14.64	112	147678	20.53	ug/kg	95
66)	1,1,1,2-Tetrachloroethane	14.66	131	53864	18.75	ug/kg#	32
67)	Ethylbenzene	14.59	106	74042	20.11	ug/kg	93
68)	m-xylene & p-xylene	14.71	106	180185	40.02	ug/kg	96
69)	O-Xylene	15.13	106	91436	20.61	ug/kg	96
70)	Bromoform	15.26	173	41468	23.22	ug/kg	97
71)	Styrene	15.16	104	155134	20.43	ug/kg	100
72)	Isopropylbenzene	15.40	105	225178	20.26	ug/kg	99
73)	1,2,3-Trichloropropane	16.03	75	77718	19.53	ug/kg	99
74)	1,1,2,2-Tetrachloroethane	15.84	83	67276	20.95	ug/kg	99
76)	Bromofluorobenzene	15.74	95	175773	43.92	ug/kg#	79
77)	T-1,4-dichloro-2-butene	16.02	53	18870	18.16	ug/kg	97
78)	N-Propylbenzene	15.80	91	270817	21.47	ug/kg	98
80)	Bromobenzene	15.90	156	66806	20.74	ug/kg	92
81)	1,3,5-Trimethylbenzene	15.96	105	170246	17.16	ug/kg	98
82)	2-Chlorotoluene	16.05	91	162612	17.93	ug/kg	96
83)	4-Chlorotoluene	16.21	91	167032	17.79	ug/kg	98
84)	1,2,4-Trimethylbenzene	16.41	105	175918	17.54	ug/kg	98
85)	s-Butylbenzene	16.54	105	213510	18.17	ug/kg	100
86)	tert-Butylbenzene	16.34	119	148925	16.92	ug/kg	97
87)	p-Isopropyltoluene	16.66	119	181331	17.33	ug/kg	98
88)	1,3-Dichlorobenzene	16.91	146	112922	20.20	ug/kg	95
89)	1,4-Dichlorobenzene	17.01	146	114003	19.61	ug/kg	96
90)	1,2-Dichlorobenzene	17.57	146	107920	20.26	ug/kg	95
91)	N-Butylbenzene	17.18	91	165584	18.74	ug/kg	99
92)	DBCP	18.69	75	10402	15.85	ug/kg	83
93)	Naphthalene	20.69	128	123887	23.35	ug/kg	100
94)	1,2,4-Trichlorobenzene	19.97	180	59912	21.62	ug/kg	97
95)	Hexachlorobutadiene	19.83	225	28411	23.20	ug/kg	99
96)	1,2,3-Trichlorobenzene	21.13	180	48261	22.14	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV003.D Vial: 3
Acq On : 27 Apr 2021 8:18 am Operator: nmc
Sample : 1d27005-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 8:40 2021 Quant Results File: 030921.RES

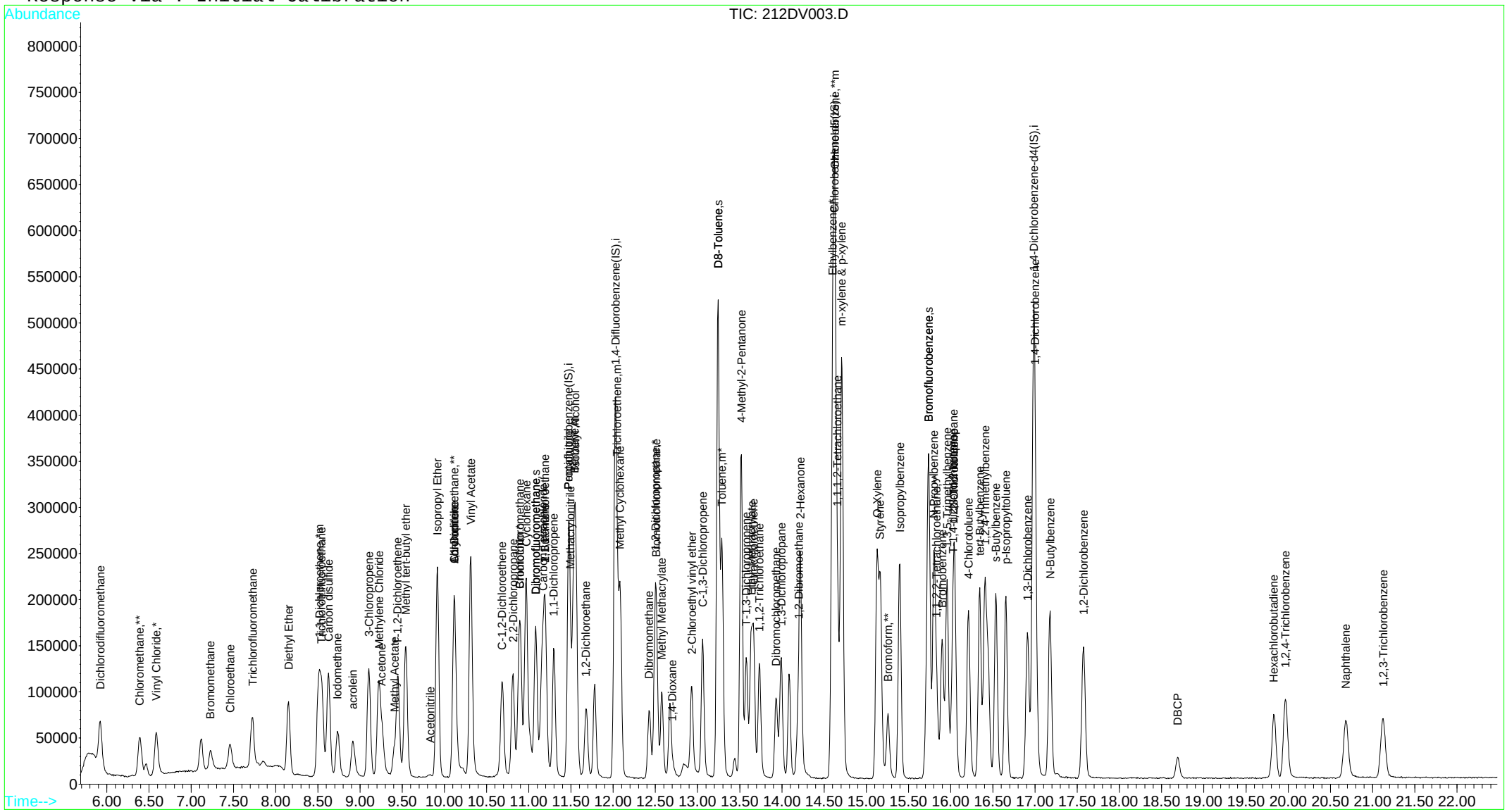
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV003.D Vial: 3
Acq On : 27 Apr 2021 8:18 am Operator: nmc
Sample : 1d27005-bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 8:40 2021 Quant Results File: 030921.RES

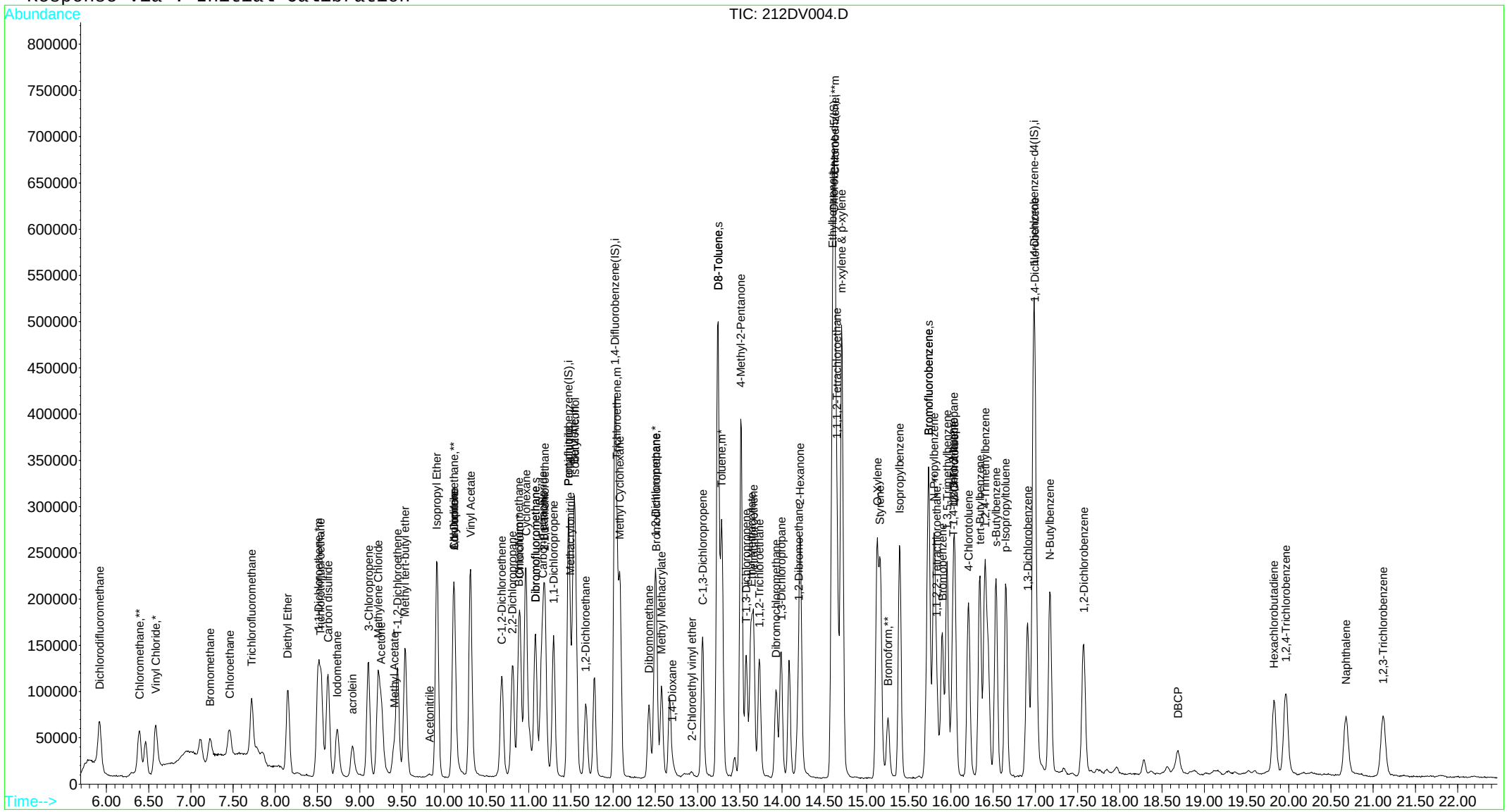
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV004.D Vial: 4
Acq On : 27 Apr 2021 8:48 am Operator: nmc
Sample : 1d27005-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:11 2021 Quant Results File: 030921.RES

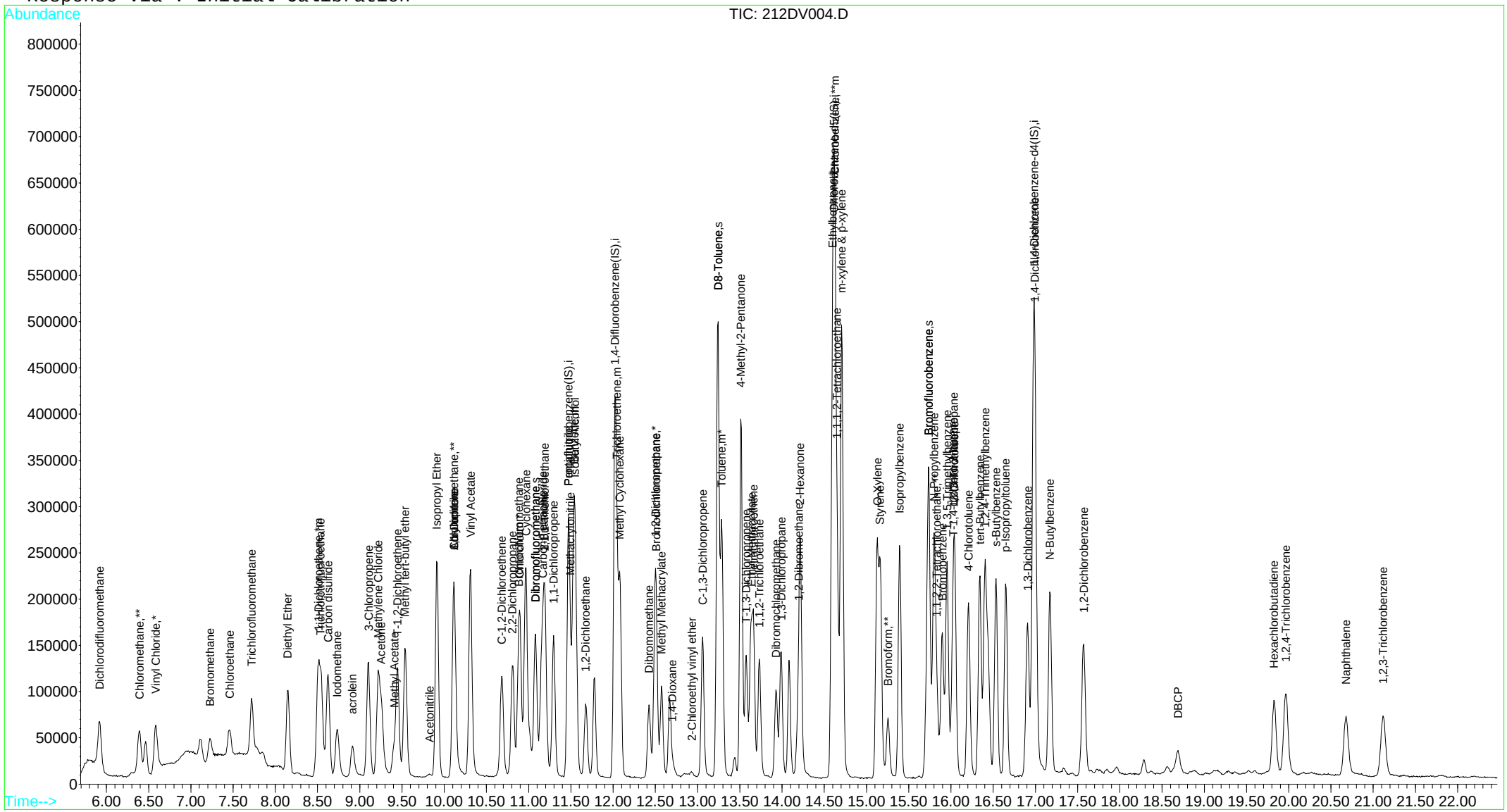
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV004.D Vial: 4
Acq On : 27 Apr 2021 8:48 am Operator: nmc
Sample : 1d27005-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:11 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV004.D Vial: 4
Acq On : 27 Apr 2021 8:48 am Operator: nmc
Sample : 1d27005-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:11 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	229881	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	390140	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	229306	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	199854	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	123727	48.16	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.32%			
54) D8-Toluene	13.24	98	415746	56.55	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.10%			
75) Bromofluorobenzene	15.74	95	167132	42.24	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	84847	17.21	ug/kg	98
3) Chloromethane	6.39	50	95670	18.49	ug/kg	99
4) Vinyl Chloride	6.58	62	82941	20.70	ug/kg	85
5) Bromomethane	7.23	96	19941	9.09	ug/kg	95
6) Chloroethane	7.45	64	41552	19.67	ug/kg	95
7) Trichlorofluoromethane	7.72	101	71840	18.50	ug/kg	99
8) Trichlorotrifluoroethane	8.54	101	61278	24.89	ug/kg	90
9) acrolein	8.91	56	51880	76.74	ug/kg	98
10) Acetone	9.26	43	142641	161.76	ug/kg	94
11) 1,1-Dichloroethene	8.50	96	59751	26.41	ug/kg	92
12) 3-Chloropropene	9.10	76	40677	27.71	ug/kg	82
13) Acetonitrile	9.82	41	6708	18.10	ug/kg	90
14) Iodomethane	8.73	142	98209	30.02	ug/kg	88
15) Carbon disulfide	8.62	76	250221	32.48	ug/kg	100
16) Methylene Chloride	9.22	84	71451	24.39	ug/kg	92
17) Methyl tert-butyl ether	9.54	73	161842	21.60	ug/kg	98
18) Acrylonitrile	10.11	53	135339	85.69	ug/kg#	72
19) T-1,2-Dichloroethene	9.45	96	66250	27.21	ug/kg	92
20) Isopropyl Ether	9.91	45	289306	22.95	ug/kg	96
21) C-1,2-Dichloroethene	10.68	96	68638	26.05	ug/kg	94
22) 1,1-Dichloroethane	10.12	63	127372	24.74	ug/kg	97
23) Vinyl Acetate	10.31	43	188428	22.53	ug/kg	99
24) Chloroprene	10.11	88	58011	26.90	ug/kg	1
25) 2-Butanone	11.18	72	48272	172.62	ug/kg#	42
26) Propionitrile	11.47	54	8049	19.06	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	97802	24.89	ug/kg	98
28) Methacrylonitrile	11.50	67	27809	23.96	ug/kg	71
29) Chloroform	10.90	83	118789	24.98	ug/kg	97
31) Dibromofluoromethane	11.08	113	123727	48.16	ug/kg	100
32) Bromochloromethane	10.88	128	37666	23.89	ug/kg	98
33) 1,1,1-Trichloroethane	11.19	97	86750	23.09	ug/kg	95
34) 1,1-Dichloropropene	11.29	75	94747	25.75	ug/kg	98
35) Diethyl Ether	8.14	59	61574	23.08	ug/kg	94
36) Methyl Acetate	9.40	74	12039	23.85	ug/kg	87
37) Cyclohexane	10.96	56	113498	25.79	ug/kg	92
39) Methyl Cyclohexane	12.08	55	81587	25.43	ug/kg	90
40) Carbon Tetrachloride	11.16	117	84455	23.33	ug/kg	97
41) 1,2-Dichloroethane	11.68	62	84901	22.75	ug/kg	96
42) Benzene	11.53	78	253314	30.32	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	54559	243.71	ug/kg#	1
44) Trichloroethene	12.05	130	67659	27.01	ug/kg	96
45) 1,2-Dichloropropane	12.50	63	71083	24.84	ug/kg	97
46) Methyl Methacrylate	12.57	100	18812	25.83	ug/kg	97
47) 1,4-Dioxane	12.71	88	11853	552.83	ug/kg	95
48) Bromodichloromethane	12.52	83	91153	27.30	ug/kg	97
49) Dibromomethane	12.42	93	42302	25.13	ug/kg	92
50) 4-Methyl-2-Pentanone	13.52	100	45895	133.05	ug/kg	89
51) 2-Chloroethyl vinyl ether	12.94	63	3342	4.54	ug/kg#	58
52) 2-Hexanone	14.22	43	254157	121.58	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV004.D Vial: 4
Acq On : 27 Apr 2021 8:48 am Operator: nmc
Sample : 1d27005-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:11 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	116741	25.54	ug/kg	96
55) D8-Toluene	13.24	98	415746	56.55	ug/kg	94
57) Toluene	13.29	92	151555	23.90	ug/kg	98
58) Ethyl Methacrylate	13.63	69	93159	20.82	ug/kg	95
59) T-1,3-Dichloropropene	13.57	75	97440	21.35	ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	53350	21.62	ug/kg	96
61) 1,3-Dichloropropane	13.99	76	108694	20.78	ug/kg	100
62) Tetrachloroethene	13.66	164	49867	25.90	ug/kg	88
63) Dibromochloromethane	13.93	129	70274	20.69	ug/kg	96
64) 1,2-Dibromoethane	14.19	107	59243	19.56	ug/kg	100
65) Chlorobenzene	14.63	112	153438	21.58	ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.66	131	55538	19.56	ug/kg#	35
67) Ethylbenzene	14.59	106	79201	21.76	ug/kg	96
68) m-xylene & p-xylene	14.70	106	187971	42.23	ug/kg	95
69) O-Xylene	15.13	106	95881	21.87	ug/kg	97
70) Bromoform	15.26	173	44011	24.93	ug/kg	98
71) Styrene	15.16	104	162894	21.70	ug/kg	100
72) Isopropylbenzene	15.39	105	240614	21.90	ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	80746	20.53	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.83	83	69825	22.00	ug/kg	99
76) Bromofluorobenzene	15.74	95	167132	42.24	ug/kg#	79
77) T-1,4-dichloro-2-butene	16.02	53	17602	17.14	ug/kg#	80
78) N-Propylbenzene	15.80	91	286755	23.00	ug/kg	97
80) Bromobenzene	15.90	156	68493	21.26	ug/kg	91
81) 1,3,5-Trimethylbenzene	15.95	105	179623	18.11	ug/kg	98
82) 2-Chlorotoluene	16.05	91	168315	18.56	ug/kg	97
83) 4-Chlorotoluene	16.21	91	172249	18.34	ug/kg	97
84) 1,2,4-Trimethylbenzene	16.40	105	185576	18.50	ug/kg	99
85) s-Butylbenzene	16.53	105	226812	19.31	ug/kg	100
86) tert-Butylbenzene	16.34	119	159769	18.15	ug/kg	98
87) p-Isopropyltoluene	16.65	119	192730	18.42	ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	117627	21.04	ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	116323	20.01	ug/kg	97
90) 1,2-Dichlorobenzene	17.57	146	109787	20.61	ug/kg	96
91) N-Butylbenzene	17.18	91	175744	19.89	ug/kg	98
92) DBCP	18.69	75	10598	16.15	ug/kg	81
93) Naphthalene	20.68	128	123096	23.22	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	59939	21.63	ug/kg	97
95) Hexachlorobutadiene	19.83	225	32188	26.29	ug/kg	100
96) 1,2,3-Trichlorobenzene	21.12	180	49398	22.66	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV004.D Vial: 4
Acq On : 27 Apr 2021 8:48 am Operator: nmc
Sample : 1d27005-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:11 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	229881	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	390140	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	229306	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	199854	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	123727	48.16	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.32%			
54) D8-Toluene	13.24	98	415746	56.55	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.10%			
75) Bromofluorobenzene	15.74	95	167132	42.24	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.48%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	84847	17.21	ug/kg	98
3) Chloromethane	6.39	50	95670	18.49	ug/kg	99
4) Vinyl Chloride	6.58	62	82941	20.70	ug/kg	85
5) Bromomethane	7.23	96	19941	9.09	ug/kg	95
6) Chloroethane	7.45	64	41552	19.67	ug/kg	95
7) Trichlorofluoromethane	7.72	101	71840	18.50	ug/kg	99
8) Trichlorotrifluoroethane	8.54	101	61278	24.89	ug/kg	90
9) acrolein	8.91	56	51880	76.74	ug/kg	98
10) Acetone	9.26	43	142641	161.76	ug/kg	94
11) 1,1-Dichloroethene	8.50	96	59751	26.41	ug/kg	92
12) 3-Chloropropene	9.10	76	40677	27.71	ug/kg	82
13) Acetonitrile	9.82	41	6708	18.10	ug/kg	90
14) Iodomethane	8.73	142	98209	30.02	ug/kg	88
15) Carbon disulfide	8.62	76	250221	32.48	ug/kg	100
16) Methylene Chloride	9.22	84	71451	24.39	ug/kg	92
17) Methyl tert-butyl ether	9.54	73	161842	21.60	ug/kg	98
18) Acrylonitrile	10.11	53	135339	85.69	ug/kg#	72
19) T-1,2-Dichloroethene	9.45	96	66250	27.21	ug/kg	92
20) Isopropyl Ether	9.91	45	289306	22.95	ug/kg	96
21) C-1,2-Dichloroethene	10.68	96	68638	26.05	ug/kg	94
22) 1,1-Dichloroethane	10.12	63	127372	24.74	ug/kg	97
23) Vinyl Acetate	10.31	43	188428	22.53	ug/kg	99
24) Chloroprene	10.11	88	58011	26.90	ug/kg	1
25) 2-Butanone	11.18	72	48272	172.62	ug/kg#	42
26) Propionitrile	11.47	54	8049	19.06	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	97802	24.89	ug/kg	98
28) Methacrylonitrile	11.50	67	27809	23.96	ug/kg	71
29) Chloroform	10.90	83	118789	24.98	ug/kg	97
31) Dibromofluoromethane	11.08	113	123727	48.16	ug/kg	100
32) Bromochloromethane	10.88	128	37666	23.89	ug/kg	98
33) 1,1,1-Trichloroethane	11.19	97	86750	23.09	ug/kg	95
34) 1,1-Dichloropropene	11.29	75	94747	25.75	ug/kg	98
35) Diethyl Ether	8.14	59	61574	23.08	ug/kg	94
36) Methyl Acetate	9.40	74	12039	23.85	ug/kg	87
37) Cyclohexane	10.96	56	113498	25.79	ug/kg	92
39) Methyl Cyclohexane	12.08	55	81587	25.43	ug/kg	90
40) Carbon Tetrachloride	11.16	117	84455	23.33	ug/kg	97
41) 1,2-Dichloroethane	11.68	62	84901	22.75	ug/kg	96
42) Benzene	11.53	78	253314	30.32	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	54559	243.71	ug/kg#	1
44) Trichloroethene	12.05	130	67659	27.01	ug/kg	96
45) 1,2-Dichloropropane	12.50	63	71083	24.84	ug/kg	97
46) Methyl Methacrylate	12.57	100	18812	25.83	ug/kg	97
47) 1,4-Dioxane	12.71	88	11853	552.83	ug/kg	95
48) Bromodichloromethane	12.52	83	91153	27.30	ug/kg	97
49) Dibromomethane	12.42	93	42302	25.13	ug/kg	92
50) 4-Methyl-2-Pentanone	13.52	100	45895	133.05	ug/kg	89
51) 2-Chloroethyl vinyl ether	12.94	63	3342	4.54	ug/kg#	58
52) 2-Hexanone	14.22	43	254157	121.58	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042721\212DV004.D Vial: 4
Acq On : 27 Apr 2021 8:48 am Operator: nmc
Sample : 1d27005-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:11 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	116741	25.54 ug/kg	96
55) D8-Toluene	13.24	98	415746	56.55 ug/kg	94
57) Toluene	13.29	92	151555	23.90 ug/kg	98
58) Ethyl Methacrylate	13.63	69	93159	20.82 ug/kg	95
59) T-1,3-Dichloropropene	13.57	75	97440	21.35 ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	53350	21.62 ug/kg	96
61) 1,3-Dichloropropane	13.99	76	108694	20.78 ug/kg	100
62) Tetrachloroethene	13.66	164	49867	25.90 ug/kg	88
63) Dibromochloromethane	13.93	129	70274	20.69 ug/kg	96
64) 1,2-Dibromoethane	14.19	107	59243	19.56 ug/kg	100
65) Chlorobenzene	14.63	112	153438	21.58 ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.66	131	55538	19.56 ug/kg#	35
67) Ethylbenzene	14.59	106	79201	21.76 ug/kg	96
68) m-xylene & p-xylene	14.70	106	187971	42.23 ug/kg	95
69) O-Xylene	15.13	106	95881	21.87 ug/kg	97
70) Bromoform	15.26	173	44011	24.93 ug/kg	98
71) Styrene	15.16	104	162894	21.70 ug/kg	100
72) Isopropylbenzene	15.39	105	240614	21.90 ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	80746	20.53 ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.83	83	69825	22.00 ug/kg	99
76) Bromofluorobenzene	15.74	95	167132	42.24 ug/kg#	79
77) T-1,4-dichloro-2-butene	16.02	53	17602	17.14 ug/kg#	80
78) N-Propylbenzene	15.80	91	286755	23.00 ug/kg	97
80) Bromobenzene	15.90	156	68493	21.26 ug/kg	91
81) 1,3,5-Trimethylbenzene	15.95	105	179623	18.11 ug/kg	98
82) 2-Chlorotoluene	16.05	91	168315	18.56 ug/kg	97
83) 4-Chlorotoluene	16.21	91	172249	18.34 ug/kg	97
84) 1,2,4-Trimethylbenzene	16.40	105	185576	18.50 ug/kg	99
85) s-Butylbenzene	16.53	105	226812	19.31 ug/kg	100
86) tert-Butylbenzene	16.34	119	159769	18.15 ug/kg	98
87) p-Isopropyltoluene	16.65	119	192730	18.42 ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	117627	21.04 ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	116323	20.01 ug/kg	97
90) 1,2-Dichlorobenzene	17.57	146	109787	20.61 ug/kg	96
91) N-Butylbenzene	17.18	91	175744	19.89 ug/kg	98
92) DBCP	18.69	75	10598	16.15 ug/kg	81
93) Naphthalene	20.68	128	123096	23.22 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	59939	21.63 ug/kg	97
95) Hexachlorobutadiene	19.83	225	32188	26.29 ug/kg	100
96) 1,2,3-Trichlorobenzene	21.12	180	49398	22.66 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV005.D Vial: 4
Acq On : 27 Apr 2021 9:17 am Operator: nmc
Sample : 1d27005-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	223914	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.02	114	381932	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.61	82	226180	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	195590	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	122813	49.08	ug/kg	-0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 98.16%			
54) D8-Toluene	13.24	98	414909	57.65	ug/kg	-0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 115.30%			
75) Bromofluorobenzene	15.74	95	167396	42.89	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	81518	16.97	ug/kg	99
3) Chloromethane	6.39	50	93998	18.65	ug/kg	98
4) Vinyl Chloride	6.58	62	79806	20.44	ug/kg	83
5) Bromomethane	7.23	96	19090	8.92	ug/kg	96
6) Chloroethane	7.46	64	57729	28.06	ug/kg	84
7) Trichlorofluoromethane	7.72	101	69578	18.40	ug/kg	99
8) Trichlorotrifluoroethane	8.54	101	58649	24.46	ug/kg	88
9) acrolein	8.91	56	50586	76.82	ug/kg	97
10) Acetone	9.26	43	143688	167.29	ug/kg	95
11) 1,1-Dichloroethene	8.50	96	57666	26.17	ug/kg	91
12) 3-Chloropropene	9.10	76	40114	28.06	ug/kg	82
13) Acetonitrile	9.82	41	7340	20.33	ug/kg#	62
14) Iodomethane	8.73	142	97993	30.75	ug/kg	89
15) Carbon disulfide	8.62	76	239580	31.93	ug/kg	99
16) Methylene Chloride	9.22	84	70627	24.75	ug/kg	91
17) Methyl tert-butyl ether	9.53	73	165854	22.73	ug/kg	99
18) Acrylonitrile	10.11	53	132870	86.37	ug/kg#	73
19) T-1,2-Dichloroethene	9.44	96	64493	27.20	ug/kg	92
20) Isopropyl Ether	9.91	45	288192	23.47	ug/kg	97
21) C-1,2-Dichloroethene	10.68	96	65933	25.69	ug/kg	97
22) 1,1-Dichloroethane	10.12	63	126010	25.12	ug/kg	96
23) Vinyl Acetate	10.31	43	186239	22.86	ug/kg	99
24) Chloroprene	10.11	88	56510	26.90	ug/kg	1
25) 2-Butanone	11.18	72	48046	176.39	ug/kg#	43
26) Propionitrile	11.47	54	7853	19.09	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	97129	25.38	ug/kg	94
28) Methacrylonitrile	11.50	67	28287	25.03	ug/kg	70
29) Chloroform	10.90	83	119294	25.76	ug/kg	96
31) Dibromofluoromethane	11.07	113	122813	49.08	ug/kg	100
32) Bromochloromethane	10.88	128	36894	24.02	ug/kg	98
33) 1,1,1-Trichloroethane	11.19	97	85933	23.49	ug/kg	94
34) 1,1-Dichloropropene	11.29	75	91554	25.54	ug/kg	99
35) Diethyl Ether	8.14	59	60565	23.31	ug/kg	93
36) Methyl Acetate	9.40	74	12499	25.42	ug/kg#	84
37) Cyclohexane	10.96	56	110448	25.77	ug/kg	95
39) Methyl Cyclohexane	12.08	55	76464	24.34	ug/kg	87
40) Carbon Tetrachloride	11.16	117	82390	23.25	ug/kg	98
41) 1,2-Dichloroethane	11.67	62	83933	22.97	ug/kg	95
42) Benzene	11.53	78	249584	30.51	ug/kg#	48
43) Isobutyl Alcohol	11.55	43	56724	258.83	ug/kg#	1
44) Trichloroethene	12.05	130	66834	27.26	ug/kg	96
45) 1,2-Dichloropropane	12.49	63	69736	24.89	ug/kg	97
46) Methyl Methacrylate	12.57	100	19111	26.81	ug/kg	98
47) 1,4-Dioxane	12.71	88	11764	560.47	ug/kg	97
48) Bromodichloromethane	12.52	83	89709	27.45	ug/kg	99
49) Dibromomethane	12.42	93	42508	25.79	ug/kg	92
50) 4-Methyl-2-Pentanone	13.51	100	46464	137.60	ug/kg	88
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	d	
52) 2-Hexanone	14.22	43	254597	124.41	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042721\212DV005.D Vial: 4
Acq On : 27 Apr 2021 9:17 am Operator: nmc
Sample : 1d27005-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	115026	25.70	ug/kg	96
55) D8-Toluene	13.24	98	414909	57.65	ug/kg	94
57) Toluene	13.28	92	149991	23.98	ug/kg	98
58) Ethyl Methacrylate	13.63	69	93075	21.09	ug/kg	95
59) T-1,3-Dichloropropene	13.57	75	101036	22.45	ug/kg	92
60) 1,1,2-Trichloroethane	13.73	97	52226	21.46	ug/kg	95
61) 1,3-Dichloropropane	13.98	76	106453	20.63	ug/kg	100
62) Tetrachloroethene	13.66	164	49387	26.00	ug/kg	87
63) Dibromochloromethane	13.93	129	69245	20.67	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	59719	19.99	ug/kg	99
65) Chlorobenzene	14.63	112	150877	21.51	ug/kg	96
66) 1,1,1,2-Tetrachloroethane	14.65	131	55626	19.86	ug/kg#	38
67) Ethylbenzene	14.59	106	77016	21.46	ug/kg	94
68) m-xylene & p-xylene	14.70	106	188076	42.84	ug/kg	99
69) O-Xylene	15.13	106	94498	21.85	ug/kg	96
70) Bromoform	15.26	173	44148	25.35	ug/kg	98
71) Styrene	15.16	104	160908	21.73	ug/kg	99
72) Isopropylbenzene	15.39	105	232020	21.41	ug/kg	100
73) 1,2,3-Trichloropropane	16.02	75	80889	20.85	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.83	83	70650	22.57	ug/kg	98
76) Bromofluorobenzene	15.74	95	167396	42.89	ug/kg#	80
77) T-1,4-dichloro-2-butene	16.01	53	18842	18.60	ug/kg	92
78) N-Propylbenzene	15.80	91	275959	22.44	ug/kg	97
80) Bromobenzene	15.90	156	67626	21.45	ug/kg	91
81) 1,3,5-Trimethylbenzene	15.95	105	176721	18.20	ug/kg	99
82) 2-Chlorotoluene	16.05	91	164682	18.56	ug/kg	97
83) 4-Chlorotoluene	16.21	91	170006	18.50	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.40	105	178473	18.18	ug/kg	99
85) s-Butylbenzene	16.53	105	217015	18.88	ug/kg	100
86) tert-Butylbenzene	16.34	119	154533	17.94	ug/kg	97
87) p-Isopropyltoluene	16.65	119	185158	18.08	ug/kg	97
88) 1,3-Dichlorobenzene	16.91	146	113171	20.69	ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	116331	20.45	ug/kg	96
90) 1,2-Dichlorobenzene	17.57	146	109277	20.96	ug/kg	95
91) N-Butylbenzene	17.17	91	165909	19.19	ug/kg	99
92) DBCP	18.68	75	10786	16.79	ug/kg	82
93) Naphthalene	20.68	128	123333	23.72	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	57567	21.23	ug/kg	97
95) Hexachlorobutadiene	19.82	225	28255	23.58	ug/kg	98
96) 1,2,3-Trichlorobenzene	21.12	180	47799	22.41	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV005.D Vial: 4
Acq On : 27 Apr 2021 9:17 am Operator: nmc
Sample : 1d27005-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	223914	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.02	114	381932	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.61	82	226180	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	195590	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.07	113	122813	49.08	ug/kg	-0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 98.16%			
54) D8-Toluene	13.24	98	414909	57.65	ug/kg	-0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 115.30%			
75) Bromofluorobenzene	15.74	95	167396	42.89	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	81518	16.97	ug/kg	99
3) Chloromethane	6.39	50	93998	18.65	ug/kg	98
4) Vinyl Chloride	6.58	62	79806	20.44	ug/kg	83
5) Bromomethane	7.23	96	19090	8.92	ug/kg	96
6) Chloroethane	7.46	64	57729	28.06	ug/kg	84
7) Trichlorofluoromethane	7.72	101	69578	18.40	ug/kg	99
8) Trichlorotrifluoroethane	8.54	101	58649	24.46	ug/kg	88
9) acrolein	8.91	56	50586	76.82	ug/kg	97
10) Acetone	9.26	43	143688	167.29	ug/kg	95
11) 1,1-Dichloroethene	8.50	96	57666	26.17	ug/kg	91
12) 3-Chloropropene	9.10	76	40114	28.06	ug/kg	82
13) Acetonitrile	9.82	41	7340	20.33	ug/kg#	62
14) Iodomethane	8.73	142	97993	30.75	ug/kg	89
15) Carbon disulfide	8.62	76	239580	31.93	ug/kg	99
16) Methylene Chloride	9.22	84	70627	24.75	ug/kg	91
17) Methyl tert-butyl ether	9.53	73	165854	22.73	ug/kg	99
18) Acrylonitrile	10.11	53	132870	86.37	ug/kg#	73
19) T-1,2-Dichloroethene	9.44	96	64493	27.20	ug/kg	92
20) Isopropyl Ether	9.91	45	288192	23.47	ug/kg	97
21) C-1,2-Dichloroethene	10.68	96	65933	25.69	ug/kg	97
22) 1,1-Dichloroethane	10.12	63	126010	25.12	ug/kg	96
23) Vinyl Acetate	10.31	43	186239	22.86	ug/kg	99
24) Chloroprene	10.11	88	56510	26.90	ug/kg	1
25) 2-Butanone	11.18	72	48046	176.39	ug/kg#	43
26) Propionitrile	11.47	54	7853	19.09	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	97129	25.38	ug/kg	94
28) Methacrylonitrile	11.50	67	28287	25.03	ug/kg	70
29) Chloroform	10.90	83	119294	25.76	ug/kg	96
31) Dibromofluoromethane	11.07	113	122813	49.08	ug/kg	100
32) Bromochloromethane	10.88	128	36894	24.02	ug/kg	98
33) 1,1,1-Trichloroethane	11.19	97	85933	23.49	ug/kg	94
34) 1,1-Dichloropropene	11.29	75	91554	25.54	ug/kg	99
35) Diethyl Ether	8.14	59	60565	23.31	ug/kg	93
36) Methyl Acetate	9.40	74	12499	25.42	ug/kg#	84
37) Cyclohexane	10.96	56	110448	25.77	ug/kg	95
39) Methyl Cyclohexane	12.08	55	76464	24.34	ug/kg	87
40) Carbon Tetrachloride	11.16	117	82390	23.25	ug/kg	98
41) 1,2-Dichloroethane	11.67	62	83933	22.97	ug/kg	95
42) Benzene	11.53	78	249584	30.51	ug/kg#	48
43) Isobutyl Alcohol	11.55	43	56724	258.83	ug/kg#	1
44) Trichloroethene	12.05	130	66834	27.26	ug/kg	96
45) 1,2-Dichloropropane	12.49	63	69736	24.89	ug/kg	97
46) Methyl Methacrylate	12.57	100	19111	26.81	ug/kg	98
47) 1,4-Dioxane	12.71	88	11764	560.47	ug/kg	97
48) Bromodichloromethane	12.52	83	89709	27.45	ug/kg	99
49) Dibromomethane	12.42	93	42508	25.79	ug/kg	92
50) 4-Methyl-2-Pentanone	13.51	100	46464	137.60	ug/kg	88
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	d	
52) 2-Hexanone	14.22	43	254597	124.41	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV005.D Vial: 4
Acq On : 27 Apr 2021 9:17 am Operator: nmc
Sample : 1d27005-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

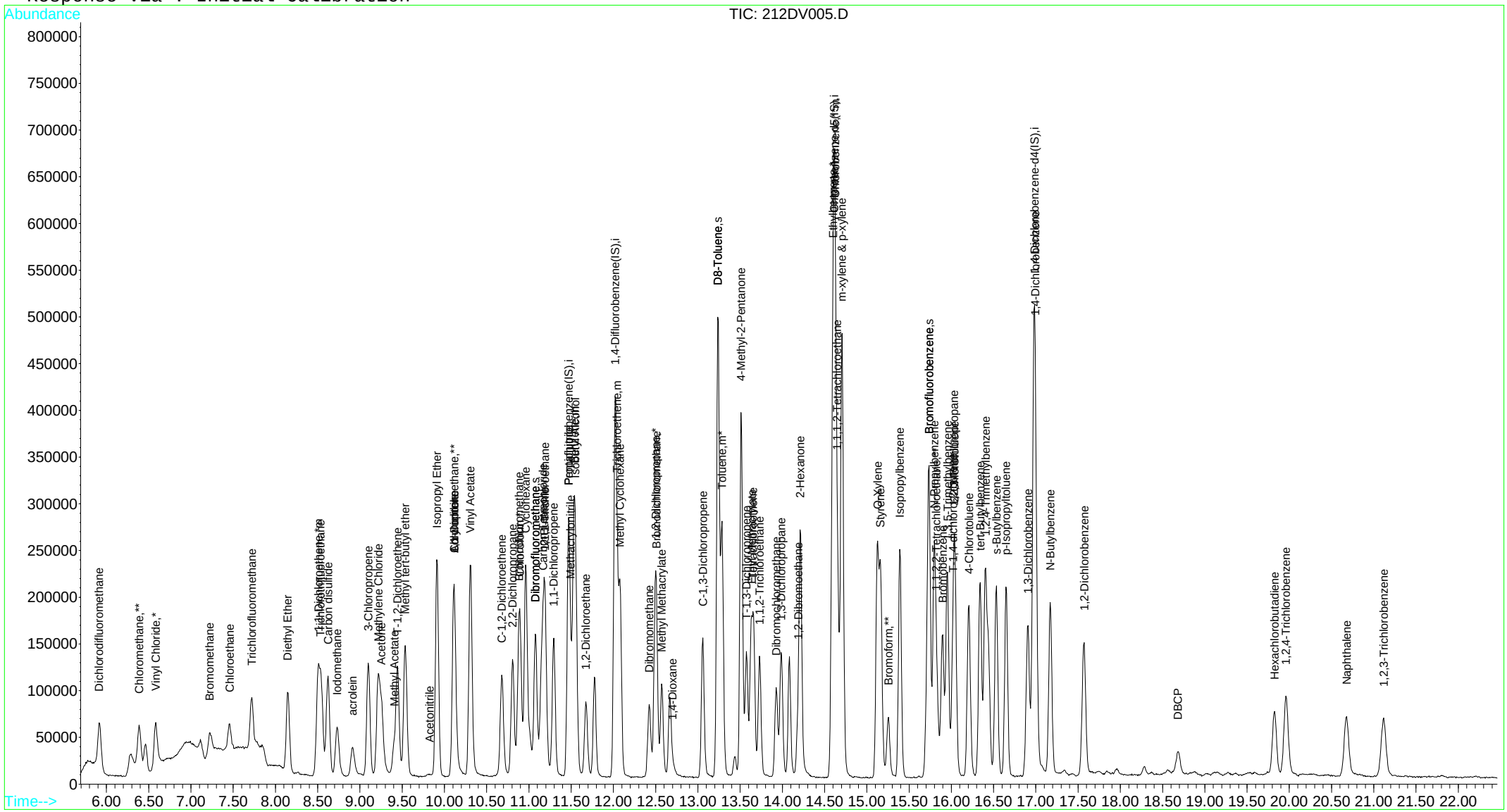
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	115026	25.70	ug/kg	96
55) D8-Toluene	13.24	98	414909	57.65	ug/kg	94
57) Toluene	13.28	92	149991	23.98	ug/kg	98
58) Ethyl Methacrylate	13.63	69	93075	21.09	ug/kg	95
59) T-1,3-Dichloropropene	13.57	75	101036	22.45	ug/kg	92
60) 1,1,2-Trichloroethane	13.73	97	52226	21.46	ug/kg	95
61) 1,3-Dichloropropane	13.98	76	106453	20.63	ug/kg	100
62) Tetrachloroethene	13.66	164	49387	26.00	ug/kg	87
63) Dibromochloromethane	13.93	129	69245	20.67	ug/kg	96
64) 1,2-Dibromoethane	14.18	107	59719	19.99	ug/kg	99
65) Chlorobenzene	14.63	112	150877	21.51	ug/kg	96
66) 1,1,1,2-Tetrachloroethane	14.65	131	55626	19.86	ug/kg#	38
67) Ethylbenzene	14.59	106	77016	21.46	ug/kg	94
68) m-xylene & p-xylene	14.70	106	188076	42.84	ug/kg	99
69) O-Xylene	15.13	106	94498	21.85	ug/kg	96
70) Bromoform	15.26	173	44148	25.35	ug/kg	98
71) Styrene	15.16	104	160908	21.73	ug/kg	99
72) Isopropylbenzene	15.39	105	232020	21.41	ug/kg	100
73) 1,2,3-Trichloropropane	16.02	75	80889	20.85	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.83	83	70650	22.57	ug/kg	98
76) Bromofluorobenzene	15.74	95	167396	42.89	ug/kg#	80
77) T-1,4-dichloro-2-butene	16.01	53	18842	18.60	ug/kg	92
78) N-Propylbenzene	15.80	91	275959	22.44	ug/kg	97
80) Bromobenzene	15.90	156	67626	21.45	ug/kg	91
81) 1,3,5-Trimethylbenzene	15.95	105	176721	18.20	ug/kg	99
82) 2-Chlorotoluene	16.05	91	164682	18.56	ug/kg	97
83) 4-Chlorotoluene	16.21	91	170006	18.50	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.40	105	178473	18.18	ug/kg	99
85) s-Butylbenzene	16.53	105	217015	18.88	ug/kg	100
86) tert-Butylbenzene	16.34	119	154533	17.94	ug/kg	97
87) p-Isopropyltoluene	16.65	119	185158	18.08	ug/kg	97
88) 1,3-Dichlorobenzene	16.91	146	113171	20.69	ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	116331	20.45	ug/kg	96
90) 1,2-Dichlorobenzene	17.57	146	109277	20.96	ug/kg	95
91) N-Butylbenzene	17.17	91	165909	19.19	ug/kg	99
92) DBCP	18.68	75	10786	16.79	ug/kg	82
93) Naphthalene	20.68	128	123333	23.72	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.96	180	57567	21.23	ug/kg	97
95) Hexachlorobutadiene	19.82	225	28255	23.58	ug/kg	98
96) 1,2,3-Trichlorobenzene	21.12	180	47799	22.41	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV005.D Vial: 4
Acq On : 27 Apr 2021 9:17 am Operator: nmc
Sample : 1d27005-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:46 2021 Quant Results File: 030921.RES

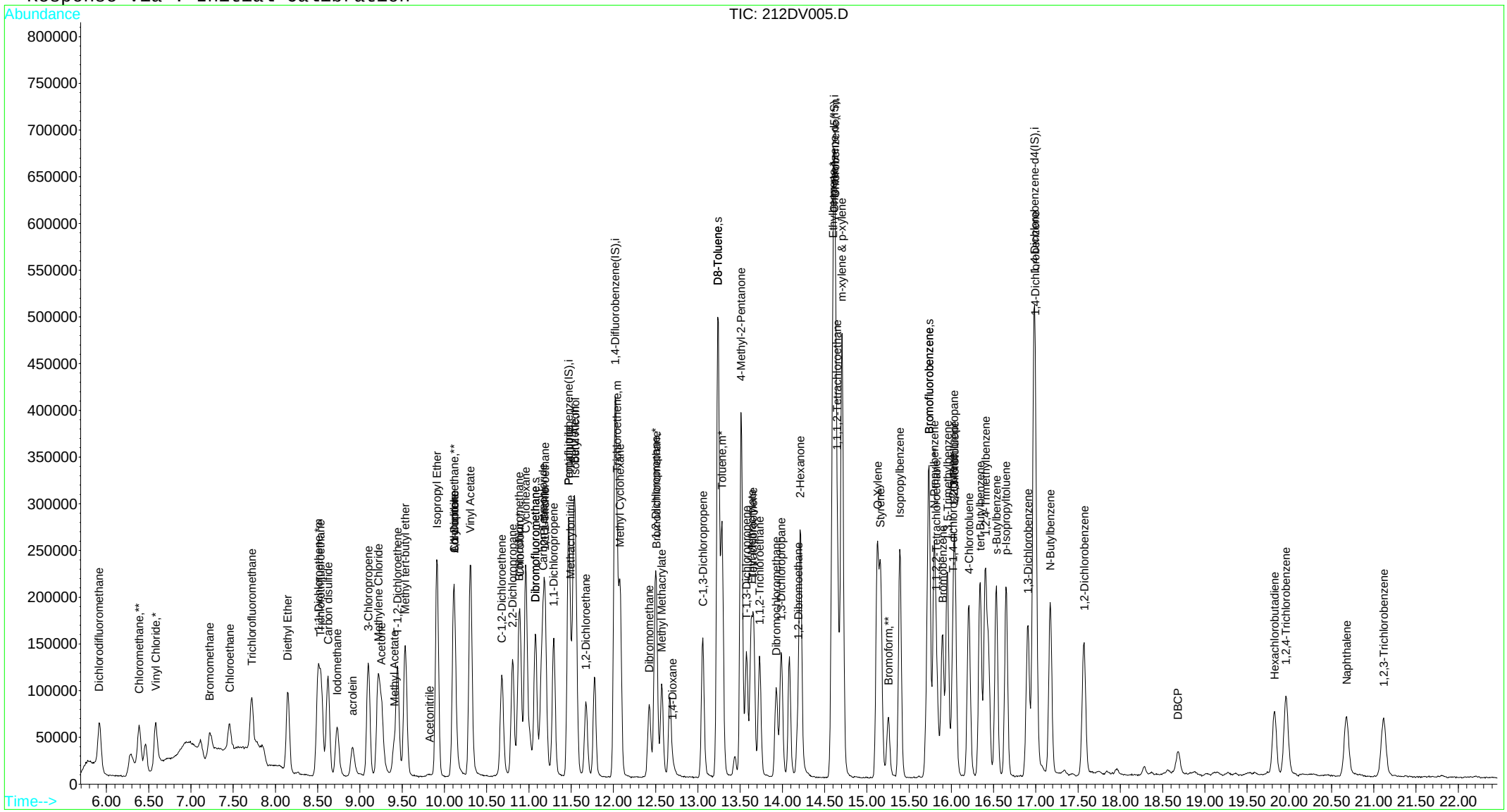
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV005.D Vial: 4
Acq On : 27 Apr 2021 9:17 am Operator: nmc
Sample : 1d27005-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 9:46 2021 Quant Results File: 030921.RES

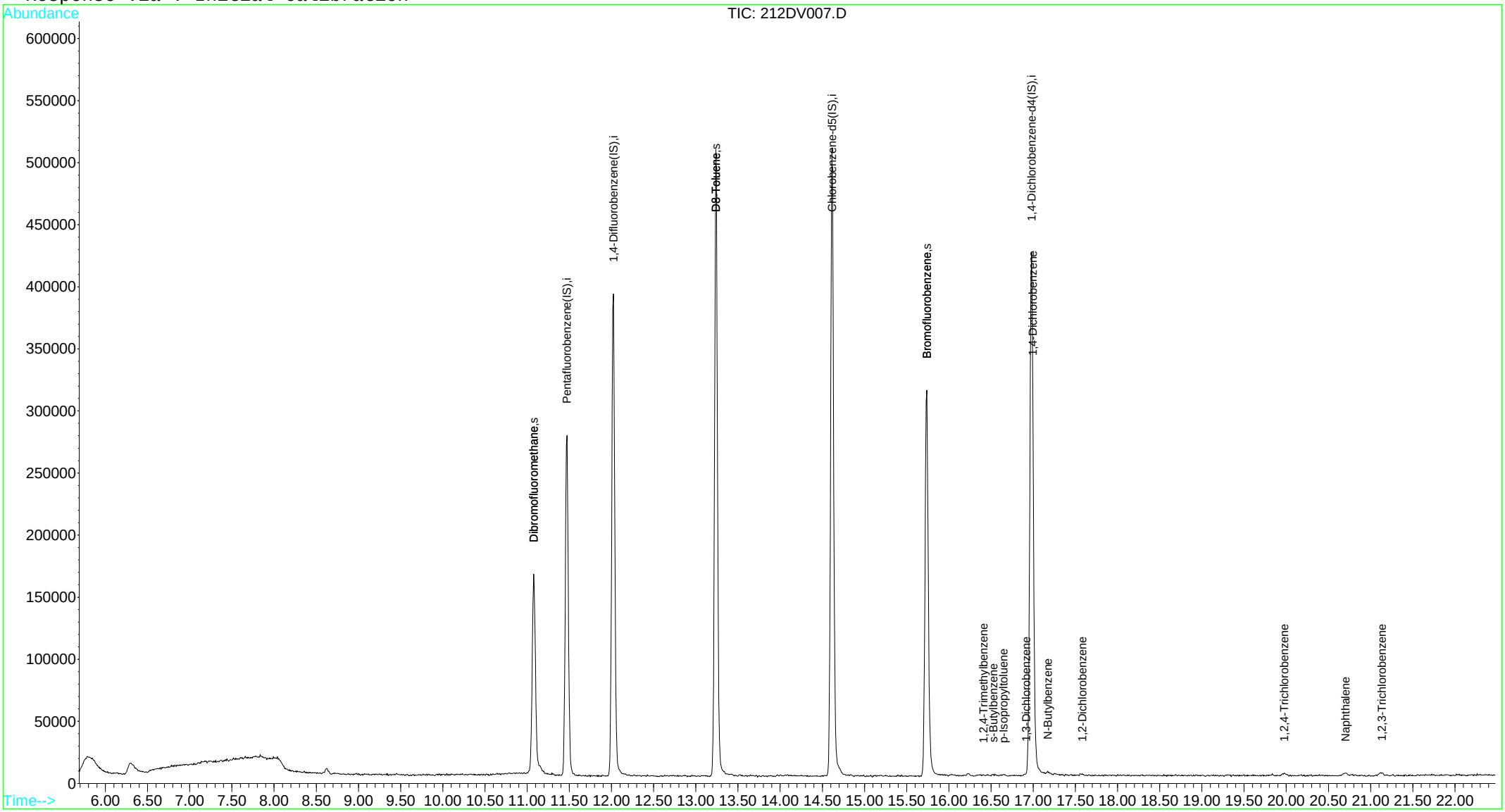
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV007.D Vial: 6
Acq On : 27 Apr 2021 10:14 am Operator: nmc
Sample : 1d27005-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

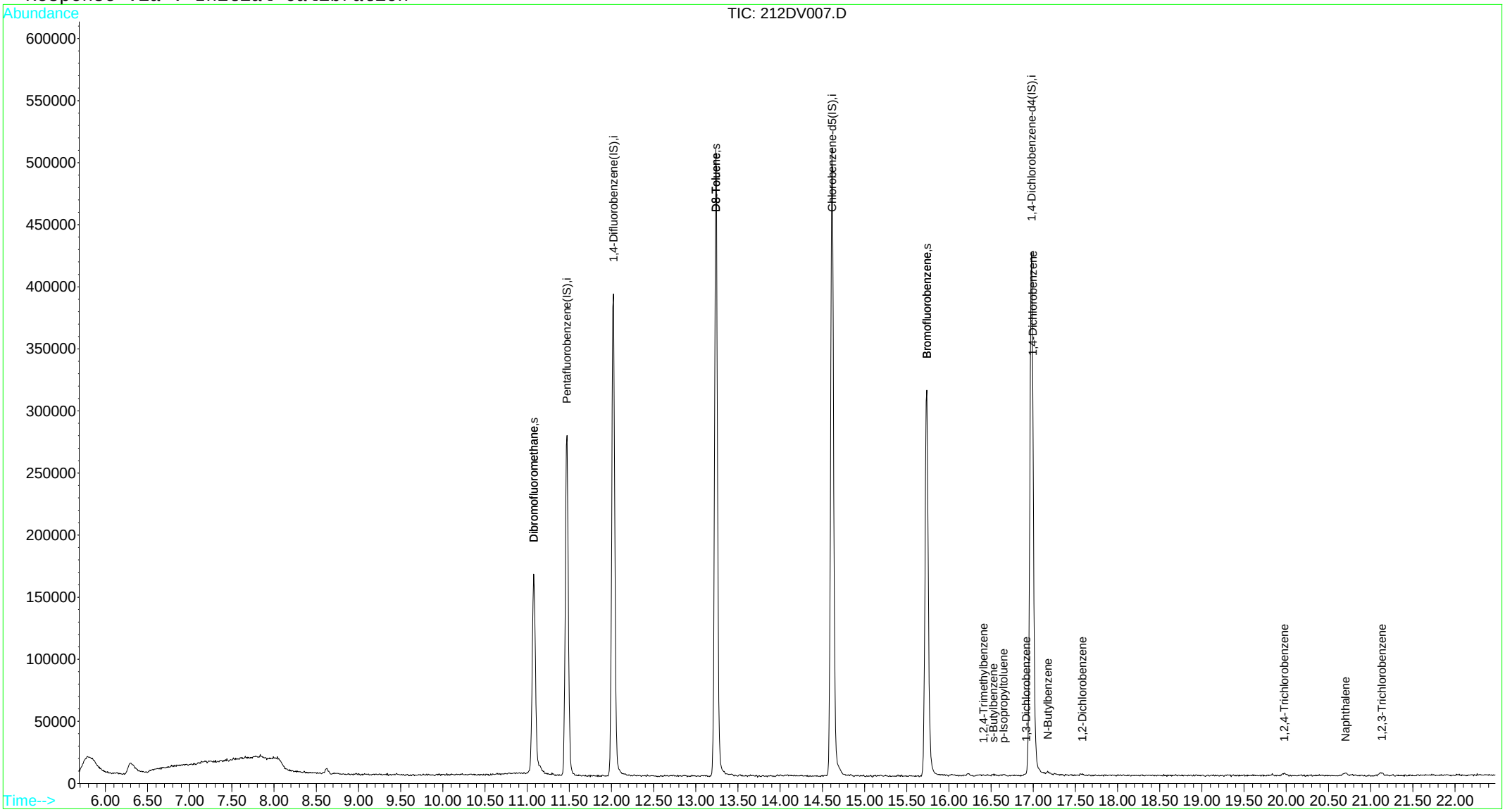
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV007.D Vial: 6
Acq On : 27 Apr 2021 10:14 am Operator: nmc
Sample : 1d27005-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV007.D Vial: 6
Acq On : 27 Apr 2021 10:14 am Operator: nmc
Sample : 1d27005-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	239079	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	407756	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	237047	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	202128	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	133170	49.84	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 99.68%			
54) D8-Toluene	13.24	98	426256	55.48	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.96%			
75) Bromofluorobenzene	15.74	95	170615	41.72	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.44%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.	d	
15) Carbon disulfide	0.00	76	0	N.D.	d	
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.	d	
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.	d	
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.	d	
28) Methacrylonitrile	0.00	67	0	N.D.	d	
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	133170	49.84	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D.	d	
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.	d	
43) Isobutyl Alcohol	0.00	43	0	N.D.	d	
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.	d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV007.D Vial: 6
Acq On : 27 Apr 2021 10:14 am Operator: nmc
Sample : 1d27005-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	426256	55.48 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170615	41.72 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D. d	
84) 1,2,4-Trimethylbenzene	16.41	105	605	0.06 ug/kg#	29
85) s-Butylbenzene	16.53	105	1053	0.09 ug/kg#	57
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.65	119	903	0.09 ug/kg#	52
88) 1,3-Dichlorobenzene	16.91	146	649	0.11 ug/kg#	24
89) 1,4-Dichlorobenzene	17.00	146	773	0.13 ug/kg#	1
90) 1,2-Dichlorobenzene	17.57	146	653	0.12 ug/kg#	24
91) N-Butylbenzene	17.18	91	1197	0.13 ug/kg#	30
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	4660	0.96 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	1250	0.45 ug/kg#	76
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.14	180	1797	0.82 ug/kg#	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV007.D Vial: 6
Acq On : 27 Apr 2021 10:14 am Operator: nmc
Sample : 1d27005-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	239079	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	407756	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	237047	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	202128	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	133170	49.84	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 99.68%			
54) D8-Toluene	13.24	98	426256	55.48	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 110.96%			
75) Bromofluorobenzene	15.74	95	170615	41.72	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.44%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.	d	
15) Carbon disulfide	0.00	76	0	N.D.	d	
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.	d	
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.	d	
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.	d	
28) Methacrylonitrile	0.00	67	0	N.D.	d	
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	133170	49.84	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D.	d	
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.	d	
43) Isobutyl Alcohol	0.00	43	0	N.D.	d	
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.	d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV007.D Vial: 6
Acq On : 27 Apr 2021 10:14 am Operator: nmc
Sample : 1d27005-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

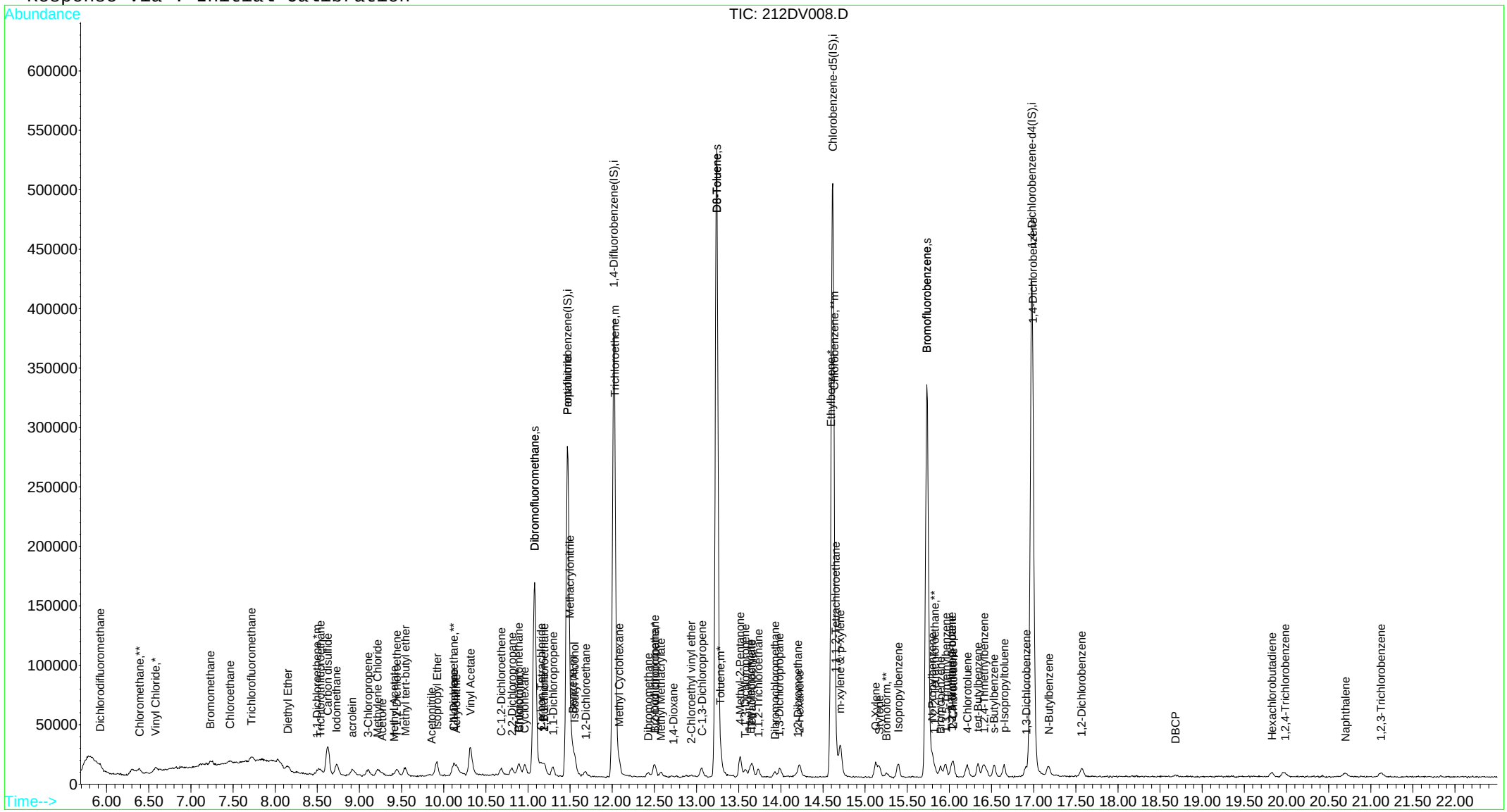
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	426256	55.48 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170615	41.72 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D. d	
84) 1,2,4-Trimethylbenzene	16.41	105	605	0.06 ug/kg#	29
85) s-Butylbenzene	16.53	105	1053	0.09 ug/kg#	57
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.65	119	903	0.09 ug/kg#	52
88) 1,3-Dichlorobenzene	16.91	146	649	0.11 ug/kg#	24
89) 1,4-Dichlorobenzene	17.00	146	773	0.13 ug/kg#	1
90) 1,2-Dichlorobenzene	17.57	146	653	0.12 ug/kg#	24
91) N-Butylbenzene	17.18	91	1197	0.13 ug/kg#	30
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	4660	0.96 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	1250	0.45 ug/kg#	76
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.14	180	1797	0.82 ug/kg#	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV008.D Vial: 7
Acq On : 27 Apr 2021 10:43 am Operator: nmc
Sample : aa66113-crl1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

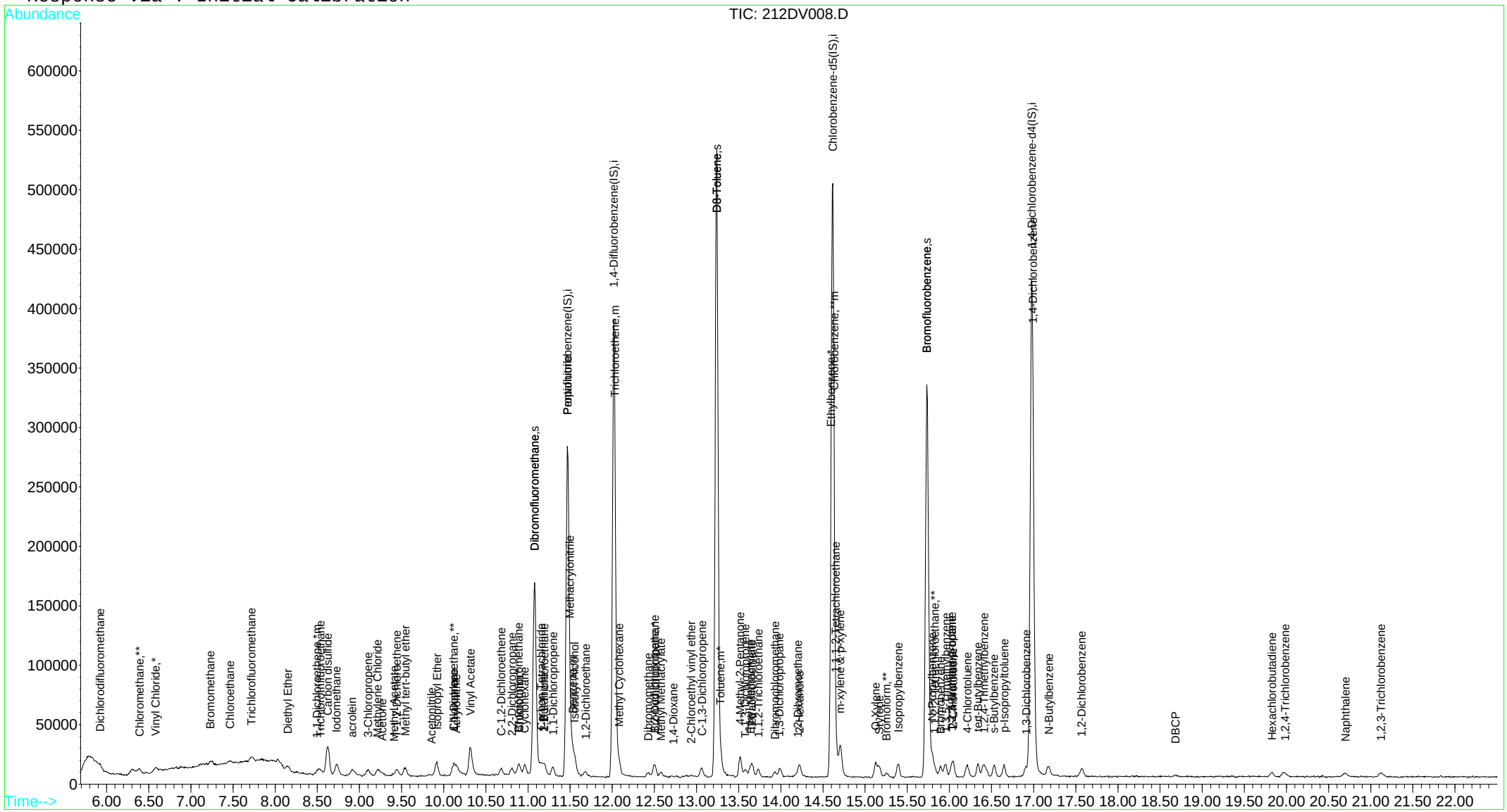
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV008.D Vial: 7
Acq On : 27 Apr 2021 10:43 am Operator: nmc
Sample : aa66113-crl1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV008.D Vial: 7
Acq On : 27 Apr 2021 10:43 am Operator: nmc
Sample : aa66113-crl1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	234742	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.02	114	401681	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	234662	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	201153	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	136213	51.92	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 103.84%			
54) D8-Toluene	13.24	98	444303	58.70	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.40%			
75) Bromofluorobenzene	15.73	95	178157	44.00	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	4758	0.94	ug/kg	86
3) Chloromethane	6.38	50	7022	1.33	ug/kg	98
4) Vinyl Chloride	6.58	62	5398	1.32	ug/kg#	13
5) Bromomethane	7.24	96	3128	1.32	ug/kg	97
6) Chloroethane	7.46	64	3028	1.40	ug/kg	78
7) Trichlorofluoromethane	7.72	101	4177	1.05	ug/kg	88
8) Trichlorotrifluoroethane	8.54	101	2558	1.02	ug/kg	97
9) acrolein	8.92	56	7673	11.11	ug/kg	94
10) Acetone	9.27	43	5390	5.99	ug/kg	97
11) 1,1-Dichloroethene	8.49	96	2197	0.95	ug/kg	91
12) 3-Chloropropene	9.10	76	2527	1.69	ug/kg	56
13) Acetonitrile	9.86	41	903	2.39	ug/kg	78
14) Iodomethane	8.73	142	16148	4.83	ug/kg	87
15) Carbon disulfide	8.63	76	55432	7.05	ug/kg	99
16) Methylene Chloride	9.21	84	3380	1.13	ug/kg	91
17) Methyl tert-butyl ether	9.55	73	7960	1.04	ug/kg	97
18) Acrylonitrile	10.15	53	17789	11.03	ug/kg	98
19) T-1,2-Dichloroethene	9.45	96	3198	1.29	ug/kg	87
20) Isopropyl Ether	9.91	45	14446	1.12	ug/kg	98
21) C-1,2-Dichloroethene	10.68	96	3259	1.21	ug/kg	98
22) 1,1-Dichloroethane	10.12	63	6436	1.22	ug/kg	68
23) Vinyl Acetate	10.32	43	43171	5.06	ug/kg	100
24) Chloroprene	10.11	88	2174	0.99	ug/kg	74
25) 2-Butanone	11.18	72	3330	11.66	ug/kg#	28
26) Propionitrile	11.47	54	3777	8.76	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	4502	1.12	ug/kg#	1
28) Methacrylonitrile	11.50	67	13207	11.15	ug/kg	90
29) Chloroform	10.90	83	5957	1.23	ug/kg	83
31) Dibromofluoromethane	11.08	113	136213	51.92	ug/kg	100
32) Bromochloromethane	10.88	128	1687	1.05	ug/kg	89
33) 1,1,1-Trichloroethane	11.20	97	3975	1.04	ug/kg	86
34) 1,1-Dichloropropene	11.30	75	4516	1.20	ug/kg	92
35) Diethyl Ether	8.14	59	2937	1.08	ug/kg#	82
36) Methyl Acetate	9.41	74	878	1.70	ug/kg#	37
37) Cyclohexane	10.96	56	4835	1.08	ug/kg	94
39) Methyl Cyclohexane	12.09	55	3318	1.00	ug/kg#	81
40) Carbon Tetrachloride	11.16	117	3423	0.92	ug/kg	92
41) 1,2-Dichloroethane	11.68	62	4475	1.16	ug/kg	87
42) Benzene	11.54	78	13956	1.62	ug/kg	83
43) Isobutyl Alcohol	11.56	43	6004	26.05	ug/kg#	77
44) Trichloroethene	12.04	130	3222	1.25	ug/kg#	1
45) 1,2-Dichloropropane	12.50	63	4038	1.37	ug/kg	91
46) Methyl Methacrylate	12.57	100	374	0.50	ug/kg#	1
47) 1,4-Dioxane	12.72	88	459	20.79	ug/kg	95
48) Bromodichloromethane	12.51	83	4495	1.31	ug/kg	85
49) Dibromomethane	12.43	93	2172	1.25	ug/kg	96
50) 4-Methyl-2-Pentanone	13.52	100	2706	7.62	ug/kg	61
51) 2-Chloroethyl vinyl ether	12.93	63	389	0.51	ug/kg#	17
52) 2-Hexanone	14.22	43	12930	6.01	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV008.D Vial: 7
Acq On : 27 Apr 2021 10:43 am Operator: nmc
Sample : aa66113-crl1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	6019	1.28	ug/kg	96
55) D8-Toluene	13.24	98	444303	58.70	ug/kg	93
57) Toluene	13.29	92	6772	1.04	ug/kg	97
58) Ethyl Methacrylate	13.64	69	3816	0.83	ug/kg#	85
59) T-1,3-Dichloropropene	13.58	75	5061	1.08	ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	2647	1.05	ug/kg	88
61) 1,3-Dichloropropane	13.99	76	6162	1.15	ug/kg	89
62) Tetrachloroethene	13.66	164	2894	1.47	ug/kg	86
63) Dibromochloromethane	13.93	129	3172	0.91	ug/kg#	88
64) 1,2-Dibromoethane	14.19	107	3067	0.99	ug/kg#	94
65) Chlorobenzene	14.64	112	7287	1.00	ug/kg#	56
66) 1,1,1,2-Tetrachloroethane	14.66	131	2691	0.93	ug/kg#	1
67) Ethylbenzene	14.59	106	3454	0.93	ug/kg	74
68) m-xylene & p-xylene	14.70	106	8864	1.95	ug/kg	91
69) O-Xylene	15.12	106	4292	0.96	ug/kg	89
70) Bromoform	15.25	173	1952	1.08	ug/kg#	93
71) Styrene	15.18	104	7462	0.97	ug/kg	97
72) Isopropylbenzene	15.39	105	10965	0.98	ug/kg	97
73) 1,2,3-Trichloropropane	16.02	75	4536	1.13	ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.83	83	3748	1.15	ug/kg	94
76) Bromofluorobenzene	15.73	95	178157	44.00	ug/kg#	85
77) T-1,4-dichloro-2-butene	16.02	53	1128	1.07	ug/kg#	90
78) N-Propylbenzene	15.80	91	12919	1.01	ug/kg	97
80) Bromobenzene	15.89	156	3302	1.02	ug/kg	88
81) 1,3,5-Trimethylbenzene	15.95	105	8498	0.85	ug/kg	99
82) 2-Chlorotoluene	16.04	91	8140	0.89	ug/kg	95
83) 4-Chlorotoluene	16.21	91	9098	0.96	ug/kg	92
84) 1,2,4-Trimethylbenzene	16.40	105	8556	0.85	ug/kg	98
85) s-Butylbenzene	16.54	105	10329	0.87	ug/kg	100
86) tert-Butylbenzene	16.34	119	7340	0.83	ug/kg	94
87) p-Isopropyltoluene	16.65	119	8527	0.81	ug/kg	95
88) 1,3-Dichlorobenzene	16.91	146	5771	1.03	ug/kg	92
89) 1,4-Dichlorobenzene	17.00	146	5861	1.00	ug/kg	72
90) 1,2-Dichlorobenzene	17.56	146	5323	0.99	ug/kg	94
91) N-Butylbenzene	17.17	91	7666	0.86	ug/kg	98
92) DBCP	18.68	75	652	0.99	ug/kg	77
93) Naphthalene	20.69	128	6386	1.32	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	2845	1.02	ug/kg#	50
95) Hexachlorobutadiene	19.83	225	1555	1.26	ug/kg	96
96) 1,2,3-Trichlorobenzene	21.13	180	2628	1.20	ug/kg#	17

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV008.D Vial: 7
Acq On : 27 Apr 2021 10:43 am Operator: nmc
Sample : aa66113-crl1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	234742	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.02	114	401681	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	234662	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	201153	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	136213	51.92	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 103.84%			
54) D8-Toluene	13.24	98	444303	58.70	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.40%			
75) Bromofluorobenzene	15.73	95	178157	44.00	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	4758	0.94	ug/kg	86
3) Chloromethane	6.38	50	7022	1.33	ug/kg	98
4) Vinyl Chloride	6.58	62	5398	1.32	ug/kg#	13
5) Bromomethane	7.24	96	3128	1.32	ug/kg	97
6) Chloroethane	7.46	64	3028	1.40	ug/kg	78
7) Trichlorofluoromethane	7.72	101	4177	1.05	ug/kg	88
8) Trichlorotrifluoroethane	8.54	101	2558	1.02	ug/kg	97
9) acrolein	8.92	56	7673	11.11	ug/kg	94
10) Acetone	9.27	43	5390	5.99	ug/kg	97
11) 1,1-Dichloroethene	8.49	96	2197	0.95	ug/kg	91
12) 3-Chloropropene	9.10	76	2527	1.69	ug/kg	56
13) Acetonitrile	9.86	41	903	2.39	ug/kg	78
14) Iodomethane	8.73	142	16148	4.83	ug/kg	87
15) Carbon disulfide	8.63	76	55432	7.05	ug/kg	99
16) Methylene Chloride	9.21	84	3380	1.13	ug/kg	91
17) Methyl tert-butyl ether	9.55	73	7960	1.04	ug/kg	97
18) Acrylonitrile	10.15	53	17789	11.03	ug/kg	98
19) T-1,2-Dichloroethene	9.45	96	3198	1.29	ug/kg	87
20) Isopropyl Ether	9.91	45	14446	1.12	ug/kg	98
21) C-1,2-Dichloroethene	10.68	96	3259	1.21	ug/kg	98
22) 1,1-Dichloroethane	10.12	63	6436	1.22	ug/kg	68
23) Vinyl Acetate	10.32	43	43171	5.06	ug/kg	100
24) Chloroprene	10.11	88	2174	0.99	ug/kg	74
25) 2-Butanone	11.18	72	3330	11.66	ug/kg#	28
26) Propionitrile	11.47	54	3777	8.76	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	4502	1.12	ug/kg#	1
28) Methacrylonitrile	11.50	67	13207	11.15	ug/kg	90
29) Chloroform	10.90	83	5957	1.23	ug/kg	83
31) Dibromofluoromethane	11.08	113	136213	51.92	ug/kg	100
32) Bromochloromethane	10.88	128	1687	1.05	ug/kg	89
33) 1,1,1-Trichloroethane	11.20	97	3975	1.04	ug/kg	86
34) 1,1-Dichloropropene	11.30	75	4516	1.20	ug/kg	92
35) Diethyl Ether	8.14	59	2937	1.08	ug/kg#	82
36) Methyl Acetate	9.41	74	878	1.70	ug/kg#	37
37) Cyclohexane	10.96	56	4835	1.08	ug/kg	94
39) Methyl Cyclohexane	12.09	55	3318	1.00	ug/kg#	81
40) Carbon Tetrachloride	11.16	117	3423	0.92	ug/kg	92
41) 1,2-Dichloroethane	11.68	62	4475	1.16	ug/kg	87
42) Benzene	11.54	78	13956	1.62	ug/kg	83
43) Isobutyl Alcohol	11.56	43	6004	26.05	ug/kg#	77
44) Trichloroethene	12.04	130	3222	1.25	ug/kg#	1
45) 1,2-Dichloropropane	12.50	63	4038	1.37	ug/kg	91
46) Methyl Methacrylate	12.57	100	374	0.50	ug/kg#	1
47) 1,4-Dioxane	12.72	88	459	20.79	ug/kg	95
48) Bromodichloromethane	12.51	83	4495	1.31	ug/kg	85
49) Dibromomethane	12.43	93	2172	1.25	ug/kg	96
50) 4-Methyl-2-Pentanone	13.52	100	2706	7.62	ug/kg	61
51) 2-Chloroethyl vinyl ether	12.93	63	389	0.51	ug/kg#	17
52) 2-Hexanone	14.22	43	12930	6.01	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV008.D Vial: 7
Acq On : 27 Apr 2021 10:43 am Operator: nmc
Sample : aa66113-crl1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Mon Apr 26 06:59:39 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	6019	1.28	ug/kg	96
55) D8-Toluene	13.24	98	444303	58.70	ug/kg	93
57) Toluene	13.29	92	6772	1.04	ug/kg	97
58) Ethyl Methacrylate	13.64	69	3816	0.83	ug/kg#	85
59) T-1,3-Dichloropropene	13.58	75	5061	1.08	ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	2647	1.05	ug/kg	88
61) 1,3-Dichloropropane	13.99	76	6162	1.15	ug/kg	89
62) Tetrachloroethene	13.66	164	2894	1.47	ug/kg	86
63) Dibromochloromethane	13.93	129	3172	0.91	ug/kg#	88
64) 1,2-Dibromoethane	14.19	107	3067	0.99	ug/kg#	94
65) Chlorobenzene	14.64	112	7287	1.00	ug/kg#	56
66) 1,1,1,2-Tetrachloroethane	14.66	131	2691	0.93	ug/kg#	1
67) Ethylbenzene	14.59	106	3454	0.93	ug/kg	74
68) m-xylene & p-xylene	14.70	106	8864	1.95	ug/kg	91
69) O-Xylene	15.12	106	4292	0.96	ug/kg	89
70) Bromoform	15.25	173	1952	1.08	ug/kg#	93
71) Styrene	15.18	104	7462	0.97	ug/kg	97
72) Isopropylbenzene	15.39	105	10965	0.98	ug/kg	97
73) 1,2,3-Trichloropropane	16.02	75	4536	1.13	ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.83	83	3748	1.15	ug/kg	94
76) Bromofluorobenzene	15.73	95	178157	44.00	ug/kg#	85
77) T-1,4-dichloro-2-butene	16.02	53	1128	1.07	ug/kg#	90
78) N-Propylbenzene	15.80	91	12919	1.01	ug/kg	97
80) Bromobenzene	15.89	156	3302	1.02	ug/kg	88
81) 1,3,5-Trimethylbenzene	15.95	105	8498	0.85	ug/kg	99
82) 2-Chlorotoluene	16.04	91	8140	0.89	ug/kg	95
83) 4-Chlorotoluene	16.21	91	9098	0.96	ug/kg	92
84) 1,2,4-Trimethylbenzene	16.40	105	8556	0.85	ug/kg	98
85) s-Butylbenzene	16.54	105	10329	0.87	ug/kg	100
86) tert-Butylbenzene	16.34	119	7340	0.83	ug/kg	94
87) p-Isopropyltoluene	16.65	119	8527	0.81	ug/kg	95
88) 1,3-Dichlorobenzene	16.91	146	5771	1.03	ug/kg	92
89) 1,4-Dichlorobenzene	17.00	146	5861	1.00	ug/kg	72
90) 1,2-Dichlorobenzene	17.56	146	5323	0.99	ug/kg	94
91) N-Butylbenzene	17.17	91	7666	0.86	ug/kg	98
92) DBCP	18.68	75	652	0.99	ug/kg	77
93) Naphthalene	20.69	128	6386	1.32	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	2845	1.02	ug/kg#	50
95) Hexachlorobutadiene	19.83	225	1555	1.26	ug/kg	96
96) 1,2,3-Trichlorobenzene	21.13	180	2628	1.20	ug/kg#	17

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV009.D Vial: 8
Acq On : 27 Apr 2021 11:11 am Operator: nmc
Sample : ae03398-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	234539	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	399022	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	232915	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	199036	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	132555	50.57	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.14%			
54) D8-Toluene	13.24	98	428880	57.04	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.08%			
75) Bromofluorobenzene	15.73	95	170016	42.31	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	9.26	43	49106	54.58	ug/kg	97
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	8.63	76	10916	1.39	ug/kg	99
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	10.90	83	2440	0.50	ug/kg#	72
31) Dibromofluoromethane	11.08	113	132555	50.57	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	12.51	83	3355	0.98	ug/kg#	89
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV009.D Vial: 8
Acq On : 27 Apr 2021 11:11 am Operator: nmc
Sample : ae03398-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	428880	57.04 ug/kg	94
57) Toluene	13.28	92	3011	0.47 ug/kg	97
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	13.93	129	4660	1.35 ug/kg#	88
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D. d	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	15.26	173	1323	0.74 ug/kg#	96
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	15.39	105	1064	0.10 ug/kg#	49
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.73	95	170016	42.31 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	15.96	105	1117	0.11 ug/kg#	26
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D. d	
84) 1,2,4-Trimethylbenzene	16.41	105	1280	0.13 ug/kg#	29
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.65	119	1299	0.12 ug/kg#	52
88) 1,3-Dichlorobenzene	0.00	146	0	N.D. d	
89) 1,4-Dichlorobenzene	17.00	146	2470	0.43 ug/kg#	23
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	17.17	91	971	0.11 ug/kg#	30
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	2557	0.54 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.13	180	683	0.31 ug/kg#	72

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV009.D Vial: 8
Acq On : 27 Apr 2021 11:11 am Operator: nmc
Sample : ae03398-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	234539	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	399022	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	232915	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	199036	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	132555	50.57	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.14%			
54) D8-Toluene	13.24	98	428880	57.04	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.08%			
75) Bromofluorobenzene	15.73	95	170016	42.31	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	9.26	43	49106	54.58	ug/kg	97
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	8.63	76	10916	1.39	ug/kg	99
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	10.90	83	2440	0.50	ug/kg#	72
31) Dibromofluoromethane	11.08	113	132555	50.57	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	12.51	83	3355	0.98	ug/kg#	89
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV009.D Vial: 8
Acq On : 27 Apr 2021 11:11 am Operator: nmc
Sample : ae03398-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:46 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

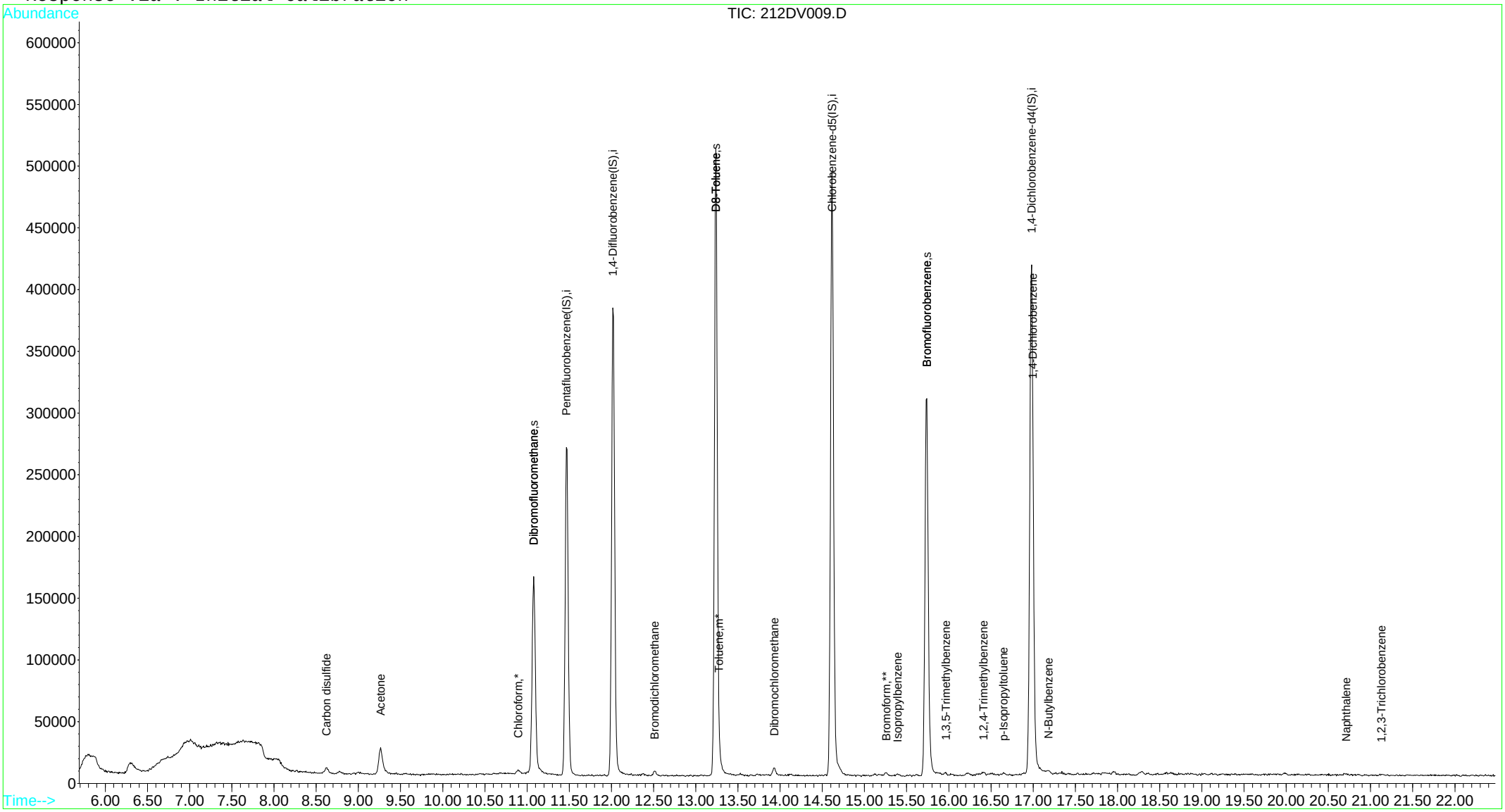
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	428880	57.04 ug/kg	94
57) Toluene	13.28	92	3011	0.47 ug/kg	97
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	13.93	129	4660	1.35 ug/kg#	88
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D. d	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	15.26	173	1323	0.74 ug/kg#	96
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	15.39	105	1064	0.10 ug/kg#	49
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.73	95	170016	42.31 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	15.96	105	1117	0.11 ug/kg#	26
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D. d	
84) 1,2,4-Trimethylbenzene	16.41	105	1280	0.13 ug/kg#	29
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.65	119	1299	0.12 ug/kg#	52
88) 1,3-Dichlorobenzene	0.00	146	0	N.D. d	
89) 1,4-Dichlorobenzene	17.00	146	2470	0.43 ug/kg#	23
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	17.17	91	971	0.11 ug/kg#	30
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	2557	0.54 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.13	180	683	0.31 ug/kg#	72

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV009.D Vial: 8
Acq On : 27 Apr 2021 11:11 am Operator: nmc
Sample : ae03398-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:46 2021 Quant Results File: 030921.RES

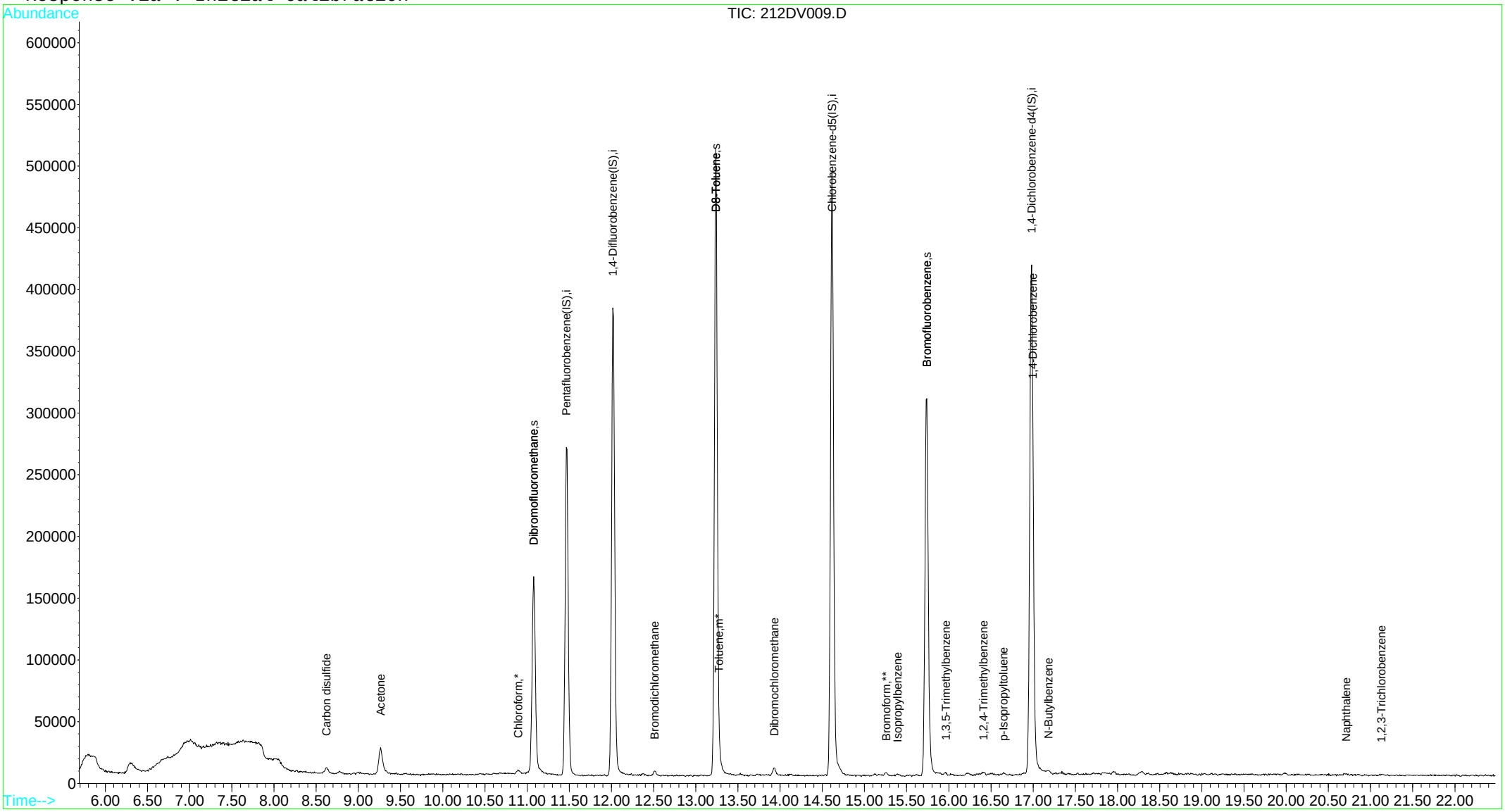
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV009.D Vial: 8
Acq On : 27 Apr 2021 11:11 am Operator: nmc
Sample : ae03398-01 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 11:46 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV012.D Vial: 11
Acq On : 27 Apr 2021 12:37 pm Operator: nmc
Sample : ae02766-02re1@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 13:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	232570	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	397565	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	237741	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	202175	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130732	50.30	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 100.60%			
54) D8-Toluene	13.24	98	423563	56.54	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.08%			
75) Bromofluorobenzene	15.74	95	169455	41.31	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.58	62	80575	19.87	ug/kg	92
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.68	96	180300	67.65	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130732	50.30	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	2735	1.07	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV012.D Vial: 11
Acq On : 27 Apr 2021 12:37 pm Operator: nmc
Sample : ae02766-02re1@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 13:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	423563	56.54 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169455	41.31 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D. d	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV012.D Vial: 11
Acq On : 27 Apr 2021 12:37 pm Operator: nmc
Sample : ae02766-02re1@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 13:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	232570	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	397565	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	237741	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	202175	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130732	50.30	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 100.60%			
54) D8-Toluene	13.24	98	423563	56.54	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.08%			
75) Bromofluorobenzene	15.74	95	169455	41.31	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.58	62	80575	19.87	ug/kg	92
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.68	96	180300	67.65	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130732	50.30	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	2735	1.07	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV012.D Vial: 11
Acq On : 27 Apr 2021 12:37 pm Operator: nmc
Sample : ae02766-02re1@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 13:05 2021 Quant Results File: 030921.RES

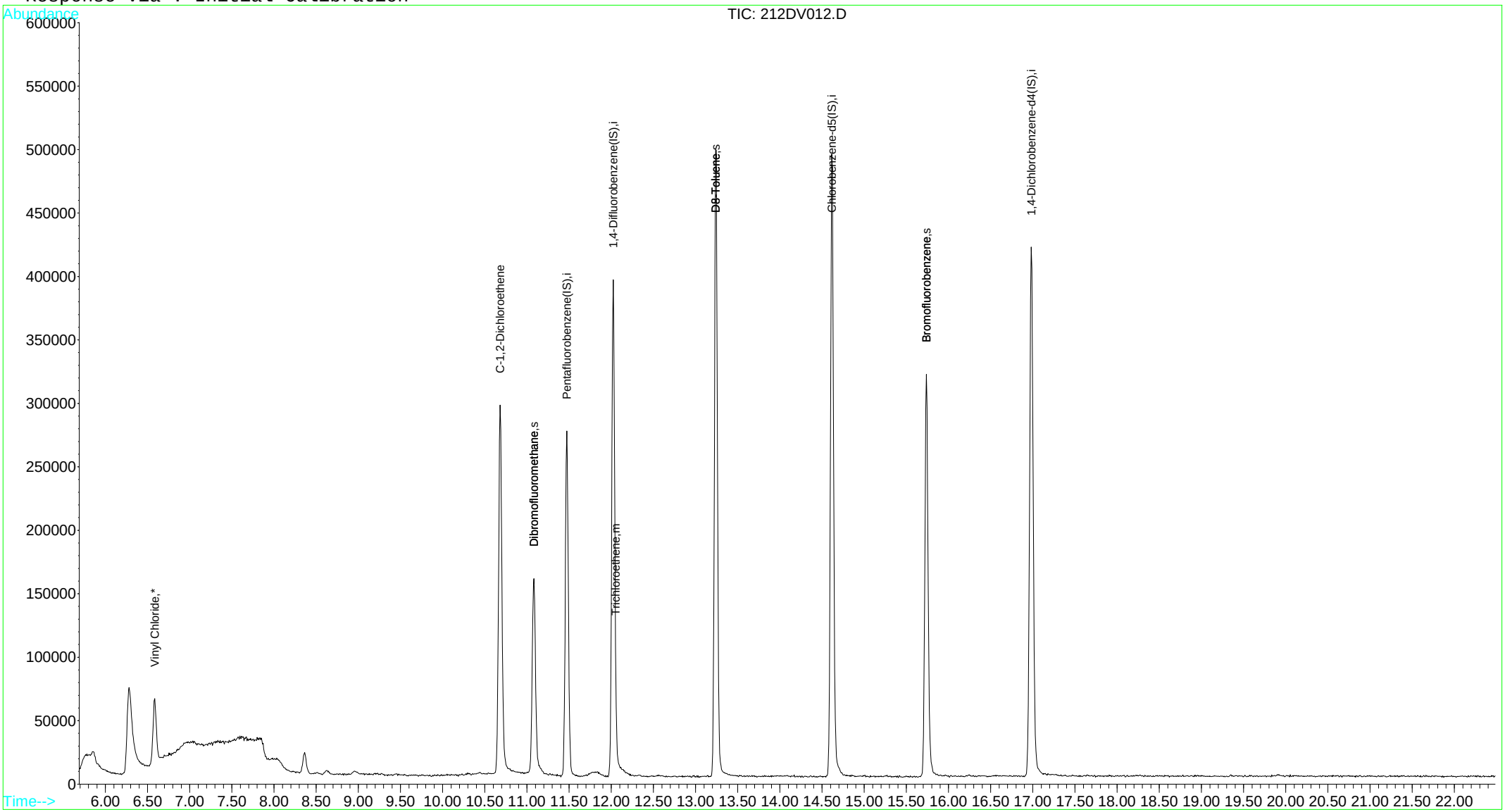
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	423563	56.54 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169455	41.31 ug/kg#	86
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D. d	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D. d	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV012.D Vial: 11
Acq On : 27 Apr 2021 12:37 pm Operator: nmc
Sample : ae02766-02re1@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 13:05 2021 Quant Results File: 030921.RES

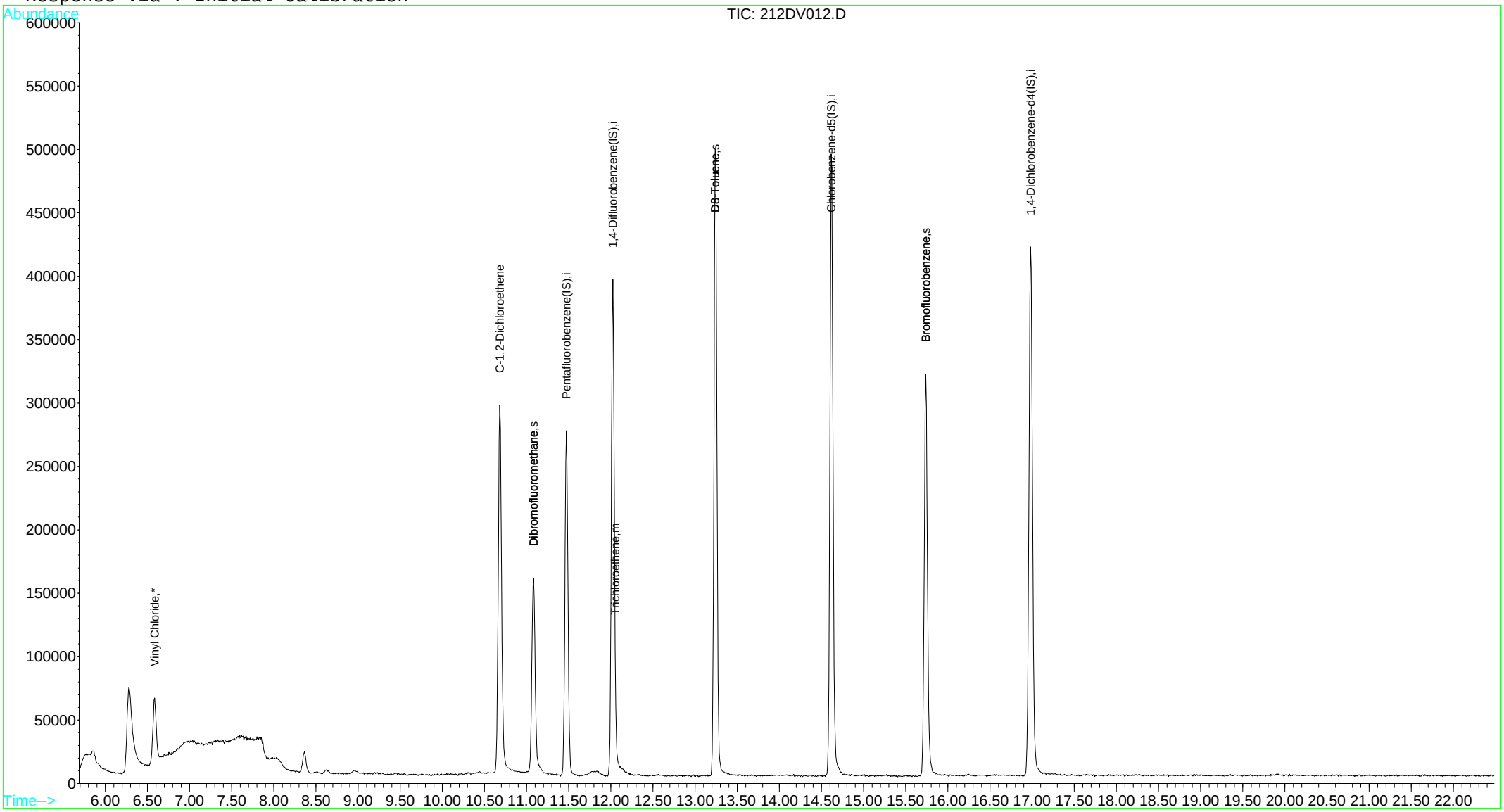
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV012.D Vial: 11
Acq On : 27 Apr 2021 12:37 pm Operator: nmc
Sample : ae02766-02re1@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 27 13:05 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV013.D Vial: 12
Acq On : 27 Apr 2021 1:06 pm Operator: nmc
Sample : ae02766-04@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:02 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	229178	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	393544	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	237209	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	203551	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130487	50.95	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.90%			
54) D8-Toluene	13.24	98	422363	56.95	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.90%			
75) Bromofluorobenzene	15.74	95	169153	41.33	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.66%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	163014	66.43	ug/kg	87
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	5894	2.24	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130487	50.95	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D. d		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	2920	1.16	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV013.D Vial: 12
Acq On : 27 Apr 2021 1:06 pm Operator: nmc
Sample : ae02766-04@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:02 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	422363	56.95 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169153	41.33 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV013.D Vial: 12
Acq On : 27 Apr 2021 1:06 pm Operator: nmc
Sample : ae02766-04@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:02 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	229178	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	393544	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	237209	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	203551	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130487	50.95	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.90%			
54) D8-Toluene	13.24	98	422363	56.95	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.90%			
75) Bromofluorobenzene	15.74	95	169153	41.33	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.66%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	163014	66.43	ug/kg	87
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	5894	2.24	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130487	50.95	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D. d		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	2920	1.16	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV013.D Vial: 12
Acq On : 27 Apr 2021 1:06 pm Operator: nmc
Sample : ae02766-04@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:02 2021 Quant Results File: 030921.RES

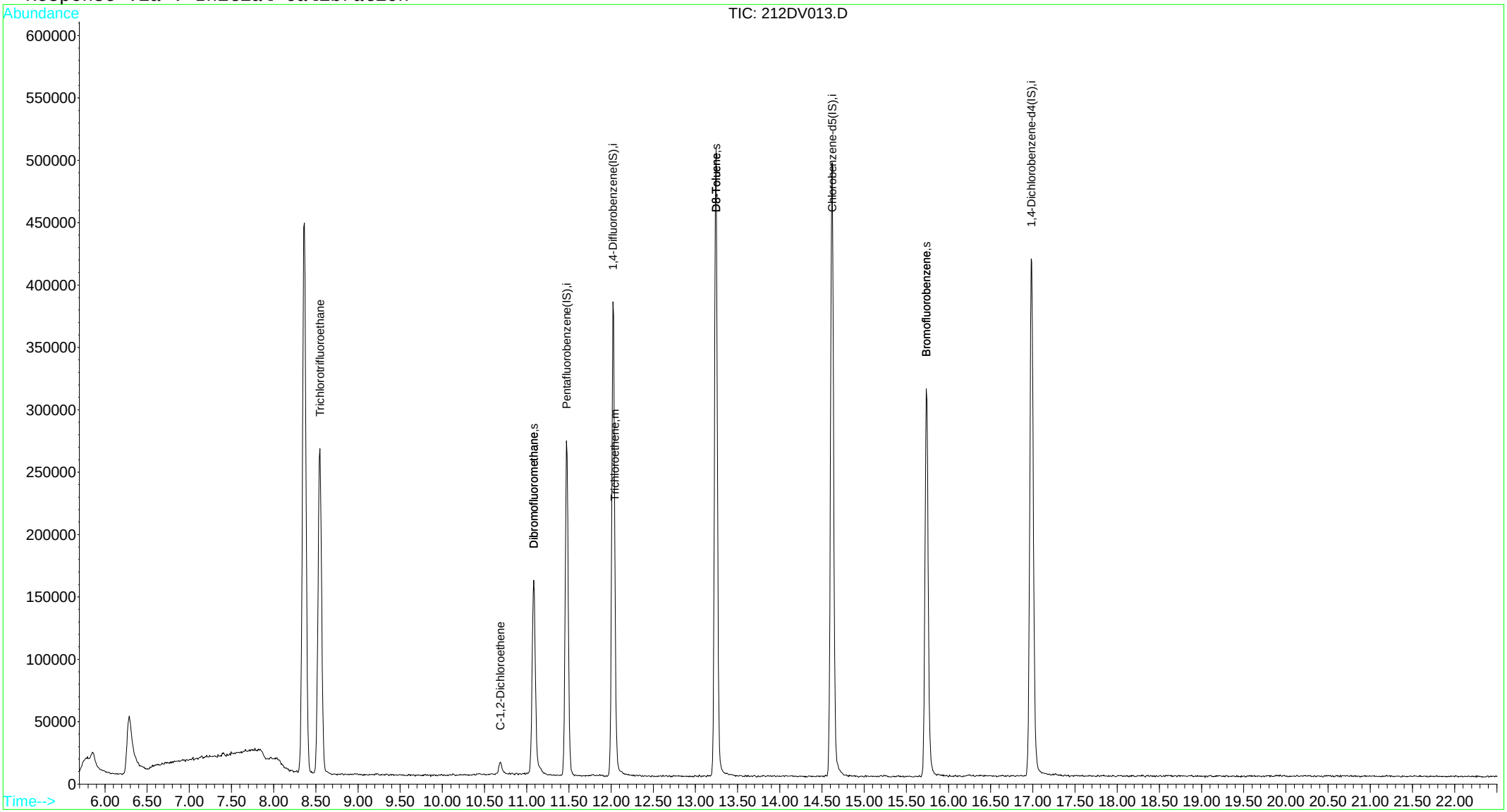
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	422363	56.95 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169153	41.33 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV013.D Vial: 12
Acq On : 27 Apr 2021 1:06 pm Operator: nmc
Sample : ae02766-04@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:02 2021 Quant Results File: 030921.RES

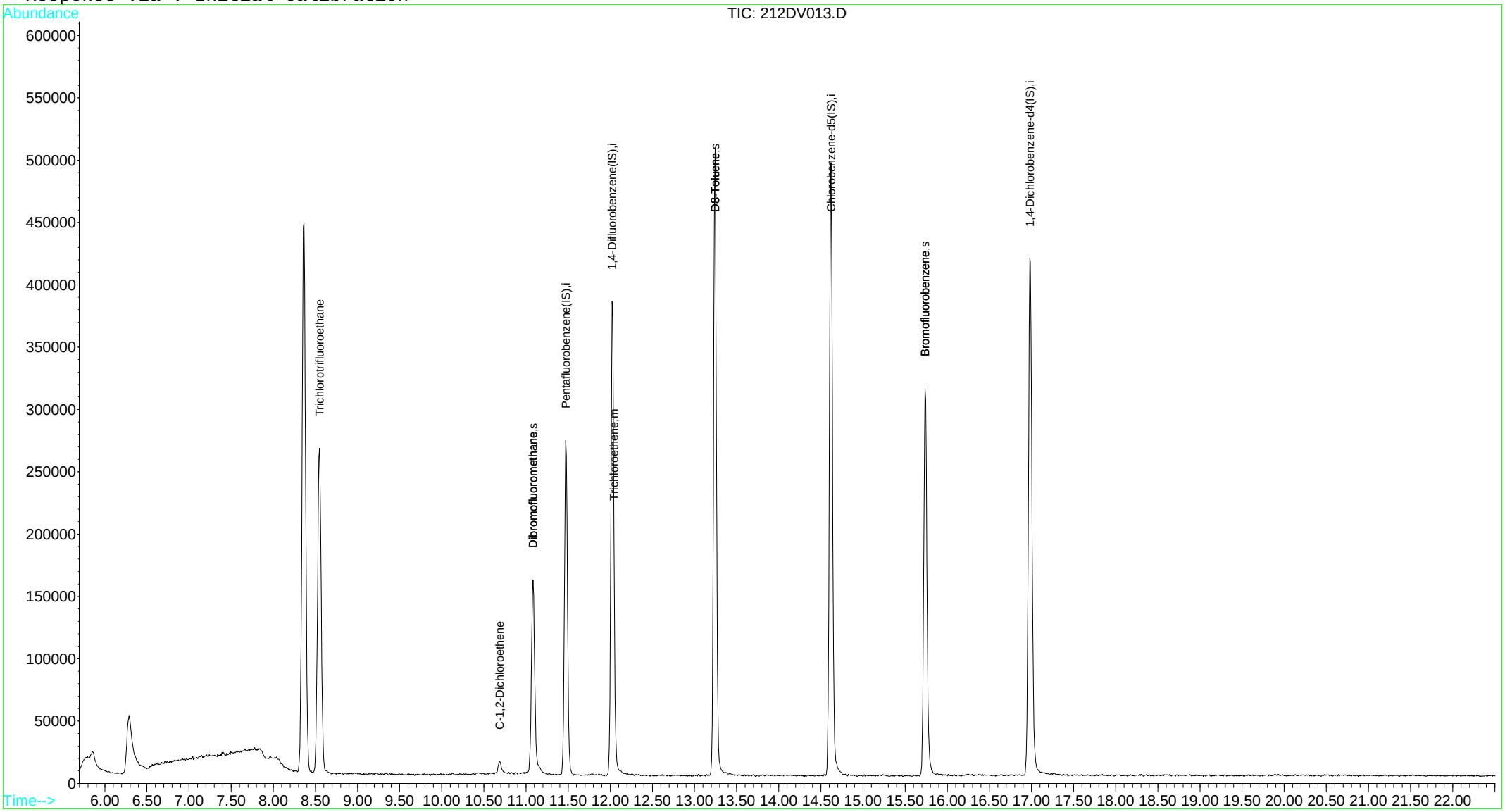
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV013.D Vial: 12
Acq On : 27 Apr 2021 1:06 pm Operator: nmc
Sample : ae02766-04@400 Inst : OVGCMS2
Misc : 400 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:02 2021 Quant Results File: 030921.RES

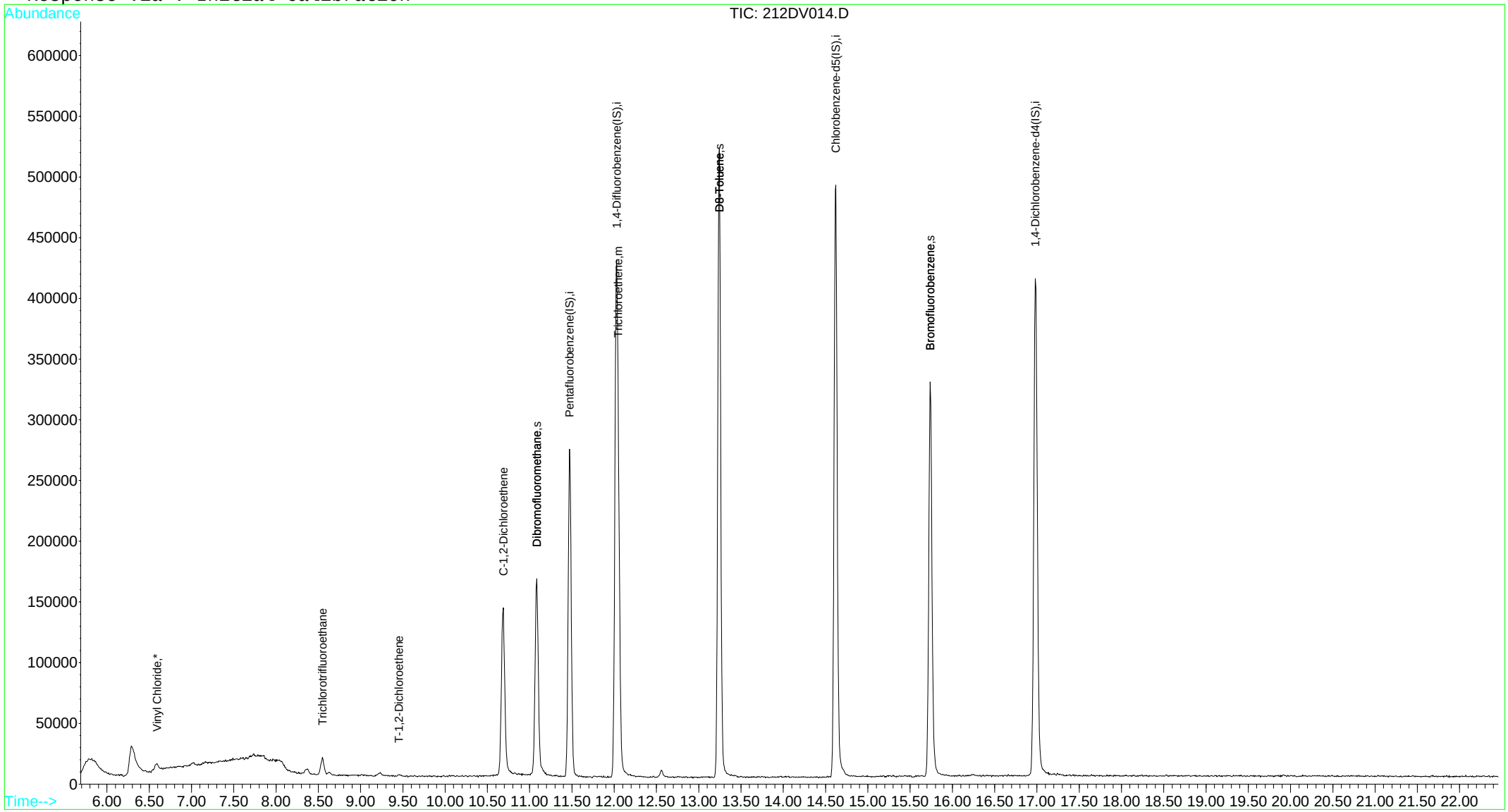
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV014.D Vial: 13
Acq On : 27 Apr 2021 1:34 pm Operator: nmc
Sample : ae02766-05@2 Inst : OVGCMS2
Misc : 2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

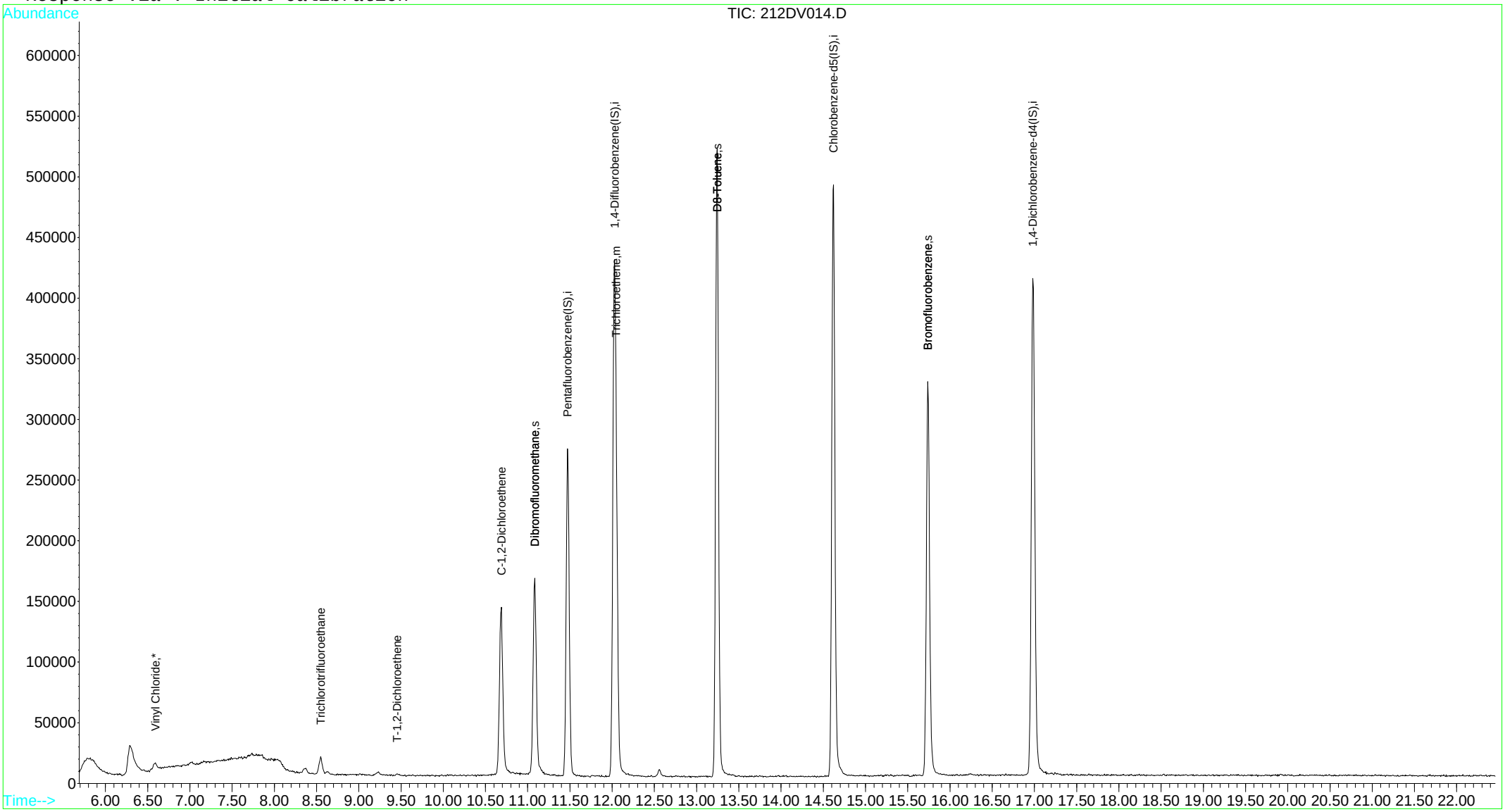
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV014.D Vial: 13
Acq On : 27 Apr 2021 1:34 pm Operator: nmc
Sample : ae02766-05@2 Inst : OVGCMS2
Misc : 2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV014.D Vial: 13
Acq On : 27 Apr 2021 1:34 pm Operator: nmc
Sample : ae02766-05@2 Inst : OVGCMS2
Misc : 2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	230217	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	394304	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234146	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	200482	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	135434	52.64	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.28%			
54) D8-Toluene	13.24	98	440064	59.23	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 118.46%			
75) Bromofluorobenzene	15.74	95	178110	44.09	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.18%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.58	62	7785	1.94	ug/kg	80
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	8210	3.33	ug/kg	87
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	673	0.28	ug/kg#	75
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	85840	32.54	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	135434	52.64	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	77553	30.64	ug/kg	96
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV014.D Vial: 13
Acq On : 27 Apr 2021 1:34 pm Operator: nmc
Sample : ae02766-05@2 Inst : OVGCMS2
Misc : 2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	440064	59.23 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	178110	44.09 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV014.D Vial: 13
Acq On : 27 Apr 2021 1:34 pm Operator: nmc
Sample : ae02766-05@2 Inst : OVGCMS2
Misc : 2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	230217	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	394304	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234146	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	200482	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	135434	52.64	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 105.28%			
54) D8-Toluene	13.24	98	440064	59.23	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 118.46%			
75) Bromofluorobenzene	15.74	95	178110	44.09	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.18%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.58	62	7785	1.94	ug/kg	80
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	8210	3.33	ug/kg	87
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	673	0.28	ug/kg#	75
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	85840	32.54	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	135434	52.64	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	77553	30.64	ug/kg	96
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV014.D Vial: 13
Acq On : 27 Apr 2021 1:34 pm Operator: nmc
Sample : ae02766-05@2 Inst : OVGCMS2
Misc : 2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

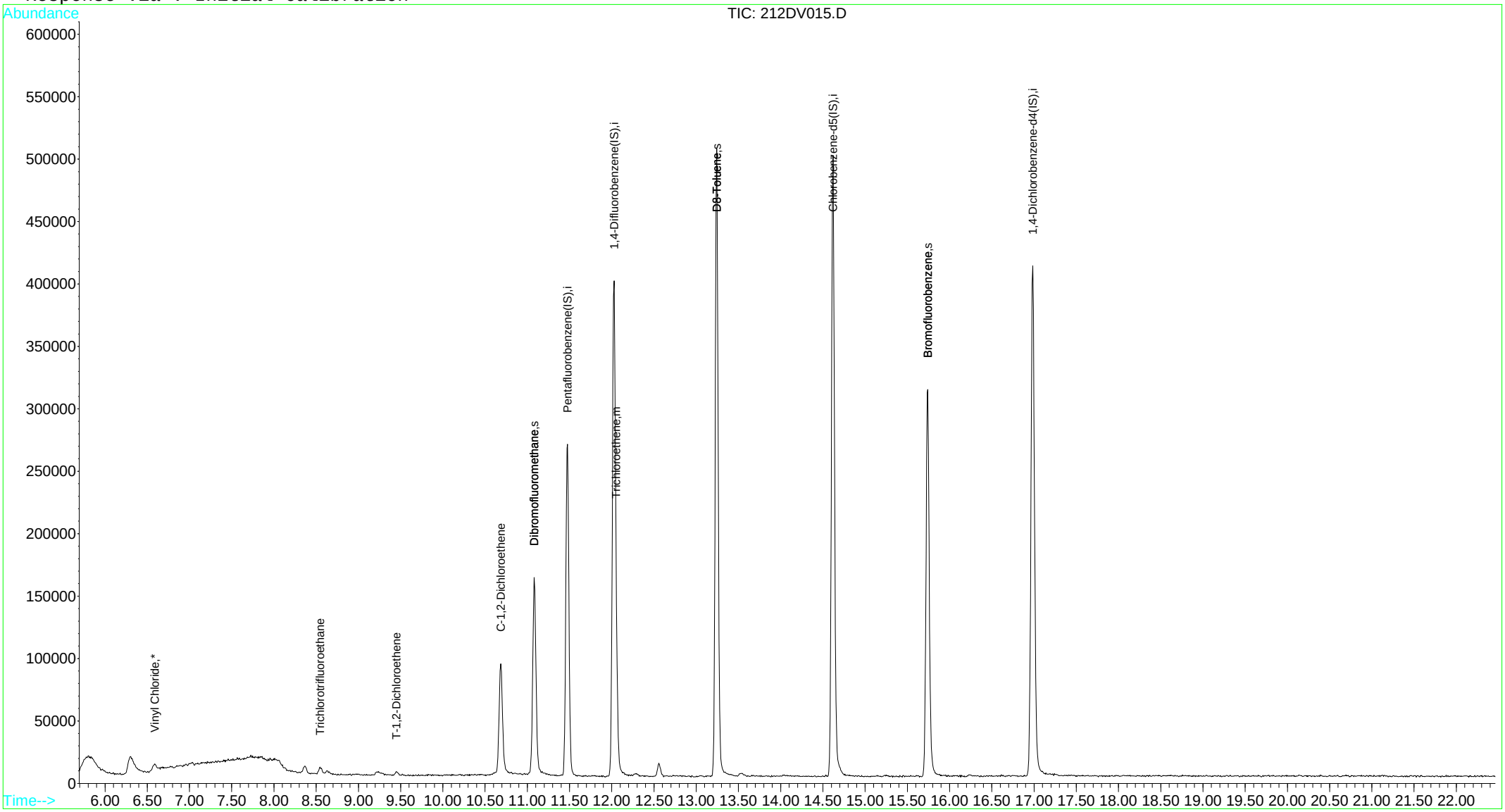
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	440064	59.23 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	178110	44.09 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV015.D Vial: 14
Acq On : 27 Apr 2021 2:03 pm Operator: nmc
Sample : ae02766-07 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

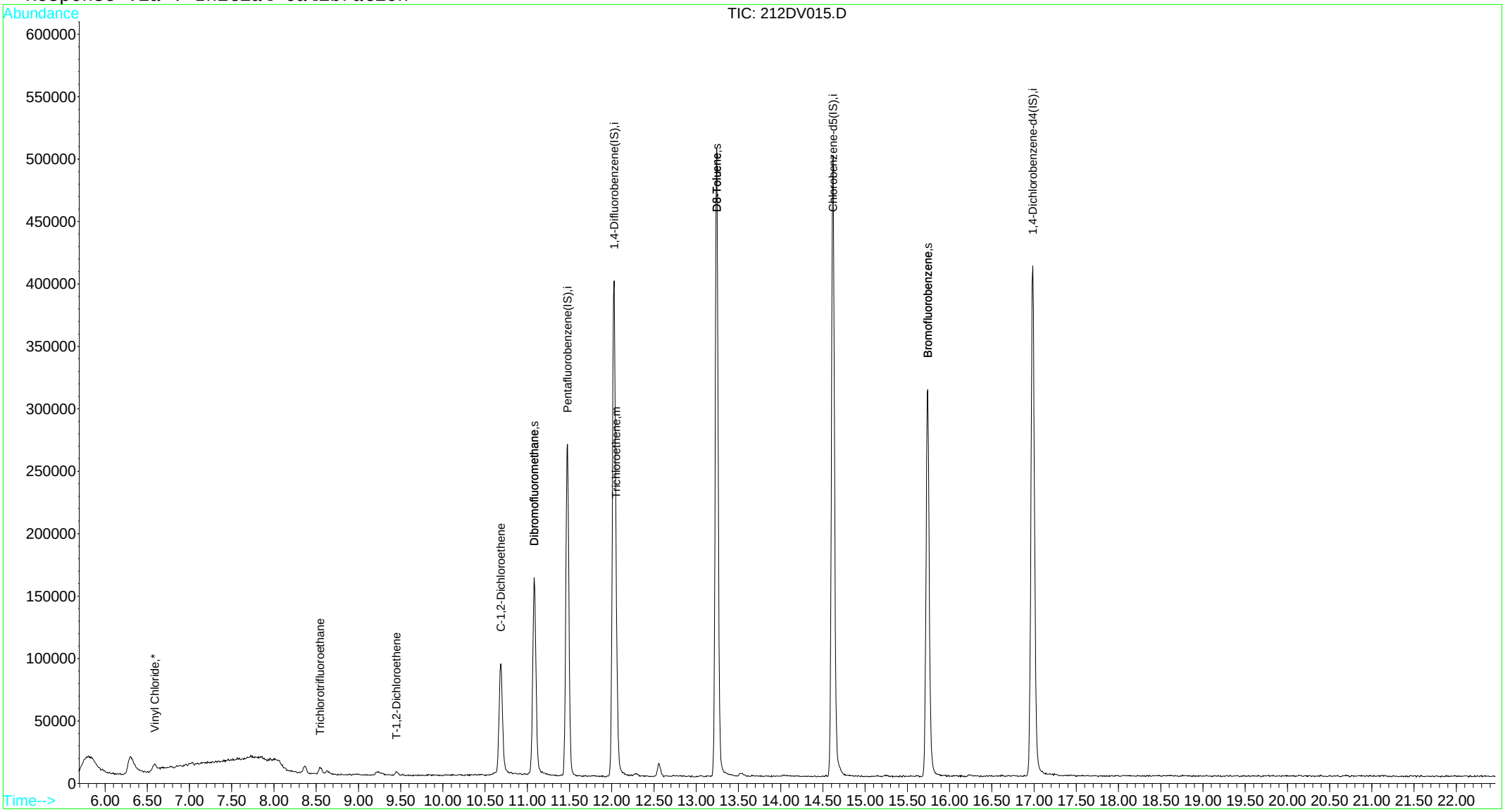
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV015.D Vial: 14
Acq On : 27 Apr 2021 2:03 pm Operator: nmc
Sample : ae02766-07 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV015.D Vial: 14
Acq On : 27 Apr 2021 2:03 pm Operator: nmc
Sample : ae02766-07 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	230748	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	395970	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235153	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	199680	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	131670	51.06	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.12%			
54) D8-Toluene	13.24	98	425298	57.00	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.00%			
75) Bromofluorobenzene	15.74	95	170498	42.02	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.59	62	6491	1.61	ug/kg	61
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	3255	1.32	ug/kg	89
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	1465	0.60	ug/kg	95
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	55607	21.03	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	131670	51.06	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	33198	13.06	ug/kg	88
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042721\212DV015.D Vial: 14
Acq On : 27 Apr 2021 2:03 pm Operator: nmc
Sample : ae02766-07 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	425298	57.00 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170498	42.02 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV015.D Vial: 14
Acq On : 27 Apr 2021 2:03 pm Operator: nmc
Sample : ae02766-07 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	230748	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	395970	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235153	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	199680	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	131670	51.06	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.12%			
54) D8-Toluene	13.24	98	425298	57.00	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.00%			
75) Bromofluorobenzene	15.74	95	170498	42.02	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.59	62	6491	1.61	ug/kg	61
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	3255	1.32	ug/kg	89
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	1465	0.60	ug/kg	95
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	55607	21.03	ug/kg	98
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	131670	51.06	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	33198	13.06	ug/kg	88
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV015.D Vial: 14
Acq On : 27 Apr 2021 2:03 pm Operator: nmc
Sample : ae02766-07 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	425298	57.00 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170498	42.02 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV016.D Vial: 15
Acq On : 27 Apr 2021 2:32 pm Operator: nmc
Sample : ae02766-10re1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	232419	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	396615	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	236906	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	199880	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130520	50.25	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 100.50%			
54) D8-Toluene	13.24	98	426607	57.08	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.16%			
75) Bromofluorobenzene	15.74	95	170683	41.76	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.52%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.58	62	37090	9.15	ug/kg	94
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	922	0.37	ug/kg#	69
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.68	96	196129	73.63	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130520	50.25	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	33142	13.02	ug/kg	89
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV016.D Vial: 15
Acq On : 27 Apr 2021 2:32 pm Operator: nmc
Sample : ae02766-10re1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	426607	57.08 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170683	41.76 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV016.D Vial: 15
Acq On : 27 Apr 2021 2:32 pm Operator: nmc
Sample : ae02766-10re1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	232419	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	396615	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	236906	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	199880	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130520	50.25	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 100.50%			
54) D8-Toluene	13.24	98	426607	57.08	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.16%			
75) Bromofluorobenzene	15.74	95	170683	41.76	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.52%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.58	62	37090	9.15	ug/kg	94
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	922	0.37	ug/kg#	69
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.68	96	196129	73.63	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130520	50.25	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	33142	13.02	ug/kg	89
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV016.D Vial: 15
Acq On : 27 Apr 2021 2:32 pm Operator: nmc
Sample : ae02766-10re1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

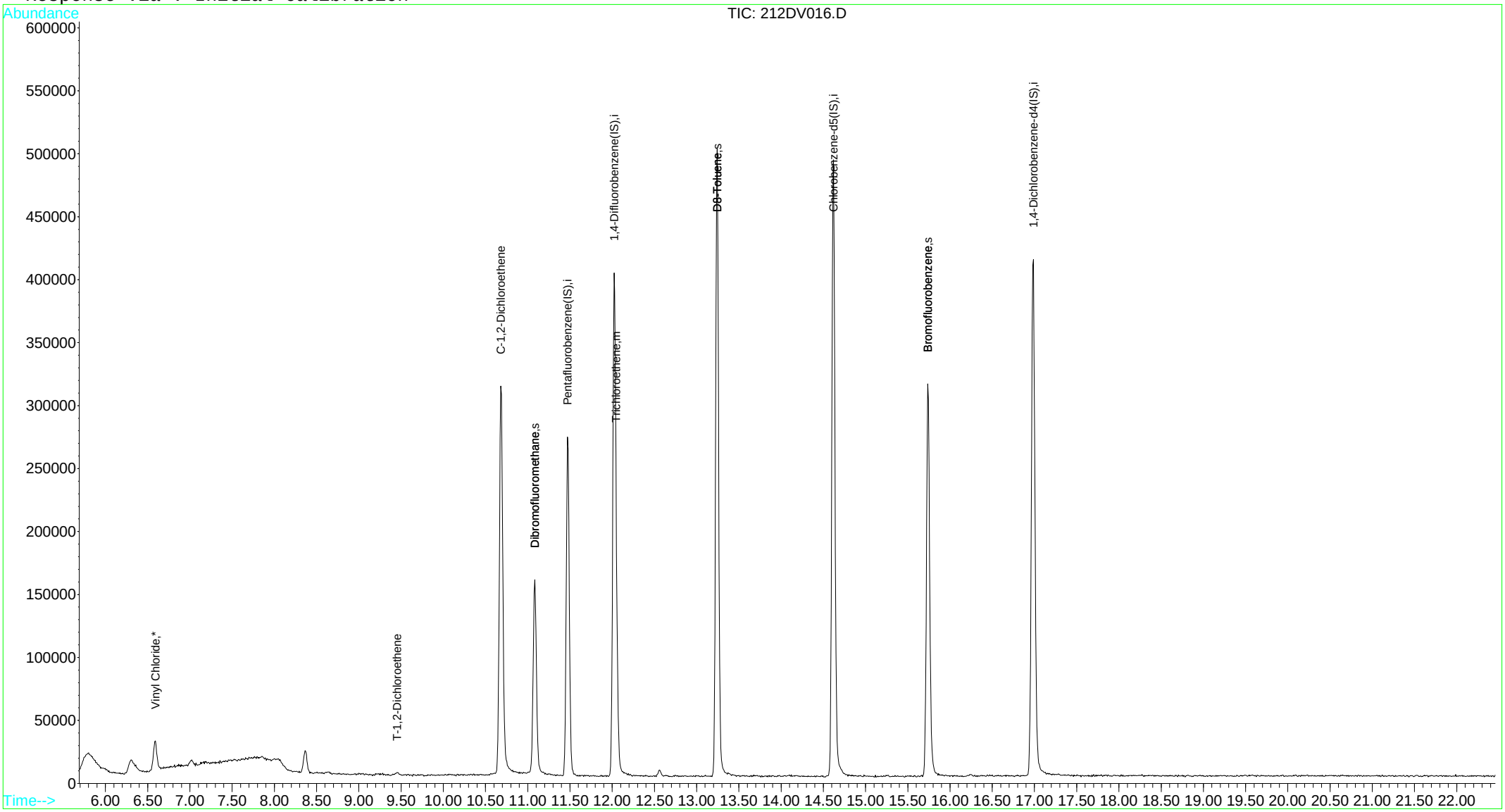
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	426607	57.08 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170683	41.76 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV016.D Vial: 15
Acq On : 27 Apr 2021 2:32 pm Operator: nmc
Sample : ae02766-10re1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

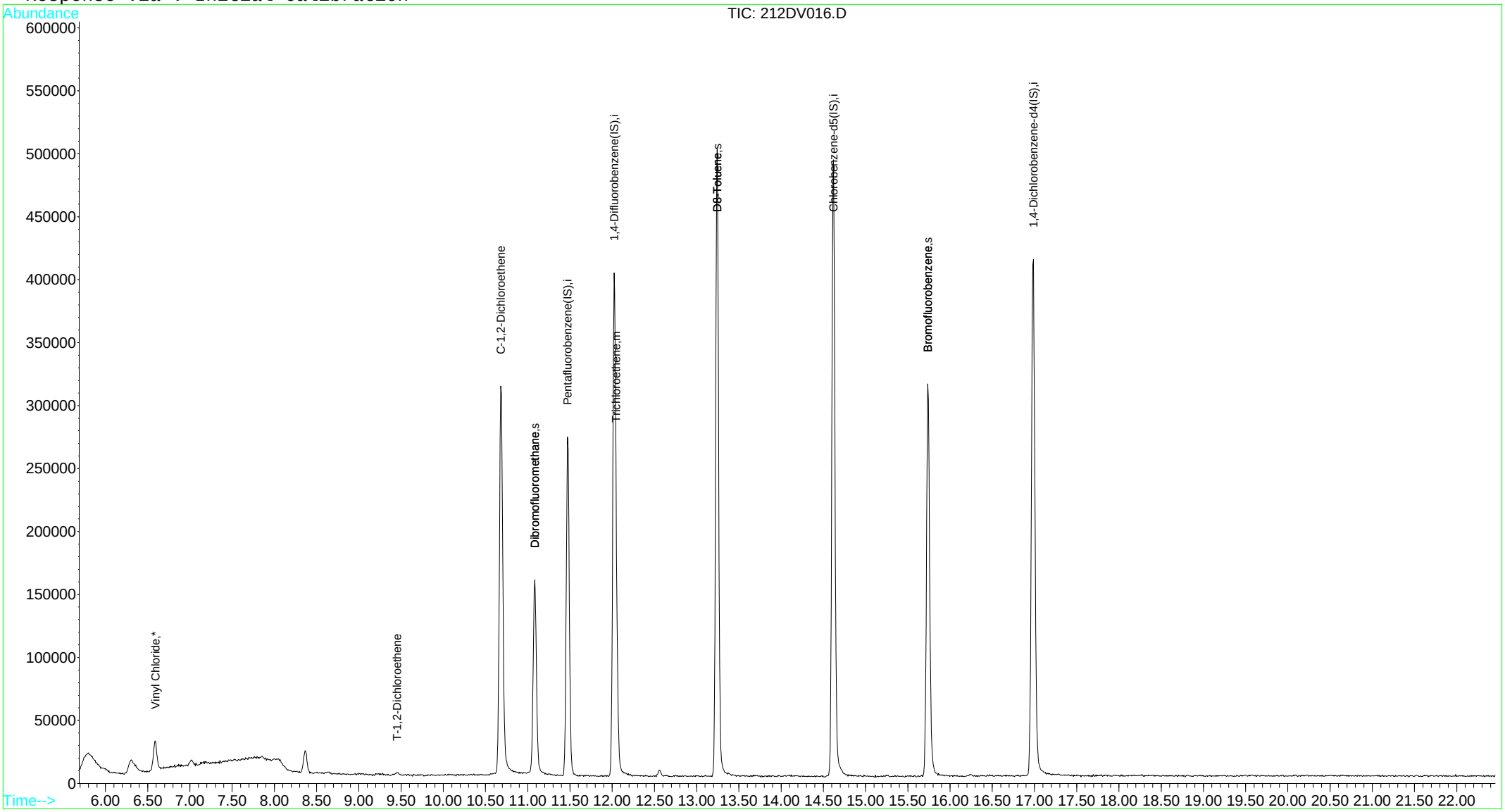
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV016.D Vial: 15
Acq On : 27 Apr 2021 2:32 pm Operator: nmc
Sample : ae02766-10re1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:03 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV017.D Vial: 16
Acq On : 27 Apr 2021 3:00 pm Operator: nmc
Sample : ae02766-17@1000 Inst : OVGCMS2
Misc : 1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	230894	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	394491	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235382	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	200618	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	132263	51.26	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.52%			
54) D8-Toluene	13.24	98	427109	57.46	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.92%			
75) Bromofluorobenzene	15.74	95	169069	41.63	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.26%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	67843	27.44	ug/kg	88
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	8357	3.16	ug/kg	99
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	132263	51.26	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	247560	97.76	ug/kg	98
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV017.D Vial: 16
Acq On : 27 Apr 2021 3:00 pm Operator: nmc
Sample : ae02766-17@1000 Inst : OVGCMS2
Misc : 1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	427109	57.46 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169069	41.63 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV017.D Vial: 16
Acq On : 27 Apr 2021 3:00 pm Operator: nmc
Sample : ae02766-17@1000 Inst : OVGCMS2
Misc : 1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	230894	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	394491	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235382	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	200618	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	132263	51.26	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.52%			
54) D8-Toluene	13.24	98	427109	57.46	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.92%			
75) Bromofluorobenzene	15.74	95	169069	41.63	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.26%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	67843	27.44	ug/kg	88
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	8357	3.16	ug/kg	99
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	132263	51.26	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	247560	97.76	ug/kg	98
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV017.D Vial: 16
Acq On : 27 Apr 2021 3:00 pm Operator: nmc
Sample : ae02766-17@1000 Inst : OVGCMS2
Misc : 1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

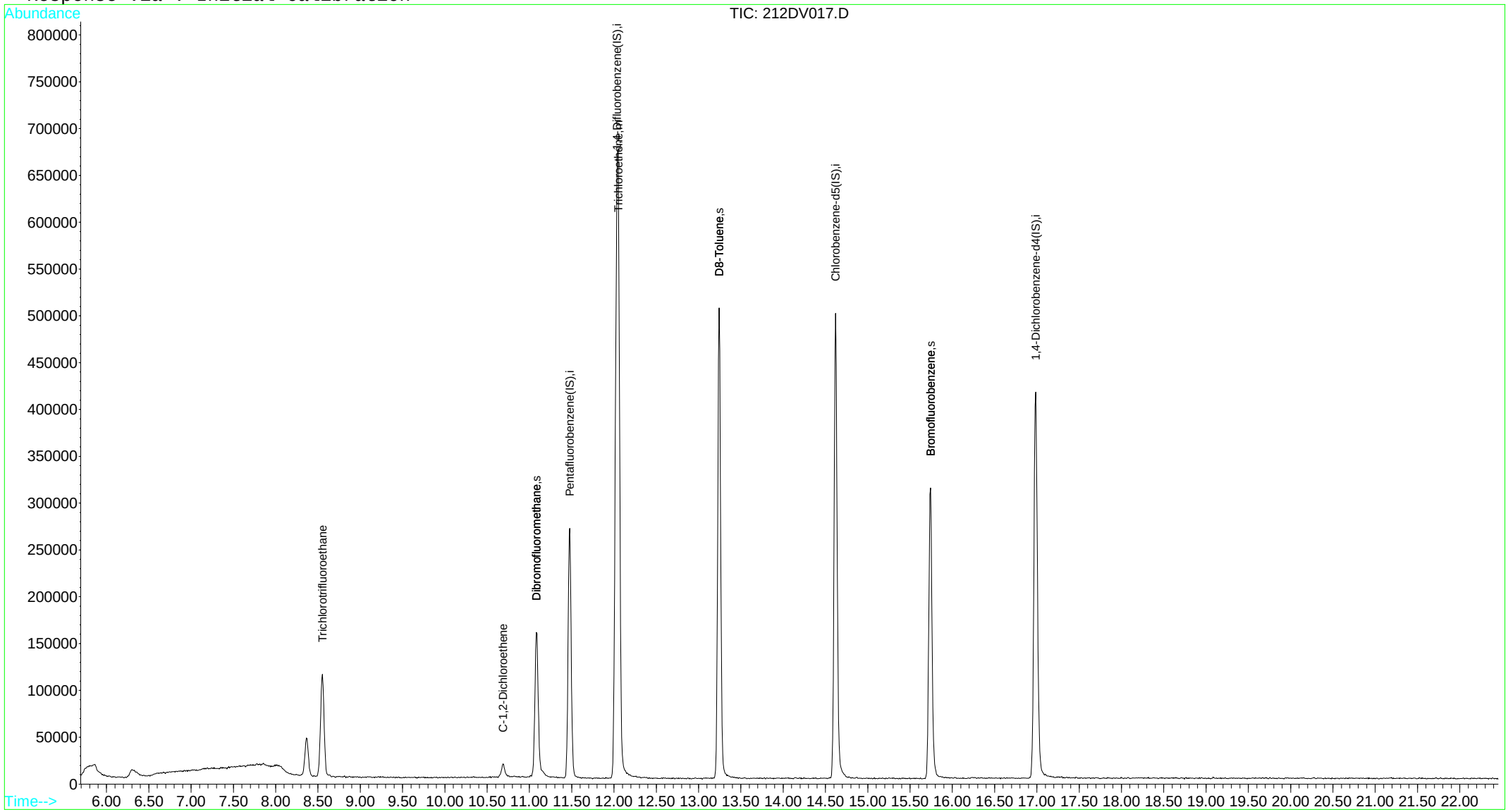
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	427109	57.46 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169069	41.63 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV017.D Vial: 16
Acq On : 27 Apr 2021 3:00 pm Operator: nmc
Sample : ae02766-17@1000 Inst : OVGCMS2
Misc : 1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

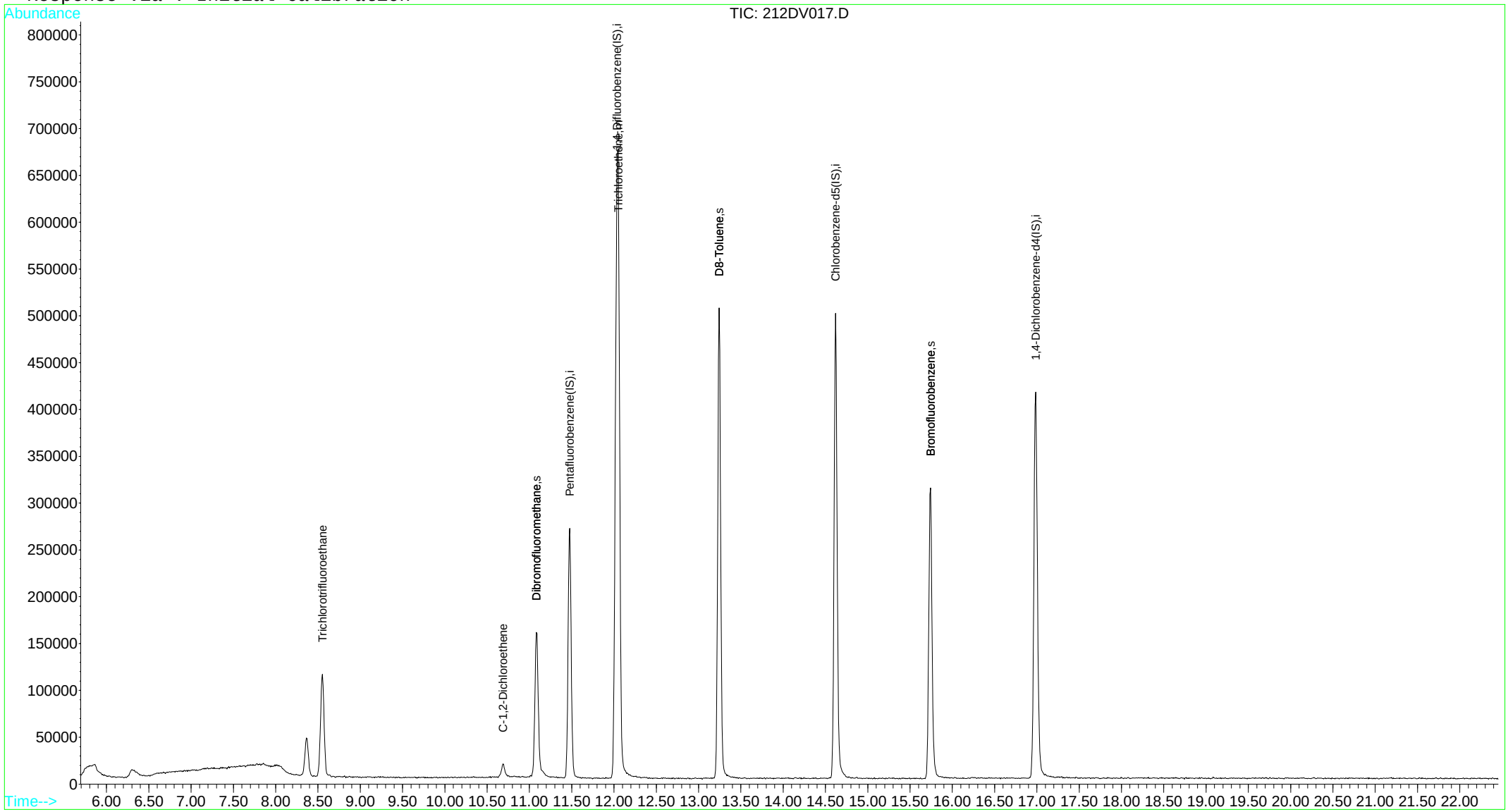
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV017.D Vial: 16
Acq On : 27 Apr 2021 3:00 pm Operator: nmc
Sample : ae02766-17@1000 Inst : OVGCMS2
Misc : 1000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

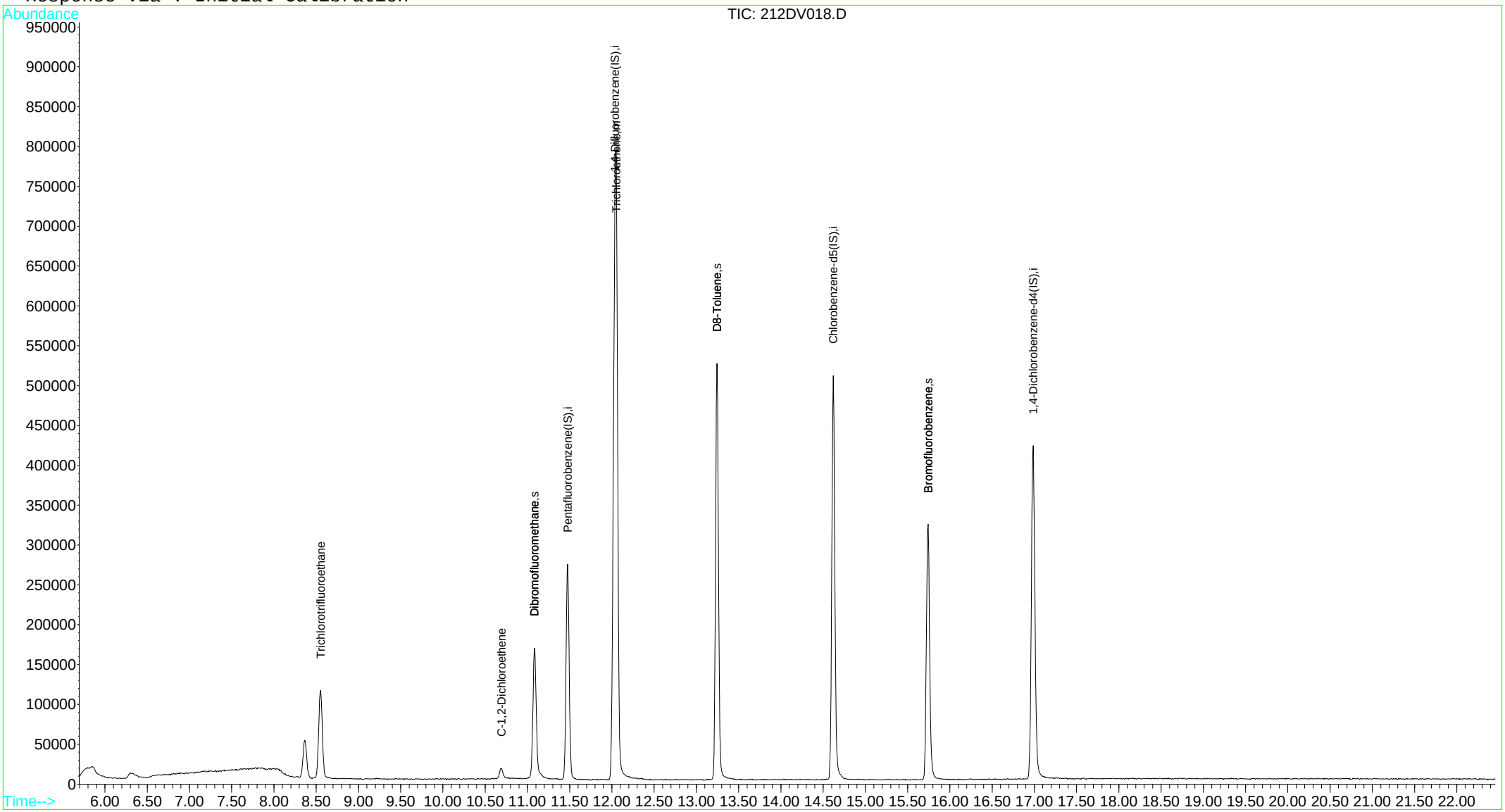
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV018.D Vial: 17
Acq On : 27 Apr 2021 3:29 pm Operator: nmc
Sample : ae02766-18@5000 Inst : OVGCMS2
Misc : 5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

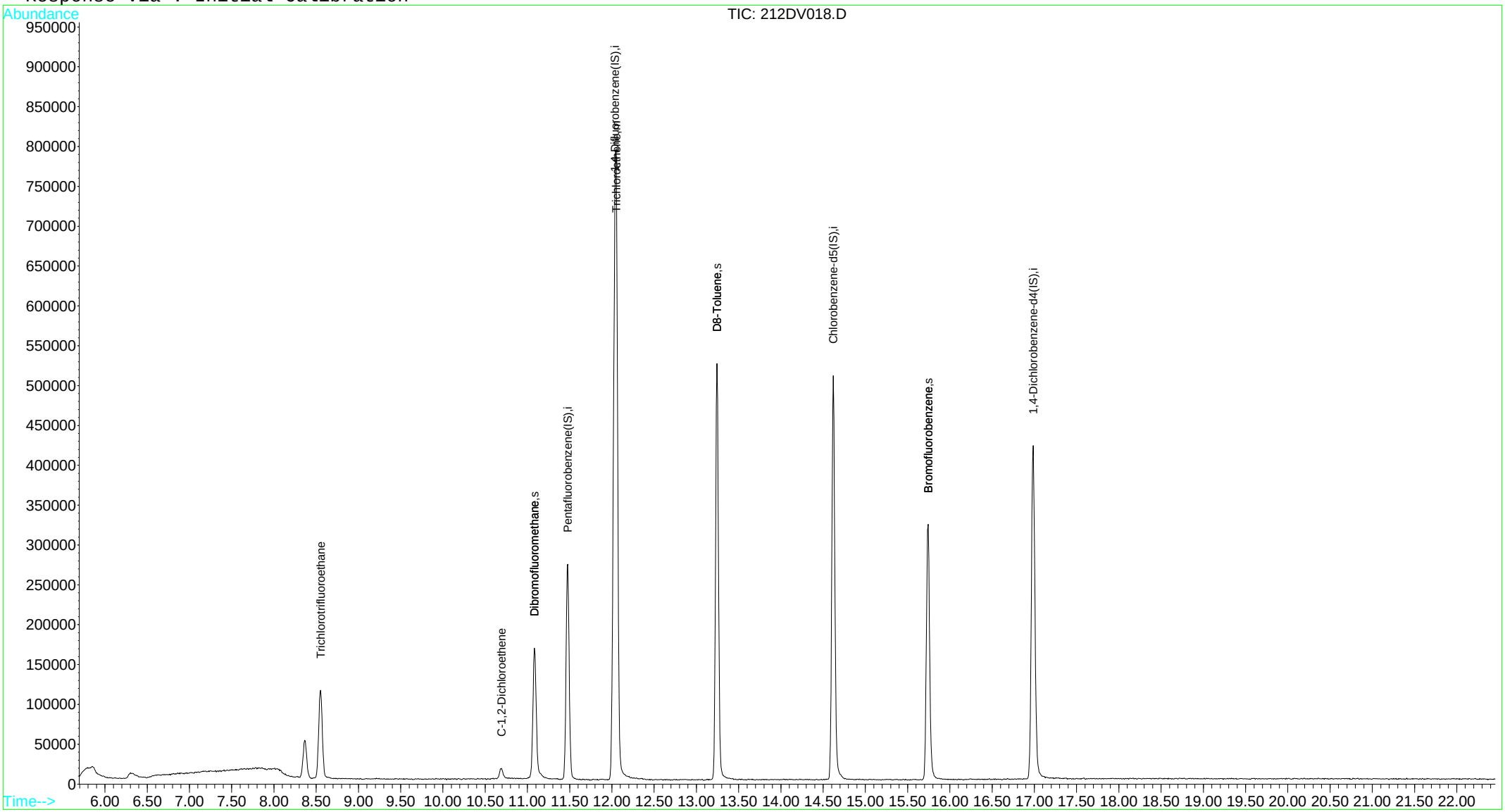
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV018.D Vial: 17
Acq On : 27 Apr 2021 3:29 pm Operator: nmc
Sample : ae02766-18@5000 Inst : OVGCMS2
Misc : 5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV018.D Vial: 17
Acq On : 27 Apr 2021 3:29 pm Operator: nmc
Sample : ae02766-18@5000 Inst : OVGCMS2
Misc : 5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	235204	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	400170	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	239342	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	204444	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	137748	52.41	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.82%			
54) D8-Toluene	13.24	98	444840	58.99	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.98%			
75) Bromofluorobenzene	15.74	95	177525	42.99	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	70154	27.85	ug/kg	86
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	8542	3.17	ug/kg	95
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	137748	52.41	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	309746	120.58	ug/kg	98
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV018.D Vial: 17
Acq On : 27 Apr 2021 3:29 pm Operator: nmc
Sample : ae02766-18@5000 Inst : OVGCMS2
Misc : 5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	444840	58.99 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	177525	42.99 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV018.D Vial: 17
Acq On : 27 Apr 2021 3:29 pm Operator: nmc
Sample : ae02766-18@5000 Inst : OVGCMS2
Misc : 5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	235204	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	400170	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	239342	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	204444	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	137748	52.41	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.82%			
54) D8-Toluene	13.24	98	444840	58.99	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.98%			
75) Bromofluorobenzene	15.74	95	177525	42.99	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	70154	27.85	ug/kg	86
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	8542	3.17	ug/kg	95
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	137748	52.41	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	309746	120.58	ug/kg	98
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV018.D Vial: 17
Acq On : 27 Apr 2021 3:29 pm Operator: nmc
Sample : ae02766-18@5000 Inst : OVGCMS2
Misc : 5000 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:04 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	444840	58.99 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	177525	42.99 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV019.D Vial: 18
Acq On : 27 Apr 2021 3:57 pm Operator: nmc
Sample : ae02766-19 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	229332	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	395299	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234752	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	199061	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130828	51.05	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.10%			
54) D8-Toluene	13.24	98	424677	57.01	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.02%			
75) Bromofluorobenzene	15.74	95	170939	42.20	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	3442	1.40	ug/kg	91
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	1407	0.58	ug/kg	98
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	17027	6.48	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130828	51.05	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	72365	28.52	ug/kg	96
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042721\212DV019.D Vial: 18
Acq On : 27 Apr 2021 3:57 pm Operator: nmc
Sample : ae02766-19 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	424677	57.01 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170939	42.20 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV019.D Vial: 18
Acq On : 27 Apr 2021 3:57 pm Operator: nmc
Sample : ae02766-19 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	229332	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	395299	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234752	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	199061	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130828	51.05	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.10%			
54) D8-Toluene	13.24	98	424677	57.01	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.02%			
75) Bromofluorobenzene	15.74	95	170939	42.20	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	3442	1.40	ug/kg	91
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.46	96	1407	0.58	ug/kg	98
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	17027	6.48	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130828	51.05	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	72365	28.52	ug/kg	96
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV019.D Vial: 18
Acq On : 27 Apr 2021 3:57 pm Operator: nmc
Sample : ae02766-19 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

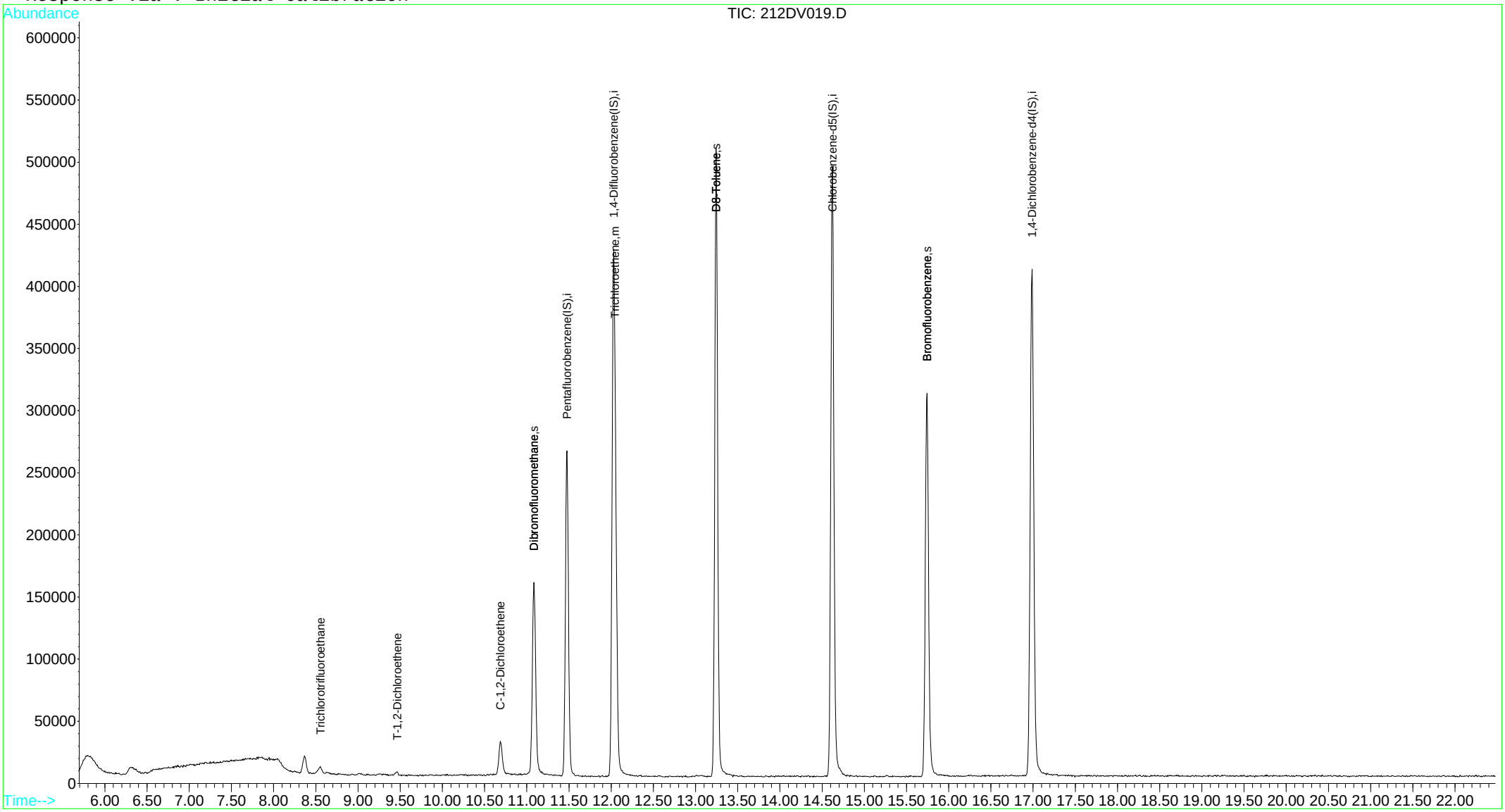
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	424677	57.01 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170939	42.20 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV019.D Vial: 18
Acq On : 27 Apr 2021 3:57 pm Operator: nmc
Sample : ae02766-19 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

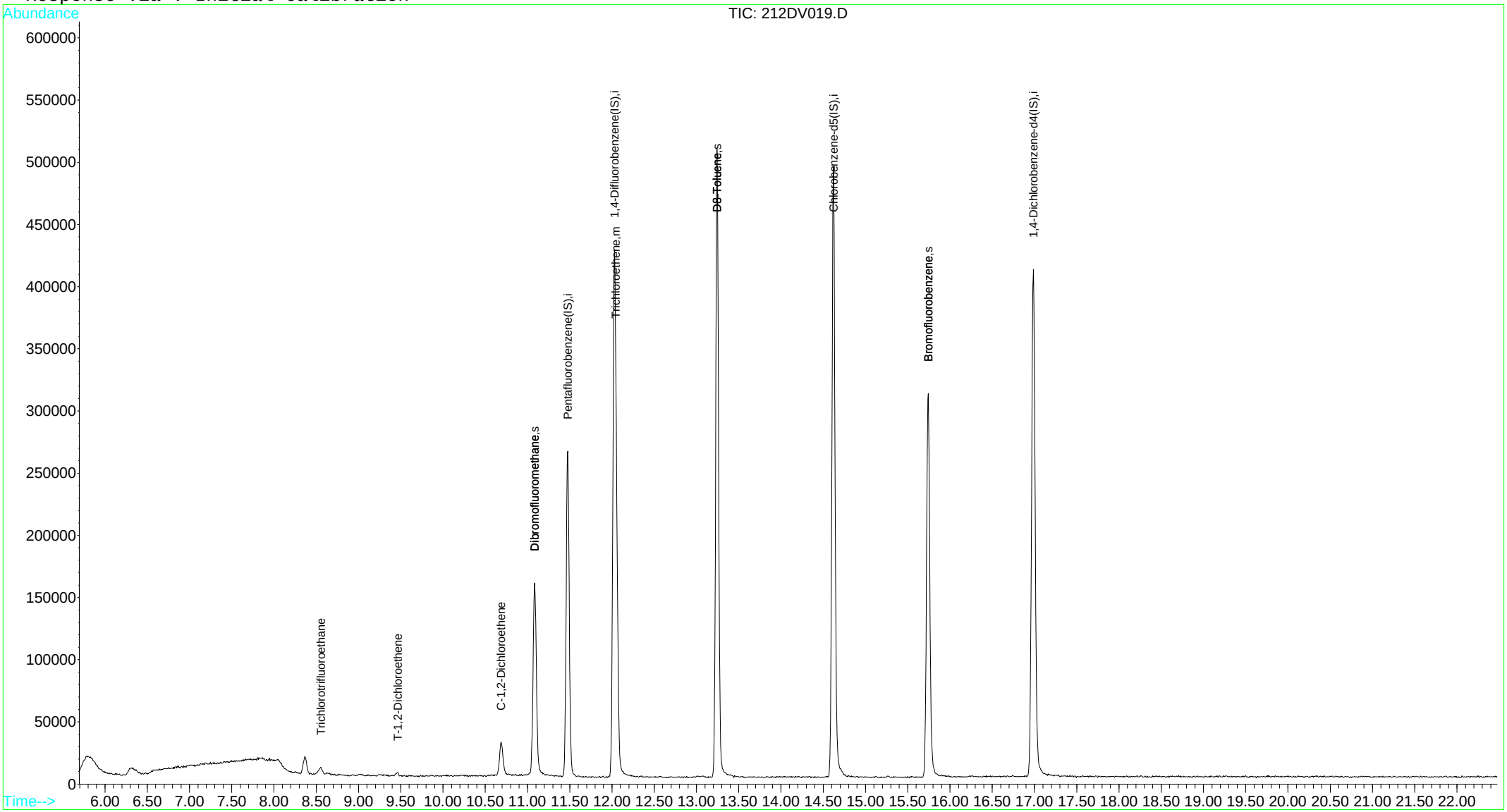
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV019.D Vial: 18
Acq On : 27 Apr 2021 3:57 pm Operator: nmc
Sample : ae02766-19 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

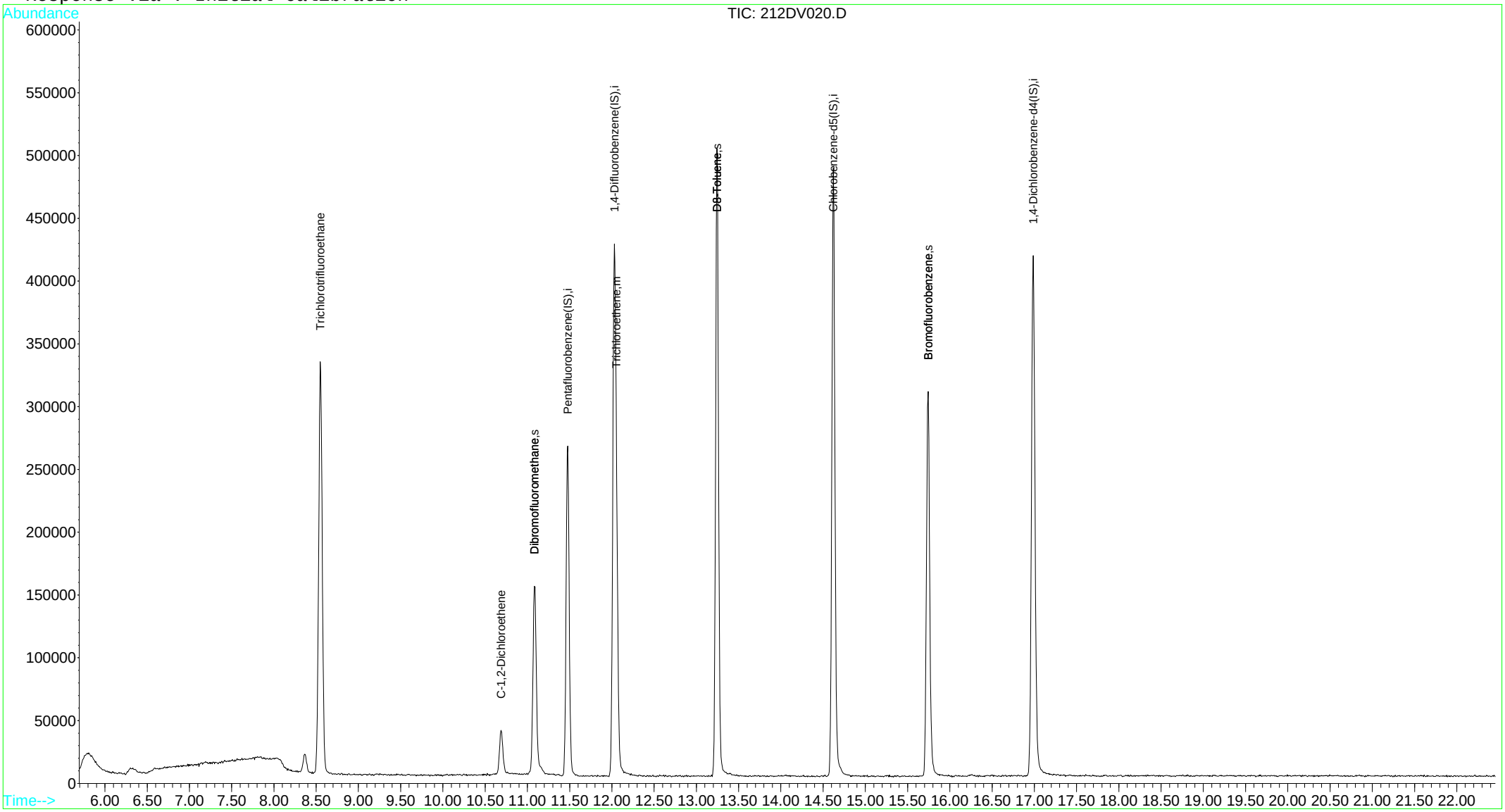
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV020.D Vial: 19
Acq On : 27 Apr 2021 4:26 pm Operator: nmc
Sample : ae02766-23@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

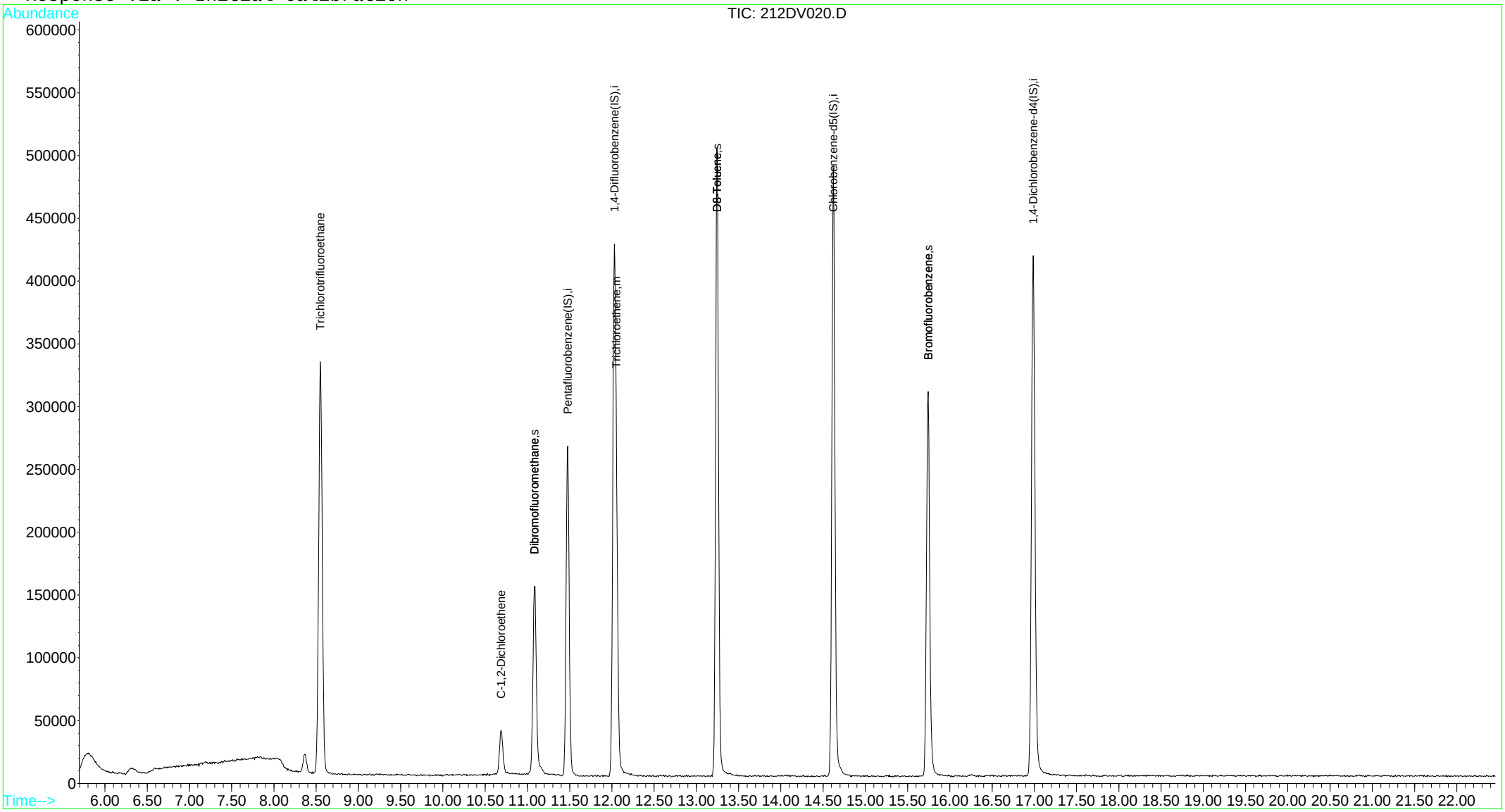
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV020.D Vial: 19
Acq On : 27 Apr 2021 4:26 pm Operator: nmc
Sample : ae02766-23@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV020.D Vial: 19
Acq On : 27 Apr 2021 4:26 pm Operator: nmc
Sample : ae02766-23@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	226398	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	388821	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235123	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	200604	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	128804	50.91	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.82%			
54) D8-Toluene	13.24	98	420585	57.40	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.80%			
75) Bromofluorobenzene	15.74	95	168364	41.50	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	206180	85.05	ug/kg	88
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	22183	8.55	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	128804	50.91	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	80103	32.09	ug/kg	97
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\042721\212DV020.D Vial: 19
Acq On : 27 Apr 2021 4:26 pm Operator: nmc
Sample : ae02766-23@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	420585	57.40 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168364	41.50 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV020.D Vial: 19
Acq On : 27 Apr 2021 4:26 pm Operator: nmc
Sample : ae02766-23@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	226398	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	388821	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235123	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	200604	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	128804	50.91	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 101.82%			
54) D8-Toluene	13.24	98	420585	57.40	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.80%			
75) Bromofluorobenzene	15.74	95	168364	41.50	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D. d		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	206180	85.05	ug/kg	88
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	22183	8.55	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	128804	50.91	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	80103	32.09	ug/kg	97
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV020.D Vial: 19
Acq On : 27 Apr 2021 4:26 pm Operator: nmc
Sample : ae02766-23@10 Inst : OVGCMS2
Misc : 10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	420585	57.40 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168364	41.50 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV021.D Vial: 20
Acq On : 27 Apr 2021 4:55 pm Operator: nmc
Sample : ae02766-24 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	228126	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	391088	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235329	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198535	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	131026	51.40	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.80%			
54) D8-Toluene	13.24	98	423971	57.53	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 115.06%			
75) Bromofluorobenzene	15.74	95	169142	41.66	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.59	62	6310	1.59	ug/kg	84
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.56	101	5079	2.08	ug/kg	85
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	1039	0.43	ug/kg#	69
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	109684	41.95	ug/kg	94
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	131026	51.40	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	12.06	130	35037	13.96	ug/kg	89
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV021.D Vial: 20
Acq On : 27 Apr 2021 4:55 pm Operator: nmc
Sample : ae02766-24 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	423971	57.53 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169142	41.66 ug/kg#	84
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV021.D Vial: 20
Acq On : 27 Apr 2021 4:55 pm Operator: nmc
Sample : ae02766-24 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	228126	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	391088	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	235329	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	198535	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	131026	51.40	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.80%			
54) D8-Toluene	13.24	98	423971	57.53	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 115.06%			
75) Bromofluorobenzene	15.74	95	169142	41.66	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 83.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.59	62	6310	1.59	ug/kg	84
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.56	101	5079	2.08	ug/kg	85
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.47	96	1039	0.43	ug/kg#	69
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	109684	41.95	ug/kg	94
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	131026	51.40	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	12.06	130	35037	13.96	ug/kg	89
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV021.D Vial: 20
Acq On : 27 Apr 2021 4:55 pm Operator: nmc
Sample : ae02766-24 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

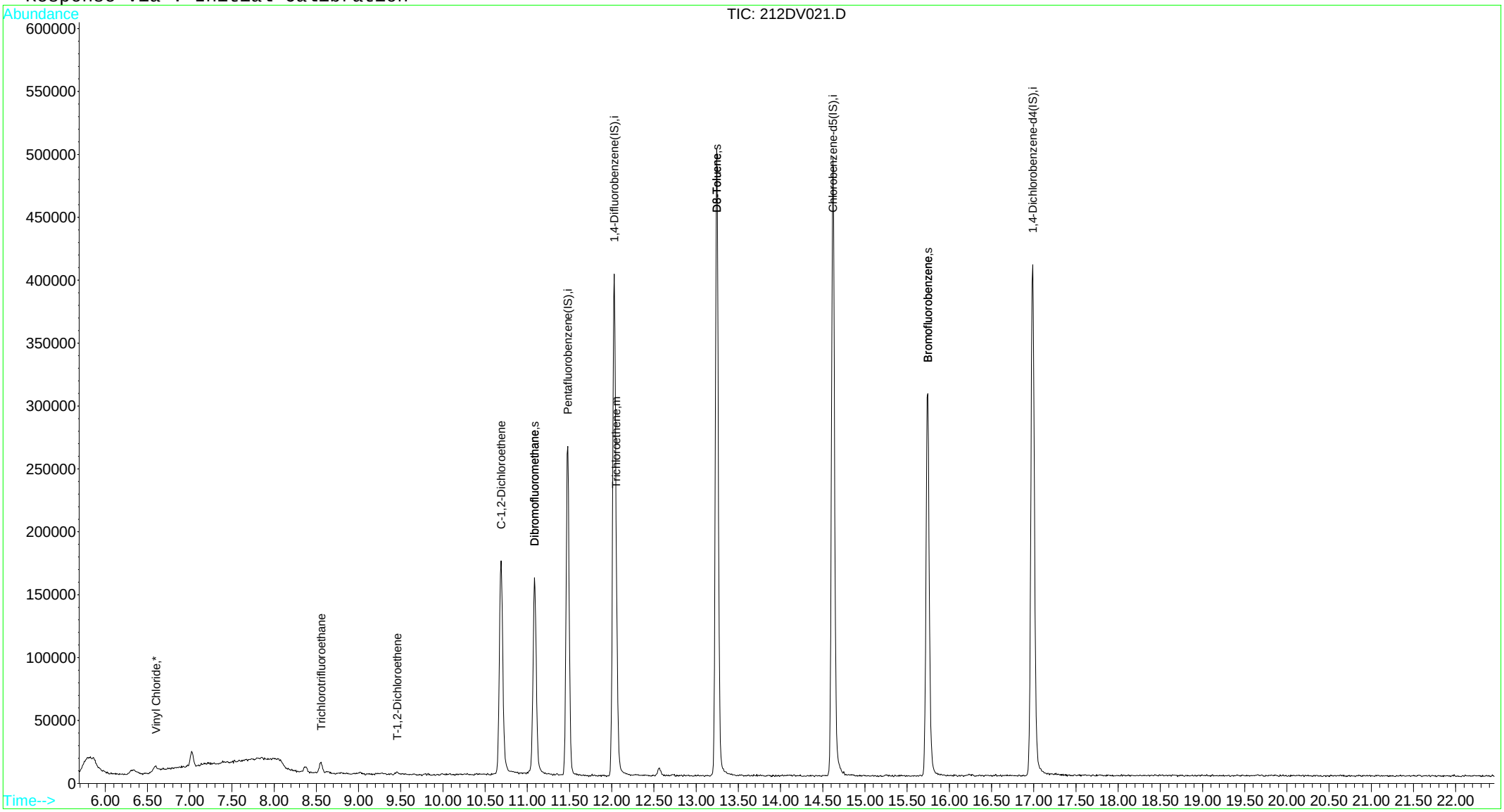
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	423971	57.53 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169142	41.66 ug/kg#	84
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV021.D Vial: 20
Acq On : 27 Apr 2021 4:55 pm Operator: nmc
Sample : ae02766-24 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

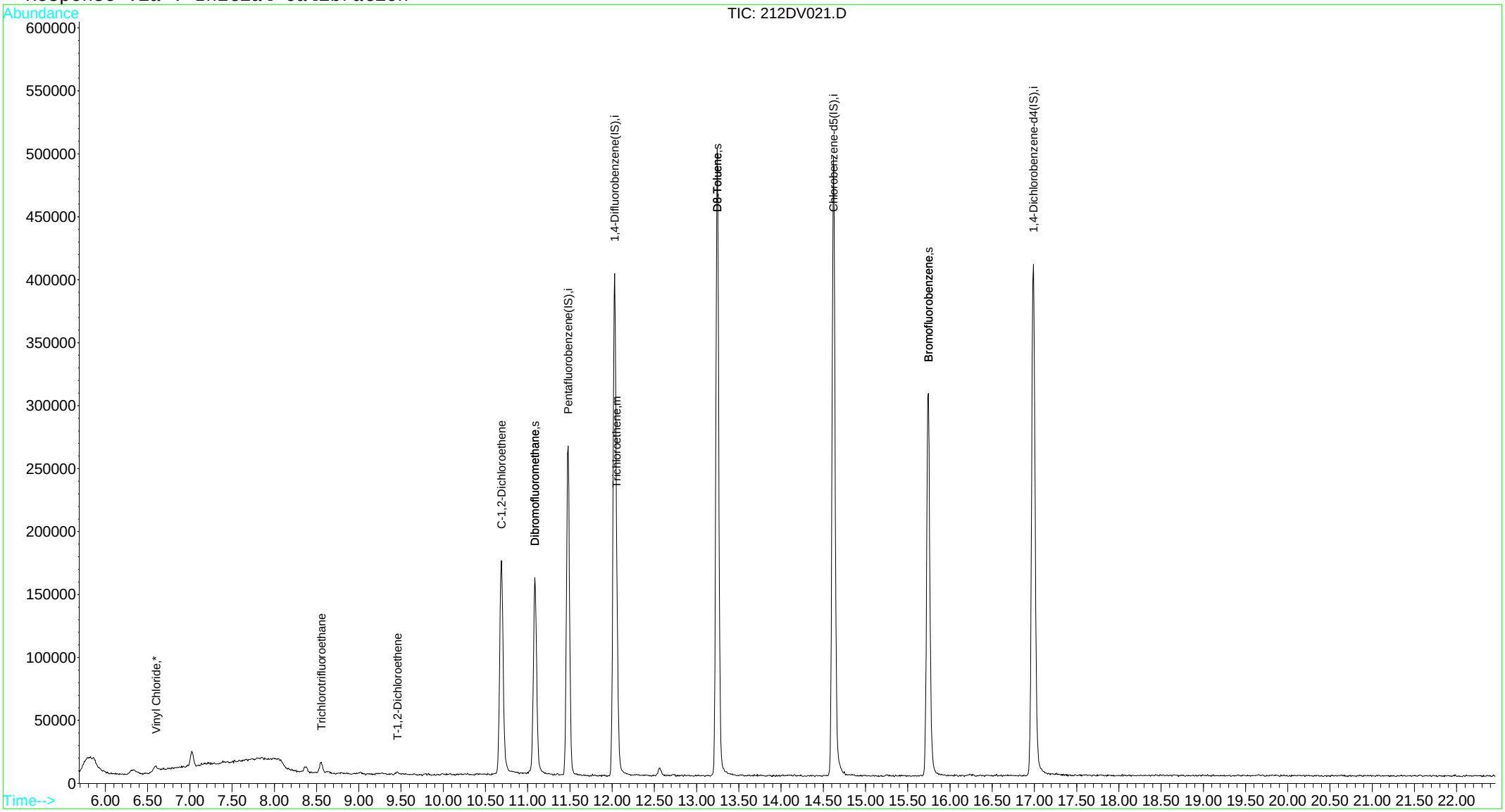
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV021.D Vial: 20
Acq On : 27 Apr 2021 4:55 pm Operator: nmc
Sample : ae02766-24 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:05 2021 Quant Results File: 030921.RES

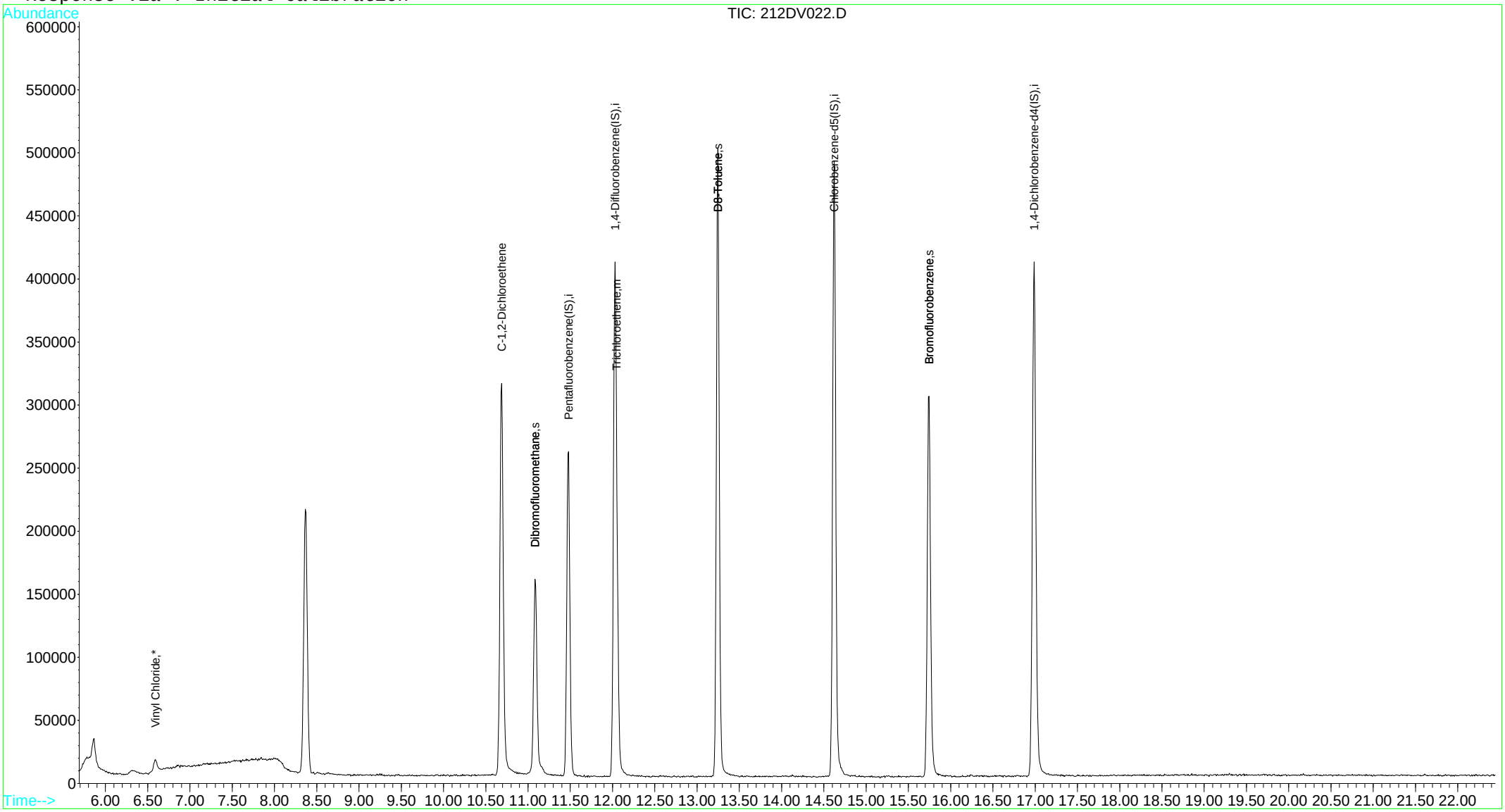
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV022.D Vial: 21
Acq On : 27 Apr 2021 5:23 pm Operator: nmc
Sample : ae02766-25@50 Inst : OVGCMS2
Misc : 50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

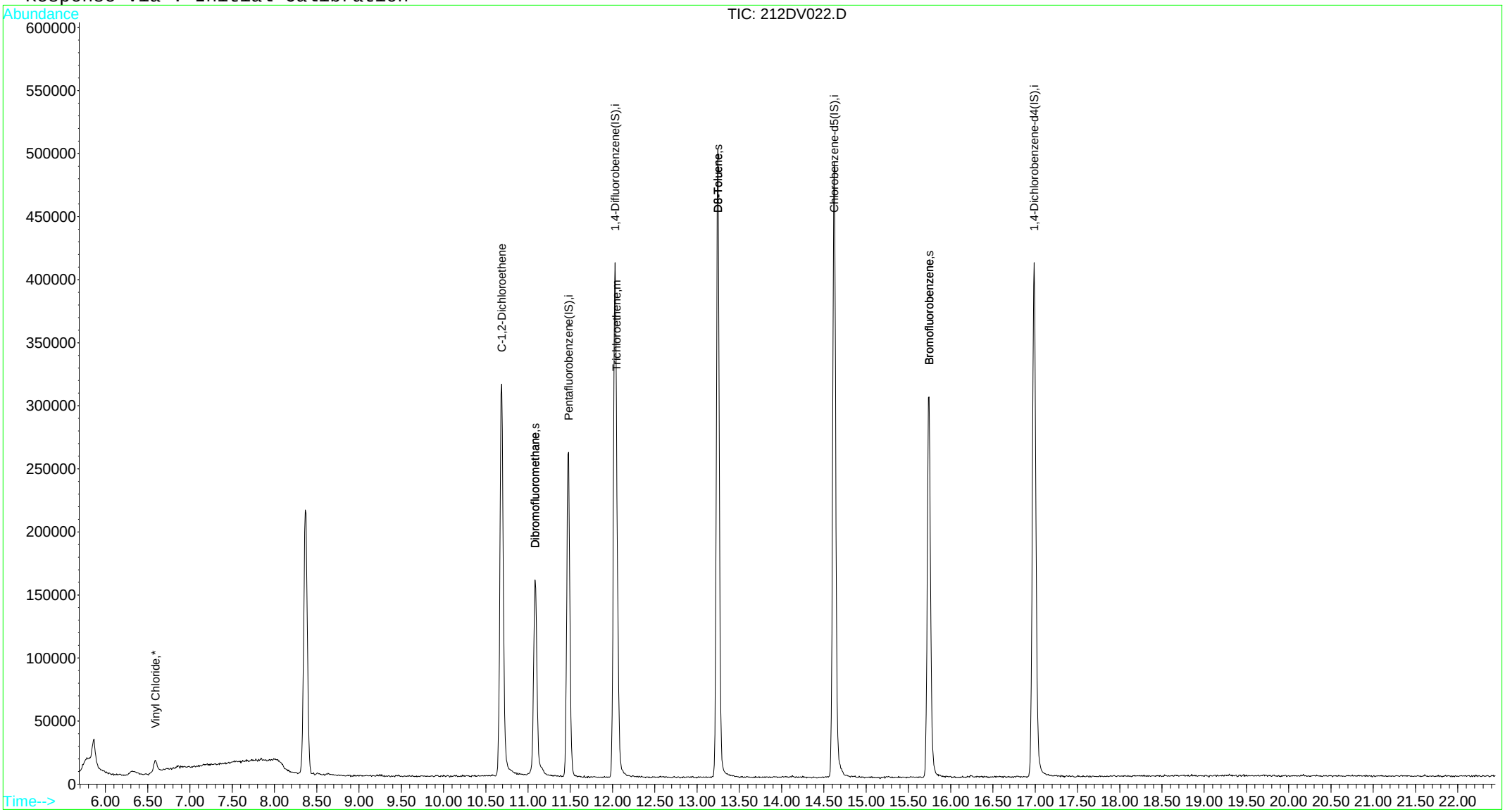
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV022.D Vial: 21
Acq On : 27 Apr 2021 5:23 pm Operator: nmc
Sample : ae02766-25@50 Inst : OVGCMS2
Misc : 50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV022.D Vial: 21
Acq On : 27 Apr 2021 5:23 pm Operator: nmc
Sample : ae02766-25@50 Inst : OVGCMS2
Misc : 50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	225772	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	392179	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	233087	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	197314	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130641	51.78	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 103.56%			
54) D8-Toluene	13.25	98	424298	57.41	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.82%			
75) Bromofluorobenzene	15.75	95	169128	42.05	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.59	62	14174	3.60	ug/kg	96
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D. d		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	194988	75.36	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D. d		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130641	51.78	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D. d		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	12.05	130	48451	19.25	ug/kg	94
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV022.D Vial: 21
Acq On : 27 Apr 2021 5:23 pm Operator: nmc
Sample : ae02766-25@50 Inst : OVGCMS2
Misc : 50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	424298	57.41 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	169128	42.05 ug/kg#	84
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV022.D Vial: 21
Acq On : 27 Apr 2021 5:23 pm Operator: nmc
Sample : ae02766-25@50 Inst : OVGCMS2
Misc : 50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	225772	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	392179	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	233087	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	197314	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130641	51.78	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 103.56%			
54) D8-Toluene	13.25	98	424298	57.41	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 114.82%			
75) Bromofluorobenzene	15.75	95	169128	42.05	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.59	62	14174	3.60	ug/kg	96
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D. d		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	194988	75.36	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D. d		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130641	51.78	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D. d		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	12.05	130	48451	19.25	ug/kg	94
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV022.D Vial: 21
Acq On : 27 Apr 2021 5:23 pm Operator: nmc
Sample : ae02766-25@50 Inst : OVGCMS2
Misc : 50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

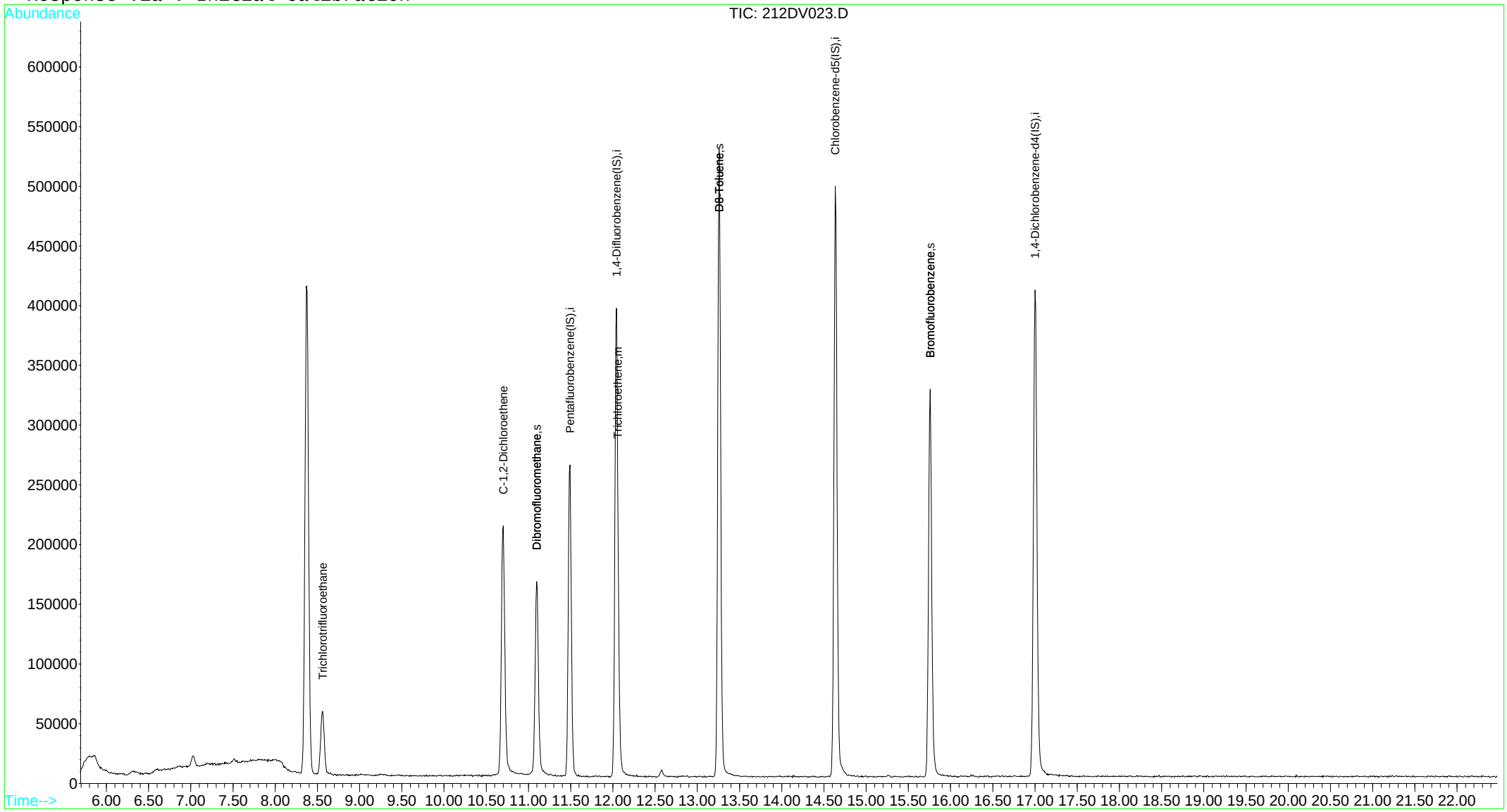
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	424298	57.41 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.75	95	169128	42.05 ug/kg#	84
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV023.D Vial: 22
Acq On : 27 Apr 2021 5:52 pm Operator: nmc
Sample : ae02766-26 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

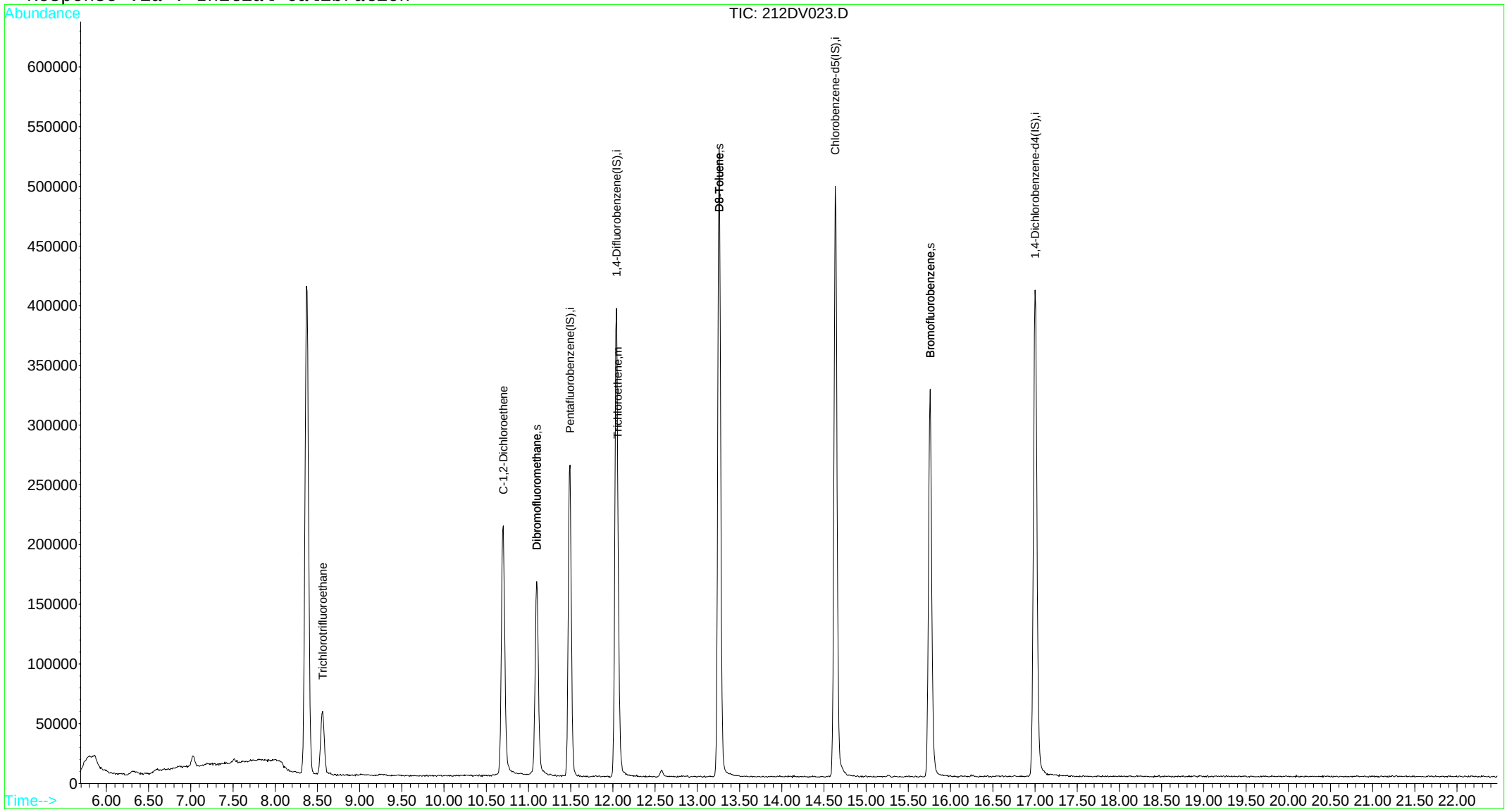
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV023.D Vial: 22
Acq On : 27 Apr 2021 5:52 pm Operator: nmc
Sample : ae02766-26 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV023.D Vial: 22
Acq On : 27 Apr 2021 5:52 pm Operator: nmc
Sample : ae02766-26 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	226106	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.04	114	393079	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.63	82	235293	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	197324	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	136874	54.17	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 108.34%			
54) D8-Toluene	13.26	98	445053	60.09	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 120.18%			
75) Bromofluorobenzene	15.76	95	176832	43.56	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.12%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	33046	13.65	ug/kg	88
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	133818	51.64	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	136874	54.17	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D. d		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	19662	7.79	ug/kg#	80
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV023.D Vial: 22
Acq On : 27 Apr 2021 5:52 pm Operator: nmc
Sample : ae02766-26 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.26	98	445053	60.09 ug/kg	95
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.76	95	176832	43.56 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV023.D Vial: 22
Acq On : 27 Apr 2021 5:52 pm Operator: nmc
Sample : ae02766-26 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	226106	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.04	114	393079	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.63	82	235293	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	197324	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	136874	54.17	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 108.34%			
54) D8-Toluene	13.26	98	445053	60.09	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 120.18%			
75) Bromofluorobenzene	15.76	95	176832	43.56	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.12%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	33046	13.65	ug/kg	88
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	133818	51.64	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.10	113	136874	54.17	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D. d		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	19662	7.79	ug/kg#	80
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV023.D Vial: 22
Acq On : 27 Apr 2021 5:52 pm Operator: nmc
Sample : ae02766-26 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:06 2021 Quant Results File: 030921.RES

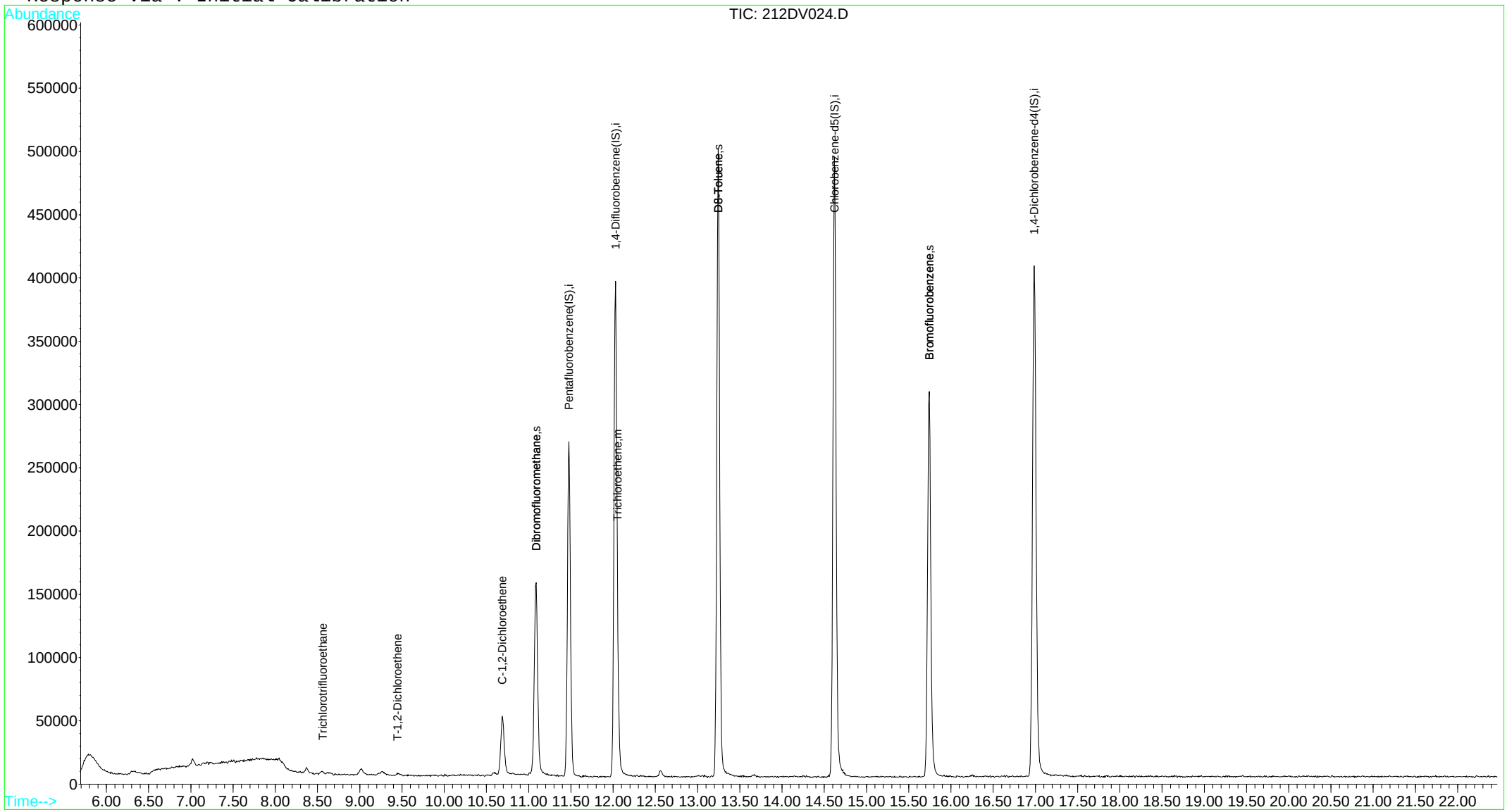
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.26	98	445053	60.09 ug/kg	95
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.76	95	176832	43.56 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV024.D Vial: 23
Acq On : 27 Apr 2021 6:20 pm Operator: nmc
Sample : ae02766-27 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

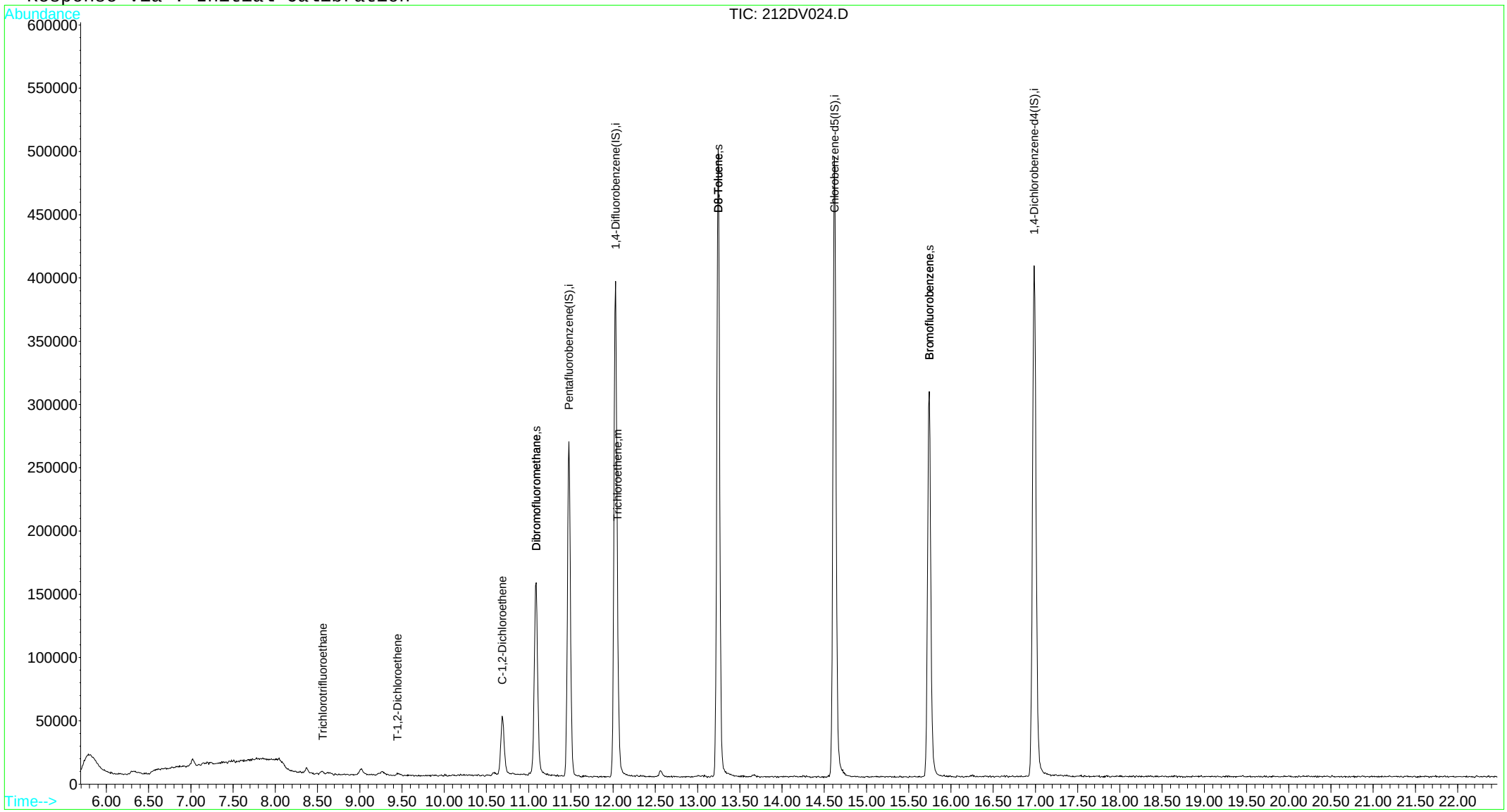
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV024.D Vial: 23
Acq On : 27 Apr 2021 6:20 pm Operator: nmc
Sample : ae02766-27 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV024.D Vial: 23
Acq On : 27 Apr 2021 6:20 pm Operator: nmc
Sample : ae02766-27 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	226379	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	392284	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	233536	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	197762	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	129580	51.22	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.44%			
54) D8-Toluene	13.24	98	417581	56.49	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 112.98%			
75) Bromofluorobenzene	15.74	95	166394	41.30	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.57	101	1436	0.59	ug/kg	91
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	783	0.33	ug/kg#	73
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	28142	10.85	ug/kg	100
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	129580	51.22	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	16131	6.41	ug/kg#	75
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV024.D Vial: 23
Acq On : 27 Apr 2021 6:20 pm Operator: nmc
Sample : ae02766-27 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	417581	56.49 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	166394	41.30 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV024.D Vial: 23
Acq On : 27 Apr 2021 6:20 pm Operator: nmc
Sample : ae02766-27 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	226379	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	392284	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	233536	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	197762	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	129580	51.22	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 102.44%			
54) D8-Toluene	13.24	98	417581	56.49	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 112.98%			
75) Bromofluorobenzene	15.74	95	166394	41.30	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 82.60%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D. d		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.57	101	1436	0.59	ug/kg	91
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	783	0.33	ug/kg#	73
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	28142	10.85	ug/kg	100
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	129580	51.22	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	16131	6.41	ug/kg#	75
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV024.D Vial: 23
Acq On : 27 Apr 2021 6:20 pm Operator: nmc
Sample : ae02766-27 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	417581	56.49 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	166394	41.30 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV025.D Vial: 24
Acq On : 27 Apr 2021 6:49 pm Operator: nmc
Sample : ae02766-28 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	232031	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	399685	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	238154	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	201122	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130614	50.37	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 100.74%			
54) D8-Toluene	13.24	98	422990	56.16	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 112.32%			
75) Bromofluorobenzene	15.74	95	168119	40.91	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 81.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.59	62	3853	0.95	ug/kg#	95
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	799	0.33	ug/kg#	75
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	47070	17.70	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130614	50.37	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	6444	2.51	ug/kg#	34
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV025.D Vial: 24
Acq On : 27 Apr 2021 6:49 pm Operator: nmc
Sample : ae02766-28 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	422990	56.16 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168119	40.91 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV025.D Vial: 24
Acq On : 27 Apr 2021 6:49 pm Operator: nmc
Sample : ae02766-28 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	232031	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	399685	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	238154	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	201122	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	130614	50.37	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 100.74%			
54) D8-Toluene	13.24	98	422990	56.16	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 112.32%			
75) Bromofluorobenzene	15.74	95	168119	40.91	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 81.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.59	62	3853	0.95	ug/kg#	95
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.45	96	799	0.33	ug/kg#	75
20) Isopropyl Ether	0.00	45	0	N.D. d		
21) C-1,2-Dichloroethene	10.69	96	47070	17.70	ug/kg	97
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D. d		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	130614	50.37	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	6444	2.51	ug/kg#	34
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042721\212DV025.D Vial: 24
Acq On : 27 Apr 2021 6:49 pm Operator: nmc
Sample : ae02766-28 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

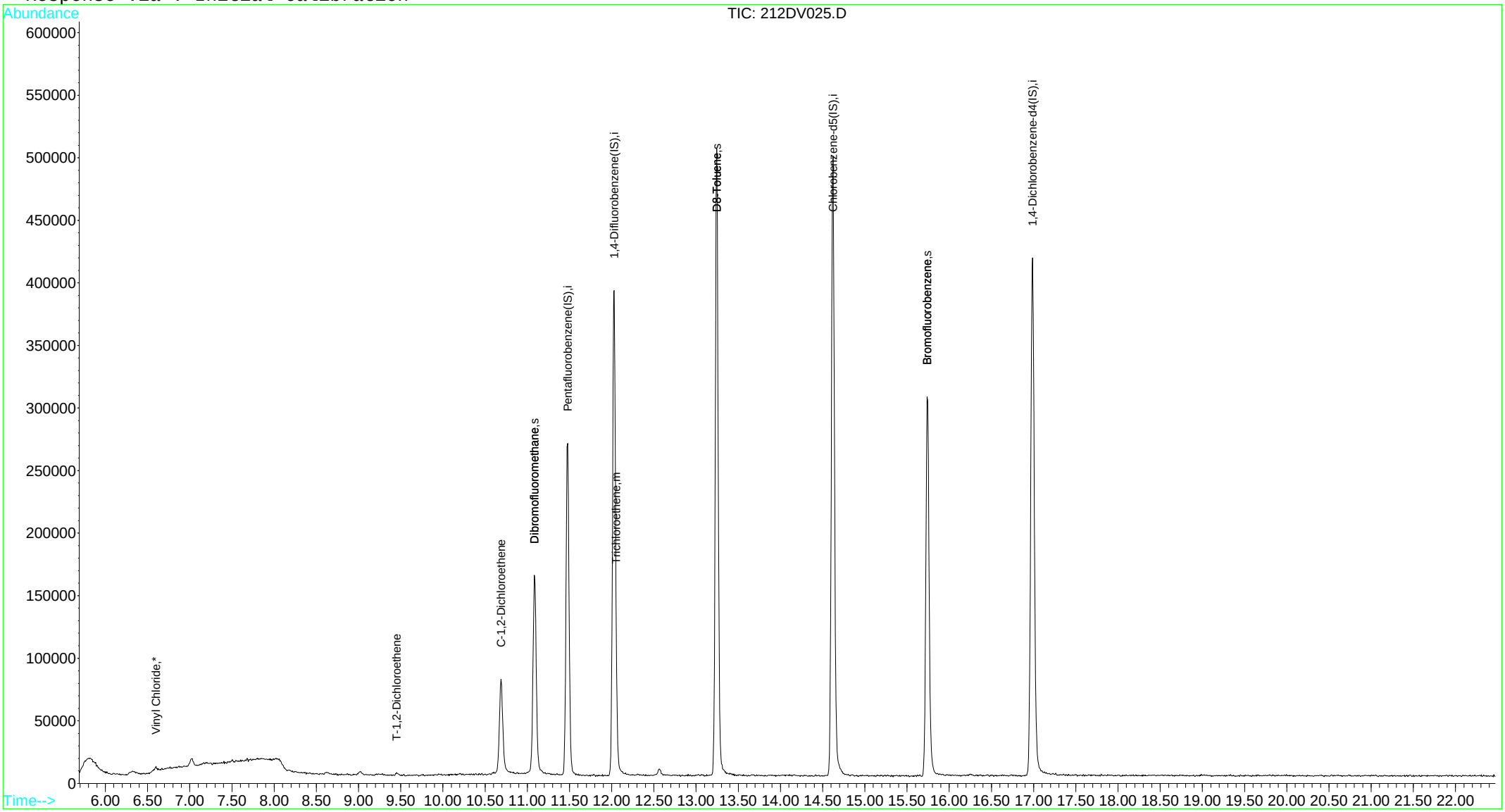
Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	422990	56.16 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	168119	40.91 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV025.D Vial: 24
Acq On : 27 Apr 2021 6:49 pm Operator: nmc
Sample : ae02766-28 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

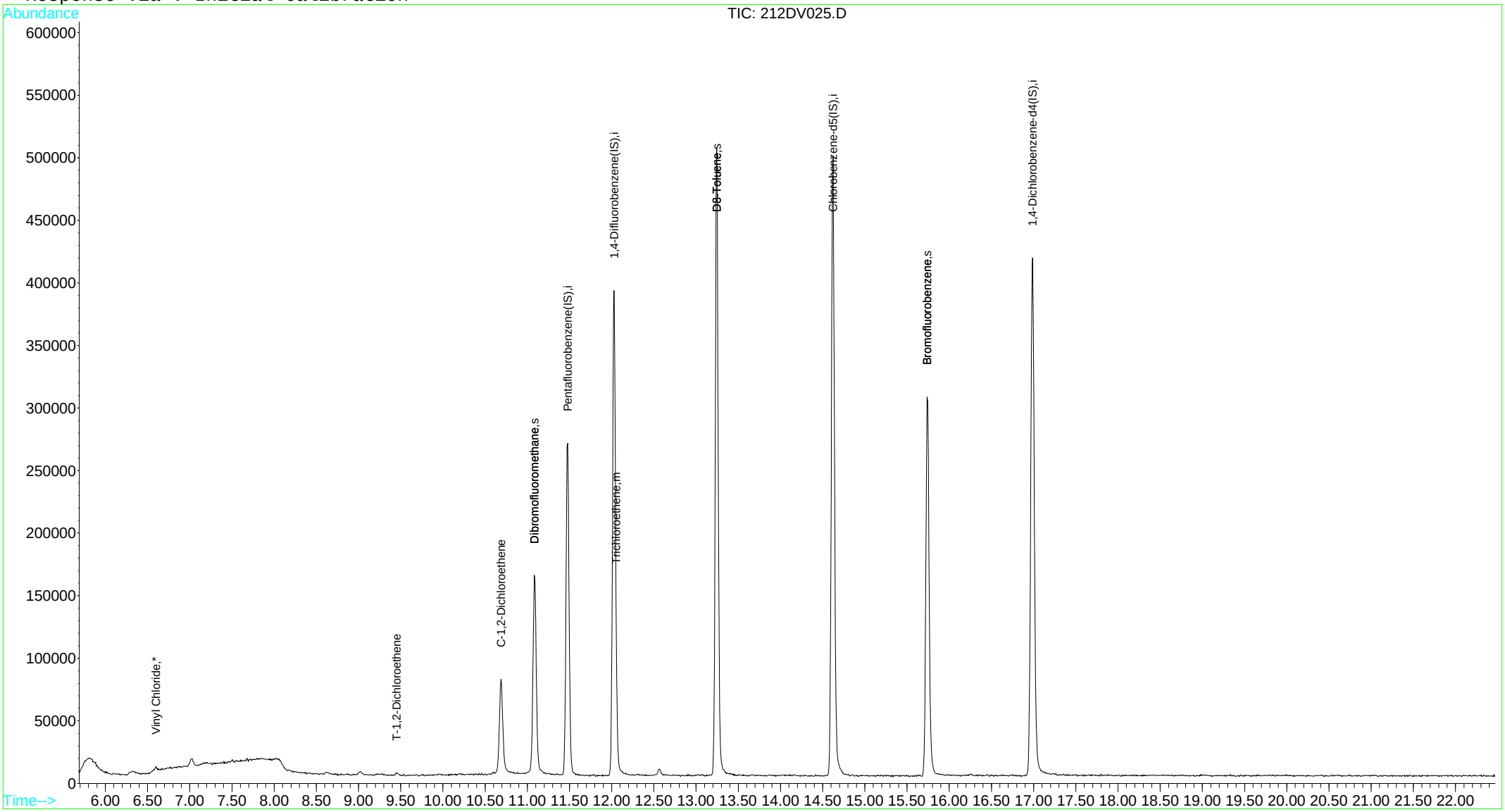
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042721\212DV025.D Vial: 24
Acq On : 27 Apr 2021 6:49 pm Operator: nmc
Sample : ae02766-28 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 7:07 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA66116

Instrument: OVGCMS5

Calibration ID: 2103152

Printed: 4/27/2021 1:25:53PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA66116-TUN1	QC		1		A1B1157	A0K0862		
AA66116-CCV1	QC		2		A1D1138	A1D0593		
1D27020-BS1	QC		3			A1D0593		
1D27020-BLK1	QC		4			A1D0593		
AE03392-01	60D TCL SOM01.2 CLP-LIK	B	5			A1D0593	Tetra Tech, Inc. (TE016)	History 1x jmw 4/23/21 custom
AE03392-01	8260D Extended	B	6			A1D0593	Tetra Tech, Inc. (TE016)	BatchQC
AE03392-01	8260D Arom	B	7			A1D0593	Tetra Tech, Inc. (TE016)	BatchQC
AE03392-01	8260D Appendix 1 FL	B	8			A1D0593	Tetra Tech, Inc. (TE016)	BatchQC
AE03392-01	8260D	B	9			A1D0593	Tetra Tech, Inc. (TE016)	BatchQC
AE03392-01	624.1	B	10			A1D0593	Tetra Tech, Inc. (TE016)	BatchQC
AE03392-02	60D TCL SOM01.2 CLP-LIK	A	11			A1D0593	Tetra Tech, Inc. (TE016)	History 1x jmw 4/23/21 custom
AE02766-03RE1	60D TCL SOM01.2 CLP-LIK	B	12			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr10x c12dce Re-extract added 4/27/20
AE02766-06RE1	60D TCL SOM01.2 CLP-LIK	B	13			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr50x c12dce, tce Re-extract added 4/2
AE02766-08RE1	60D TCL SOM01.2 CLP-LIK	B	14			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr1x possible c12dce, tce c/o Re-extrac
AE02766-16RE1	60D TCL SOM01.2 CLP-LIK	B	15			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr5x VC Re-extract added 4/27/2021 by
AE03377-11RE1	8260D	B	16			A1D0593		rr@2.5x overdilute Re-extract added 4
AE03318-01	8260D Extended	A	17			A1D0593		MMA
AE03396-01RE1	8260D Arom	B	18			A1D0593		rr@5x EB Re-extract added 4/27/2021
AE03318-02	8260D Extended	A	19			A1D0593		MMA
AE03396-06	8260D Arom	B	20			A1D0593		run1x nc4/26/21
AE03396-07	8260D Arom	B	21			A1D0593		run1x nc4/26/21
AE03396-08	8260D Arom	B	22			A1D0593		run1x nc4/26/21
AE03396-09	8260D Arom	B	23			A1D0593		run2x nc4/26/21

Samples Loaded By 04/27/21 Date

Data Processed By 04/28/21 Date

ANALYSIS SEQUENCE

AA66116

Instrument: OVGCMS5

Calibration ID: 2103152

Printed: 4/27/2021 1:25:53PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AE03396-10	8260D Arom	B	24			A1D0593		run10x nc4/26/21
AE03398-01RE1	624.1	C	25			A1D0593		rr1x bromodichloromethane high ccv R
AE03301-03	8260D Appendix 1 FL	F	26			A1D0593		
AE03301-04	8260D Appendix 1 FL	F	27			A1D0593		
1D27020-MS1	QC		28			A1D0593		
1D27020-MSD1	QC		29			A1D0593		

Samples Loaded By — Date: 04/27/21

Data Processed By — Date: 04/28/21

PREPARATION BENCH SHEET

Printed: 4/27/2021 1:22:50PM

1D27020

ENCO Orlando

Analysis
624.1 [EPA 624.1]
8260D [EPA 8260D]
8260D Appendix 1 FL [EPA 8260D]
8260D Arom [EPA 8260D]
8260D Extended [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
__ A1B1158 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1D27020-BLK1		Blank		QC			5	5			5	
1D27020-BS1		LCS		QC			5	5	A1D1159 A1D1060	2 2	5	
1D27020-MS1		Matrix Spike [AE03392-01]		QC	<2		5	5	A1D1159 A1D1060	2 2	5	
1D27020-MSD1		Matrix Spike Dup [AE03392-01]		QC	<2		5	5	A1D1159 A1D1060	2 2	5	
AE02766-03RE1	C	HMPN-MW0041-035.0-20210429[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2		5	5			5	rr10x c12dce Re-extract added 4/27/2021 by NMC
AE02766-06RE1	C	HMPN-MW0031-035.0-20210429[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2		5	5			5	rr50x c12dce, tce Re-extract added 4/27/2021 by NMC
AE02766-08RE1	C	HMPN-MW0036-015.0-20210429[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2		5	5			5	rr1x possible c12dce, tce c/o Re-extract added 4/27/2021 by NMC
AE02766-16RE1	C	HMPN-MW0037-010.0-20210429[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2		5	5			5	rr5x VC Re-extract added 4/27/2021 by NMC
AE03301-03		MW-2S F[MS24	03-May-21	8260D Appendix 1 FL	<2		5	5			5	
AE03301-04		MW-2I F[MS24	03-May-21	8260D Appendix 1 FL	<2		5	5			5	
AE03318-01		I - Liquid_Unknown A[MS18	28-Apr-21	8260D Extended	<2		5	5			5	MMA
AE03318-02		I - Liquid_Workstation A[MS18	28-Apr-21	8260D Extended			5	5			5	MMA
AE03377-11RE1		CE05146-11 (Scott Deep) B[MS21	27-Apr-21	8260D	<2		5	5			5	rr@2.5x overdilute Re-extract added 4/27/2021 by KKW
AE03392-01	C	CRCA-ASEFFLUENT-20210428[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2		5	5			5	History 1x jmw 4/23/21 custom

PREPARATION BENCH SHEET

1D27020

ENCO Orlando

Printed: 4/27/2021 1:22:50PM

Surrogate Solution

___ A1B1158 8260 surr working (lower conc.)

Spiking Solution

A1D1060 8260 2nd source Gases/Acrolein virtual

A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Prepared using: EPA 5030B_MS

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE03392-01	C	CRCA-ASEFFLUENT-20210422 B[MS50		8260D			5	5			5	Added for BatchQC in: 1D27020
AE03392-01	C	CRCA-ASEFFLUENT-20210422 B[MS50		8260D Extended			5	5			5	Added for BatchQC in: 1D27020
AE03392-01	C	CRCA-ASEFFLUENT-20210422 B[MS50		8260D Arom			5	5			5	Added for BatchQC in: 1D27020
AE03392-01	C	CRCA-ASEFFLUENT-20210422 B[MS50		8260D Appendix 1 FL			5	5			5	Added for BatchQC in: 1D27020
AE03392-01	C	CRCA-ASEFFLUENT-20210422 B[MS50		624.1			5	5			5	Added for BatchQC in: 1D27020
AE03392-02	C	CRCA-ASINFLUENT-20210422 A[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	≤2	2	5	5			5	History 1x jmw 4/23/21 custom
AE03396-01RE1		MW-9 B[MS22	30-Apr-21	8260D Arom	≤2	2	5	5			5	rr@5x EB Re-extract added 4/27/2021 by KKW
AE03396-06		GF-3 B[MS22	30-Apr-21	8260D Arom	≤2	2	5	5			5	run1x nc4/26/21
AE03396-07		GF-4 B[MS22	30-Apr-21	8260D Arom	≤2	2	5	5			5	run1x nc4/26/21
AE03396-08		GF-5 B[MS22	30-Apr-21	8260D Arom	≤2	2	5	5			5	run1x nc4/26/21
AE03396-09		GF-7 B[MS22	30-Apr-21	8260D Arom	≤2	2	5	5			5	run2x nc4/26/21
AE03396-10		GF-8 B[MS22	30-Apr-21	8260D Arom	≤2	2	5	5			5	run10x nc4/26/21
AE03398-01RE1		CWWTF-INF C[MS21	29-Apr-21	624.1	≤2	2	5	5			5	rr1x bromodichloromethane high ccv Re-extract added 4/27/2021 by NMC

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

PREPARATION BENCH SHEET

Printed: 4/27/2021 1:22:50PM

1D27020

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

___	A1B1158	8260 surr working (lower conc.)

Spiking Solution

A1D1060	8260 2nd source Gases/Acrolein virtual
A1D1159	8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments

Instrument 5

EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 04/27/21

StopDate 04/27/21

Instrument ID OVGCMS-5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1C1135	P&T Anti-Foam working solution	N/A

04/27/21

Samples Prepared By Date

Samples Prepared By Date

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

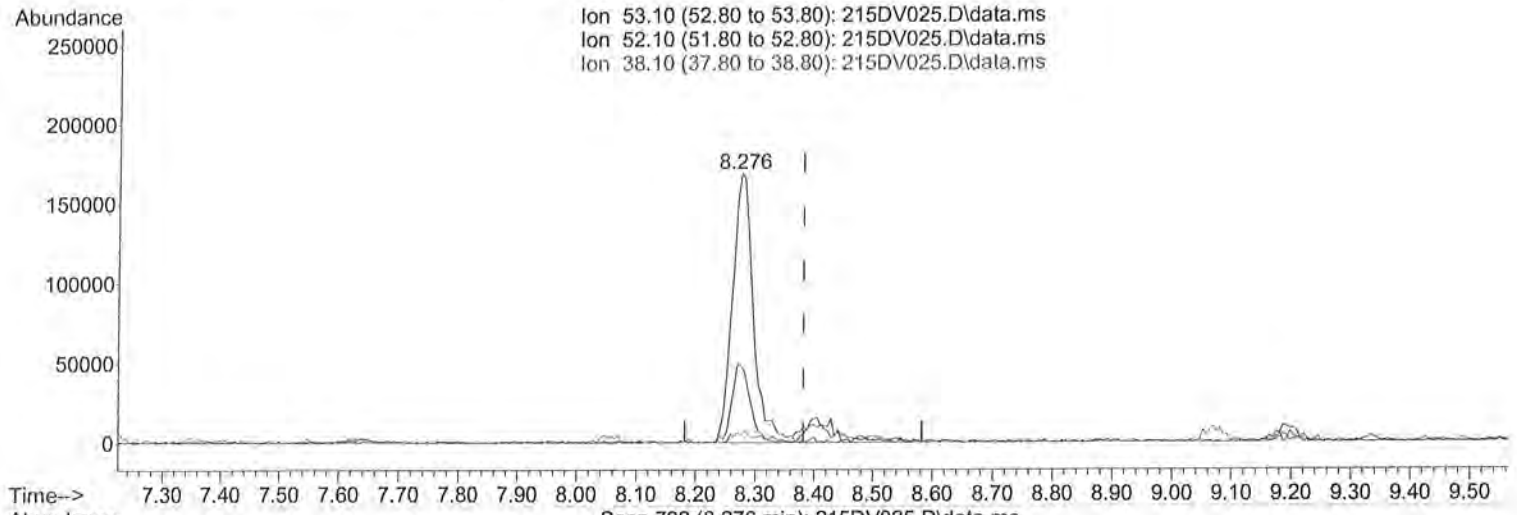
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

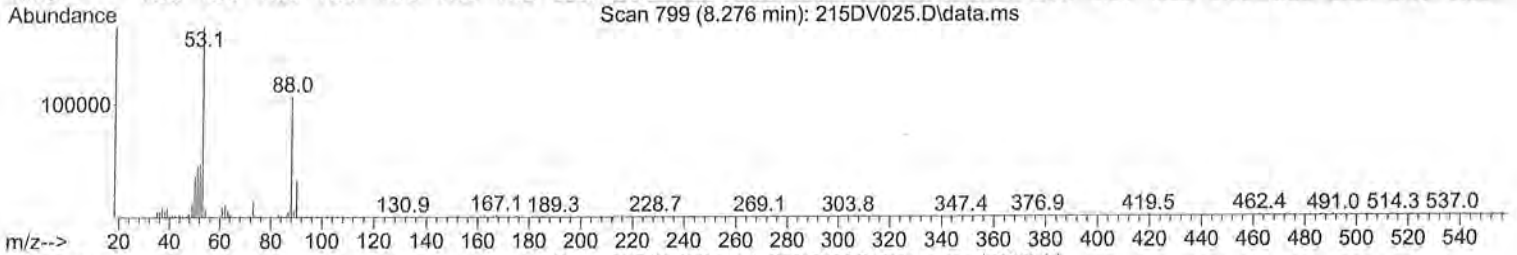
Instrument ID:	OVGCMS-5
Sequence/Batch ID:	AA66116/1D27020
Data File Prefix:	215DV
Date and Time Range of MIs:	04/28/21 0953
Reviewer Print Name:	Neil Christians
Reviewer Signature:	
Date of Review:	4/28/21

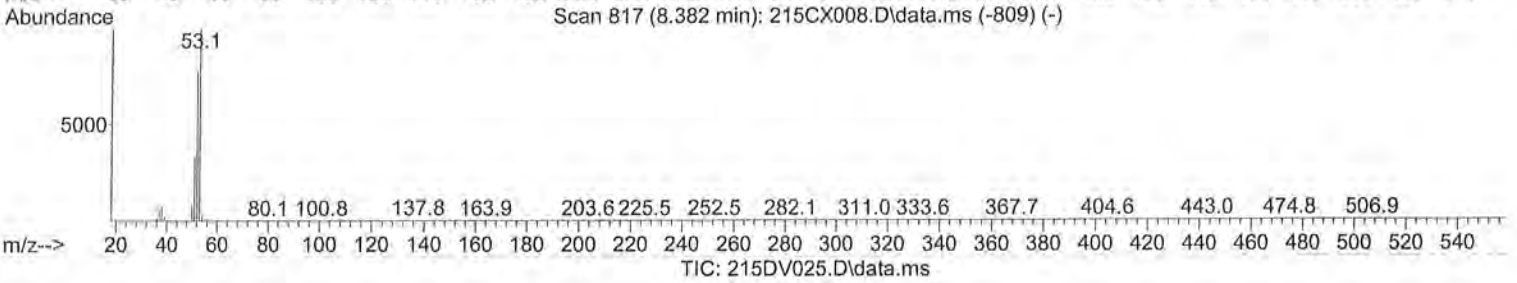
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV025.D
Acq On : 27 Apr 2021 6:46 pm
Operator : kkw
Sample : 1D27020-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 09:52:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration







TIC: 215DV025.D\data.ms

(24) Acrylonitrile

8.276min (-0.106) 204.54 ug/L

response 481427

Ion	Exp%	Act%
53.10	100.00	100.00
52.10	78.70	22.75#
38.10	6.30	4.07#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

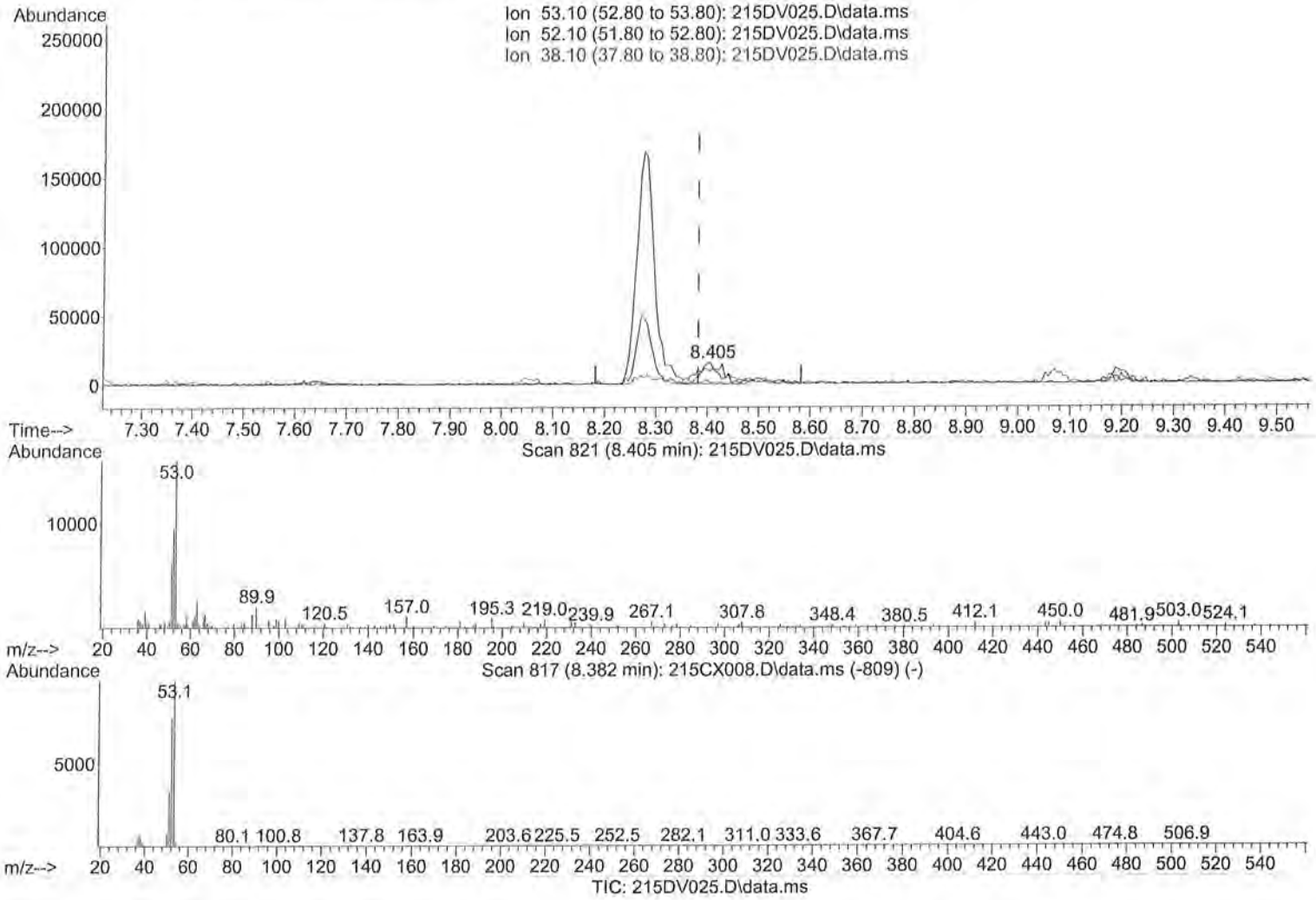
Review by/Date KJ 04/28/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV025.D
Acq On : 27 Apr 2021 6:46 pm
Operator : kkw
Sample : 1D27020-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 09:52:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



TIC: 215DV025.D\data.ms

(24) Acrylonitrile

8.405min (+ 0.023) 28.27 ug/L m

response 58301

Ion	Exp%	Act%
53.10	100.00	100.00
52.10	78.70	187.82#
38.10	6.30	33.61#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date W 04/28/21

Review by/Date:

Sequence Name: C:\MSDCHEM\1\SEQUENCE\215DV.S
Comment:
Operator: kkw
Data Path: C:\msdchem\1\DATA\042721\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample	Name/Misc Info		
1)	Sample	1	215DV001	8260S	rinse
2)	Sample	2	215DV002	8260S	CCV1
3)	Sample	3	215DV003	8260S	BS1
4)	Sample	4	215DV004	8260S	RINSE
5)	Sample	5	215DV005	8260S	BLK1
6)	Sample	6	215DV006	8260S	AE03392-01
7)	Sample	7	215DV007	8260S	AE03392-02
8)	Sample	8	215DV008	8260S	AE02766-03RE1@10X
9)	Sample	9	215DV009	8260S	AE02766-06RE1@50X
10)	Sample	10	215DV010	8260S	AE02766-08RE1
11)	Sample	11	215DV011	8260S	AE02766-16RE1@5X
12)	Sample	12	215DV012	8260S	AE03377-11RE1@2.5X Benzene from Prev run
13)	Sample	13	215DV013	8260S	AE03318-01@500,000X
14)	Sample	14	215DV014	8260S	AE03396-01RE1@5X
15)	Sample	15	215DV015	8260S	AE03318-02@500,000X
16)	Sample	16	215DV016	8260S	AE03396-06
17)	Sample	17	215DV017	8260S	AE03396-07
18)	Sample	18	215DV018	8260S	AE03396-08
19)	Sample	19	215DV019	8260S	AE03396-09@2X
20)	Sample	20	215DV020	8260S	AE03396-10@10X
21)	Sample	21	215DV021	8260S	AE03398-01RE1
22)	Sample	22	215DV022	8260S	AE03301-03
23)	Sample	23	215DV023	8260S	AE03301-04
24)	Sample	24	215DV024	8260S	1D27020-MS1
25)	Sample	24	215DV025	8260S	1D27020-MSD1
26)	Sample	25	215DV026	8260S	RINSE
27)	Sample	26	215DV027	8260S	AA66125-CCV1
28)	Sample	27	215DV028	8260S	1D27045-BS1
29)	Sample	28	215DV029	8260S	1D27045-MS1
30)	Sample	28	215DV030	8260S	1D27045-MSD1
31)	Sample	29	215DV031	8260S	RINSE
32)	Sample	30	215DV032	8260S	1D27045-BLK1
33)	Sample	31	215DV033	8260S	AA66125-CRL1
34)	Sample	32	215DV034	8260S	AE03301-01
35)	Sample	33	215DV035	8260S	AE03301-02
36)	Sample	34	215DV036	8260S	AE03301-05
37)	Sample	35	215DV037	8260S	AE03301-06
38)	Sample	36	215DV038	8260S	AE03301-07
39)	Sample	37	215DV039	8260S	AE02965-01
40)	Sample	38	215DV040	8260S	AE02965-02
41)	Sample	39	215DV041	8260S	AE03428-01
42)	Sample	40	215DV042	8260S	AE02997-01
43)	Sample	41	215DV043	8260S	AE03430-01

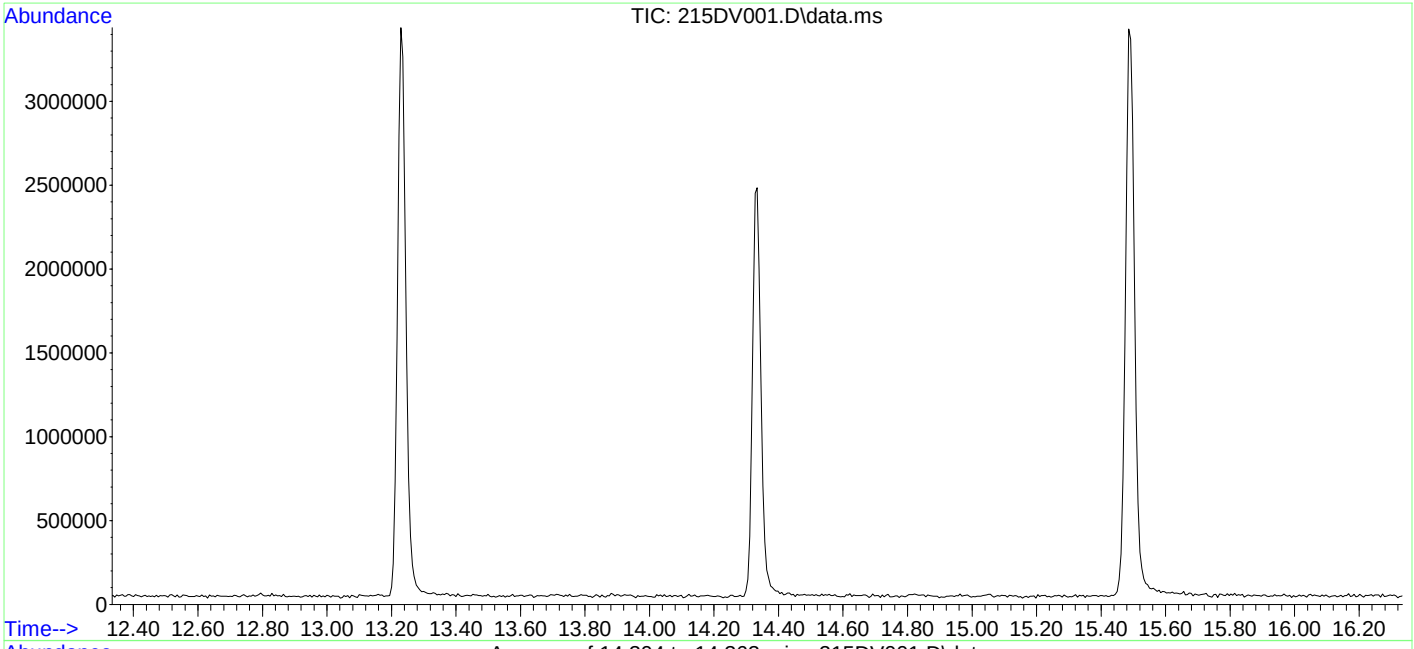
Sequence Name: C:\MSDCHEM\1\SEQUENCE\215DV.S

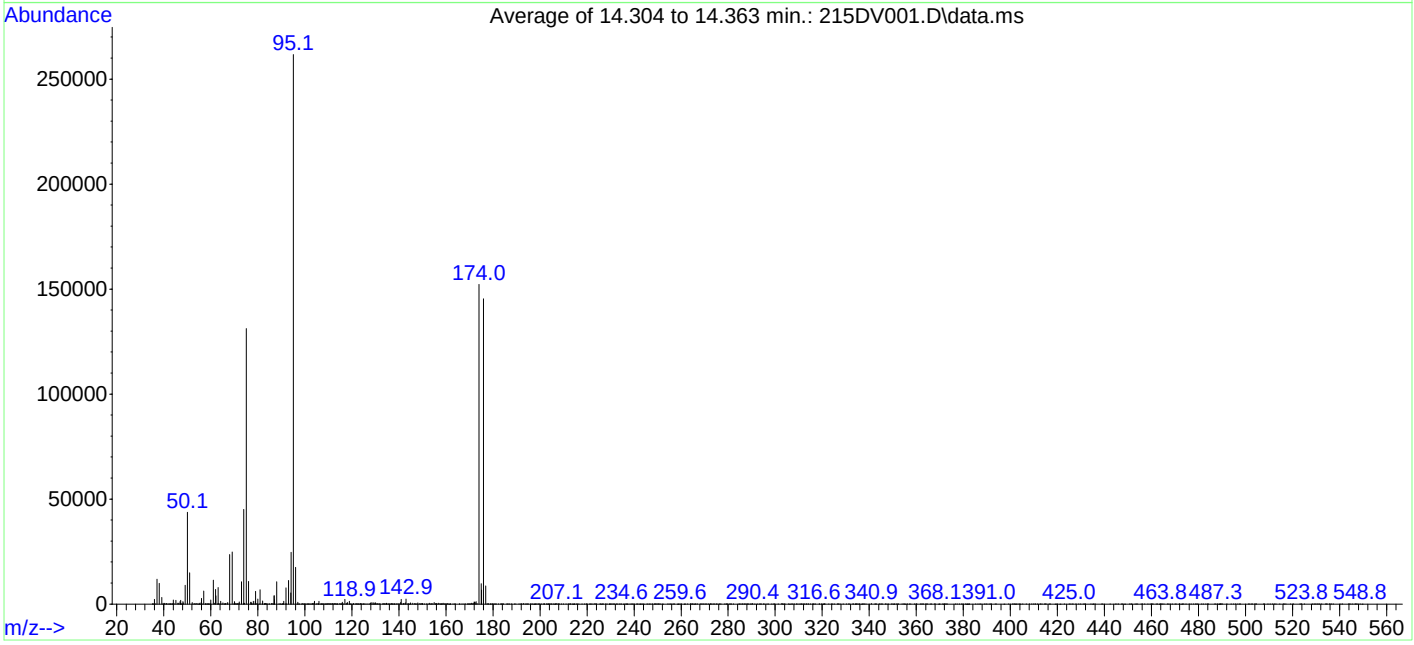
	Line	Type	Vial	DataFile	Method	Sample Name
44)		Sample	42	215DV044	8260S	AE03430-02
45)		Sample	43	215DV045	8260S	AE03430-03
46)		Sample	44	215DV046	8260S	AE03430-04
47)		Sample	45	215DV047	8260S	AE03430-05
48)		Sample	46	215DV048	8260S	AE03517-01
49)		Sample	47	215DV049	8260S	AE03518-01

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV001.D
Acq On : 27 Apr 2021 7:40 am
Operator : kkw
Sample : rinse
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\032921W.M
Title : ENCO SOP VGCMS05; Element Cal 2103052
Last Update : Mon Mar 29 13:47:27 2021





Spectrum Information: Average of 14.304 to 14.363 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	171.9	261629	PASS
96	95	5	9	6.7	17500	PASS
173	174	0.00	2	0.7	1123	PASS
174	95	50	200	58.2	152171	PASS
175	174	5	9	6.4	9770	PASS
176	174	95	105	95.5	145389	PASS
177	176	5	10	6.0	8662	PASS

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV002.D
Acq On : 27 Apr 2021 8:07 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 27 11:40:34 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1041773	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2145571	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1346556	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1209551	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	607301	56.14	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 112.28%				
52) D8-Toluene	11.778	98	2700291	57.38	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 114.76%				
73) Bromofluorobenzene	14.328	95	1243429	52.93	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.86%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	637704	50.98	ug/L		94
3) Chloromethane	4.404	50	471792	54.22	ug/L		99
4) Vinyl Chloride	4.580	62	570363	54.44	ug/L		92
5) Bromomethane	5.233	94	267245	62.74	ug/L		99
6) Chloroethane	5.468	64	320088	54.47	ug/L		98
7) Trichlorofluoromethane	5.709	101	832861	55.45	ug/L		99
8) Diethyl ether	6.179	59	303266	49.31	ug/L		98
9) 1,1-Dichloroethene	6.531	96	373645	44.13	ug/L		87
10) Trichlorotrifluoroethane	6.566	151	305081	44.90	ug/L		92
11) Acrolein	7.013	56	698876	513.21	ug/L		97
12) Iodomethane	6.778	142	2824368	254.80	ug/L		100
13) Carbon Disulfide	6.625	76	7288527	273.23	ug/L		100
14) 3-chloropropene	7.189	41	568107	54.63	ug/L		91
15) Acetone	7.389	43	329700	231.07	ug/L		95
16) Methylene Chloride	7.336	84	507804	52.44	ug/L		94
17) Methyl Acetate	7.518	43	188031	51.73	ug/L	#	90
18) t-1,2-Dichloroethene	7.548	96	500434	50.34	ug/L		98
19) Methyl tert-butyl ether	7.630	73	1158639	51.46	ug/L		98
20) Acetonitrile	8.047	41	480190	482.52	ug/L		98
21) Isopropyl ether	8.047	45	1240439	54.54	ug/L		95
22) Chloroprene	8.276	88	475526	52.43	ug/L		95
23) 1,1-Dichloroethane	8.311	63	900538	53.84	ug/L		98
24) Acrylonitrile	8.382	53	1222522	504.15	ug/L		100
25) Vinyl Acetate	8.535	43	4069703	274.46	ug/L		97
26) c-1,2-Dichloroethene	8.946	96	563107	50.10	ug/L		93
27) 2,2-Dichloropropane	9.075	77	872644	52.44	ug/L		99
28) Bromochloromethane	9.181	128	253146	48.21	ug/L		100
29) Cyclohexane	9.193	56	835747	53.11	ug/L		96
30) Chloroform	9.222	83	1003282	49.15	ug/L		96
32) Dibromofluoromethane	9.428	113	607301	56.14	ug/L	#	89
33) 2-Butanone	9.545	72	220506	244.98	ug/L		81
34) 1,1,1-Trichloroethane	9.487	97	930919	53.50	ug/L		98
35) 1,1-Dichloropropene	9.604	75	779013	52.14	ug/L		99
36) Propionitrile	9.892	54	421291	466.06	ug/L		86
37) Methacrylonitrile	9.910	41	2353261	523.45	ug/L		99
38) Isobutyl Alcohol	9.898	43	485752	950.67	ug/L		92
40) Carbon Tetrachloride	9.410	117	845921	60.18	ug/L	#	83
41) Benzene	9.874	78	2227255	50.71	ug/L		99
42) 1,2-Dichloroethane	10.086	62	744030	49.45	ug/L		97
43) Trichloroethene	10.450	130	562652	51.21	ug/L		96
44) Methyl cyclohexane	10.450	83	1015515	46.95	ug/L		96
45) Dibromomethane	10.903	93	336750	53.04	ug/L		95
46) 1,2-Dichloropropane	10.985	63	550351	54.21	ug/L		97
47) Bromodichloromethane	11.014	83	747401	52.80	ug/L		98
48) Methyl Methacrylate	11.079	69	289520	50.98	ug/L		96
49) 1,4-Dioxane	11.190	88	20039	420.26	ug/L	#	62
50) 2-Chloroethyl vinyl ether	11.484	63	1179896	215.22	ug/L	#	94
51) C-1,3-Dichloropropene	11.608	75	994053	52.70	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV002.D
Acq On : 27 Apr 2021 8:07 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 27 11:40:34 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

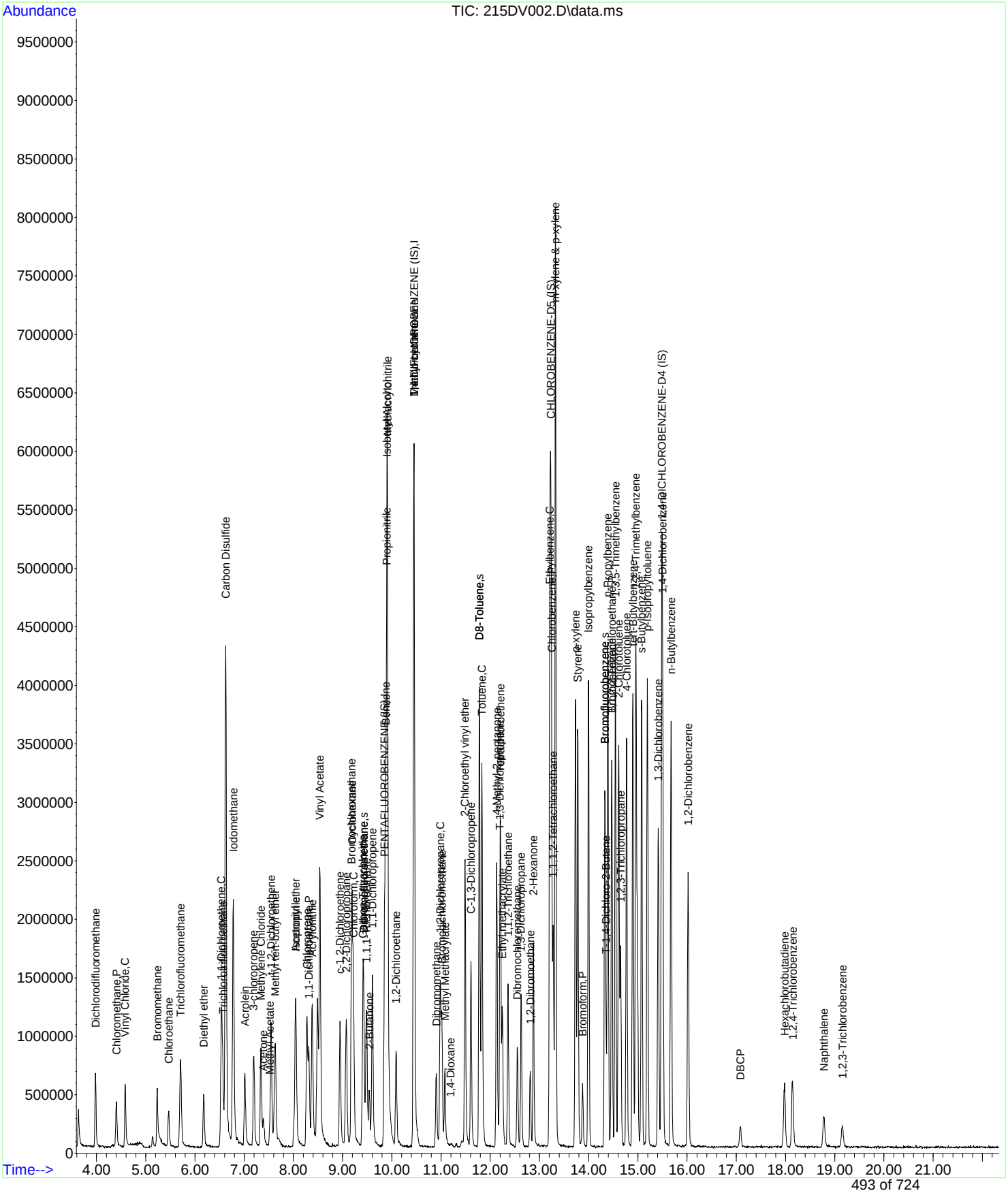
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2700291	57.38	ug/L		96
54) 4-Methyl-2-pentanone	12.131	100	301477	240.81	ug/L		90
56) Toluene	11.831	92	1550821	52.56	ug/L		98
57) T-1,3-Dichloropropene	12.195	75	790653	48.40	ug/L		98
58) Tetrachloroethene	12.207	164	414505	49.25	ug/L		97
59) Ethyl methacrylate	12.242	69	604956	50.50	ug/L		99
60) 1,1,2-Trichloroethane	12.360	97	470114	48.87	ug/L		96
61) Dibromochloromethane	12.548	129	475356	46.00	ug/L		97
62) 1,3-Dichloropropane	12.624	76	825790	48.28	ug/L		96
63) 1,2-Dibromoethane	12.812	107	465289	47.50	ug/L		97
64) 2-Hexanone	12.877	43	1030788	250.10	ug/L		97
65) Ethylbenzene	13.206	106	908687	49.71	ug/L		95
66) Chlorobenzene	13.247	112	1576226	50.08	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	533923	50.20	ug/L		94
68) m-xylene & p-xylene	13.323	106	2381784	100.48	ug/L		100
69) o-xylene	13.735	106	1158414	51.68	ug/L		95
70) Styrene	13.776	104	1944914	53.66	ug/L		99
71) Bromoform	13.876	173	229438	44.18	ug/L		89
72) Isopropylbenzene	13.993	105	2959074	52.27	ug/L		99
74) Bromofluorobenzene	14.328	95	1243429	52.93	ug/L	#	82
75) n-Propylbenzene	14.387	91	3680142	50.76	ug/L		100
76) 1,1,2,2-Tetrachloroethane	14.469	83	626154	48.42	ug/L		94
77) 1,2,3-Trichloropropane	14.651	61	122418	50.73	ug/L		89
78) T-1,4-Dichloro-2-Butene	14.352	53	196305	44.88	ug/L	#	97
80) Bromobenzene	14.469	156	607229	47.08	ug/L		94
81) 1,2,4-Trimethylbenzene	14.957	105	2777008	50.98	ug/L		98
82) 2-Chlorotoluene	14.610	91	2234954	51.46	ug/L		99
83) 4-Chlorotoluene	14.769	91	2387525	51.56	ug/L		99
84) tert-Butylbenzene	14.898	119	2151819	49.45	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	2672689	49.84	ug/L		98
86) p-Isopropyltoluene	15.192	119	2730261	47.50	ug/L		99
87) s-Butylbenzene	15.074	105	3177885	47.59	ug/L		100
88) 1,3-Dichlorobenzene	15.415	146	1260826	46.60	ug/L		98
89) 1,4-Dichlorobenzene	15.503	146	1265505	46.53	ug/L		94
90) n-Butylbenzene	15.674	91	2534228	50.25	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	1135333	48.59	ug/L		100
92) DBCP	17.084	157	64413	41.01	ug/L		95
93) Hexachlorobutadiene	17.983	225	108309	41.87	ug/L		89
94) 1,2,4-Trichlorobenzene	18.147	180	239678	43.86	ug/L		99
95) Naphthalene	18.782	128	389434	40.81	ug/L		98
96) 1,2,3-Trichlorobenzene	19.158	180	85022	40.33	ug/L	#	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV002.D
Acq On : 27 Apr 2021 8:07 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 27 11:40:34 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV003.D
Acq On : 27 Apr 2021 8:35 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 27 09:07:48 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1063082	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2184115	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1349867	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1183150	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	622216	56.36	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 112.72%				
52) D8-Toluene	11.778	98	2788993	58.22	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 116.44%				
73) Bromofluorobenzene	14.328	95	1266039	53.76	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.52%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	234564	18.38	ug/L		93
3) Chloromethane	4.404	50	213598	29.62	ug/L		99
4) Vinyl Chloride	4.586	62	221311	23.33	ug/L		91
5) Bromomethane	5.227	94	72273	19.45	ug/L		96
6) Chloroethane	5.462	64	138810	23.15	ug/L		98
7) Trichlorofluoromethane	5.702	101	335551	21.89	ug/L		98
8) Diethyl ether	6.173	59	151353	27.87	ug/L		96
9) 1,1-Dichloroethene	6.537	96	179621	20.79	ug/L		88
10) Trichlorotrifluoroethane	6.560	151	120402	17.36	ug/L		98
11) Acrolein	7.019	56	92640	98.03	ug/L		96
12) Iodomethane	6.784	142	289370	25.58	ug/L		96
13) Carbon Disulfide	6.625	76	611006	22.45	ug/L		98
14) 3-chloropropene	7.195	41	287356	32.23	ug/L	#	83
15) Acetone	7.395	43	146945	119.76	ug/L		97
16) Methylene Chloride	7.342	84	222889	25.11	ug/L		85
17) Methyl Acetate	7.530	43	97883	32.68	ug/L	#	89
18) t-1,2-Dichloroethene	7.547	96	228304	24.57	ug/L		93
19) Methyl tert-butyl ether	7.630	73	506533	25.68	ug/L		97
20) Acetonitrile	8.047	41	116256	152.26	ug/L	#	84
21) Isopropyl ether	8.053	45	566183	29.85	ug/L		96
22) Chloroprene	8.276	88	204698	25.49	ug/L		94
23) 1,1-Dichloroethane	8.305	63	386730	25.89	ug/L		95
24) Acrylonitrile	8.393	53	52217	29.14	ug/L	#	81
25) Vinyl Acetate	8.546	43	285606	27.05	ug/L		95
26) c-1,2-Dichloroethene	8.946	96	239931	23.24	ug/L		91
27) 2,2-Dichloropropane	9.075	77	350058	22.60	ug/L		98
28) Bromochloromethane	9.187	128	102710	19.17	ug/L		89
29) Cyclohexane	9.193	56	366405	26.65	ug/L		97
30) Chloroform	9.222	83	428939	20.59	ug/L		99
32) Dibromofluoromethane	9.428	113	622216	56.36	ug/L	#	90
33) 2-Butanone	9.545	72	66886	88.77	ug/L	#	31
34) 1,1,1-Trichloroethane	9.486	97	371233	20.91	ug/L		98
35) 1,1-Dichloropropene	9.604	75	335233	23.93	ug/L		98
36) Propionitrile	9.909	54	23576	36.13	ug/L	#	1
37) Methacrylonitrile	9.909	41	168238	48.74	ug/L	#	68
38) Isobutyl Alcohol	9.903	43	188602	432.65	ug/L	#	68
40) Carbon Tetrachloride	9.416	117	343244	23.99	ug/L	#	71
41) Benzene	9.874	78	946872	21.18	ug/L		98
42) 1,2-Dichloroethane	10.086	62	314025	20.50	ug/L		95
43) Trichloroethene	10.456	130	226257	20.23	ug/L	#	78
44) Methyl cyclohexane	10.456	83	445604	20.24	ug/L		95
45) Dibromomethane	10.902	93	135815	21.01	ug/L		91
46) 1,2-Dichloropropane	10.985	63	234397	24.88	ug/L		95
47) Bromodichloromethane	11.014	83	307551	21.35	ug/L		98
48) Methyl Methacrylate	11.084	69	108936	22.03	ug/L		95
49) 1,4-Dioxane	11.196	88	28813	568.38	ug/L	#	85
50) 2-Chloroethyl vinyl ether	11.490	63	453355	88.60	ug/L	#	92
51) C-1,3-Dichloropropene	11.613	75	373450	20.71	ug/L		100

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV003.D
Acq On : 27 Apr 2021 8:35 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 27 09:07:48 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

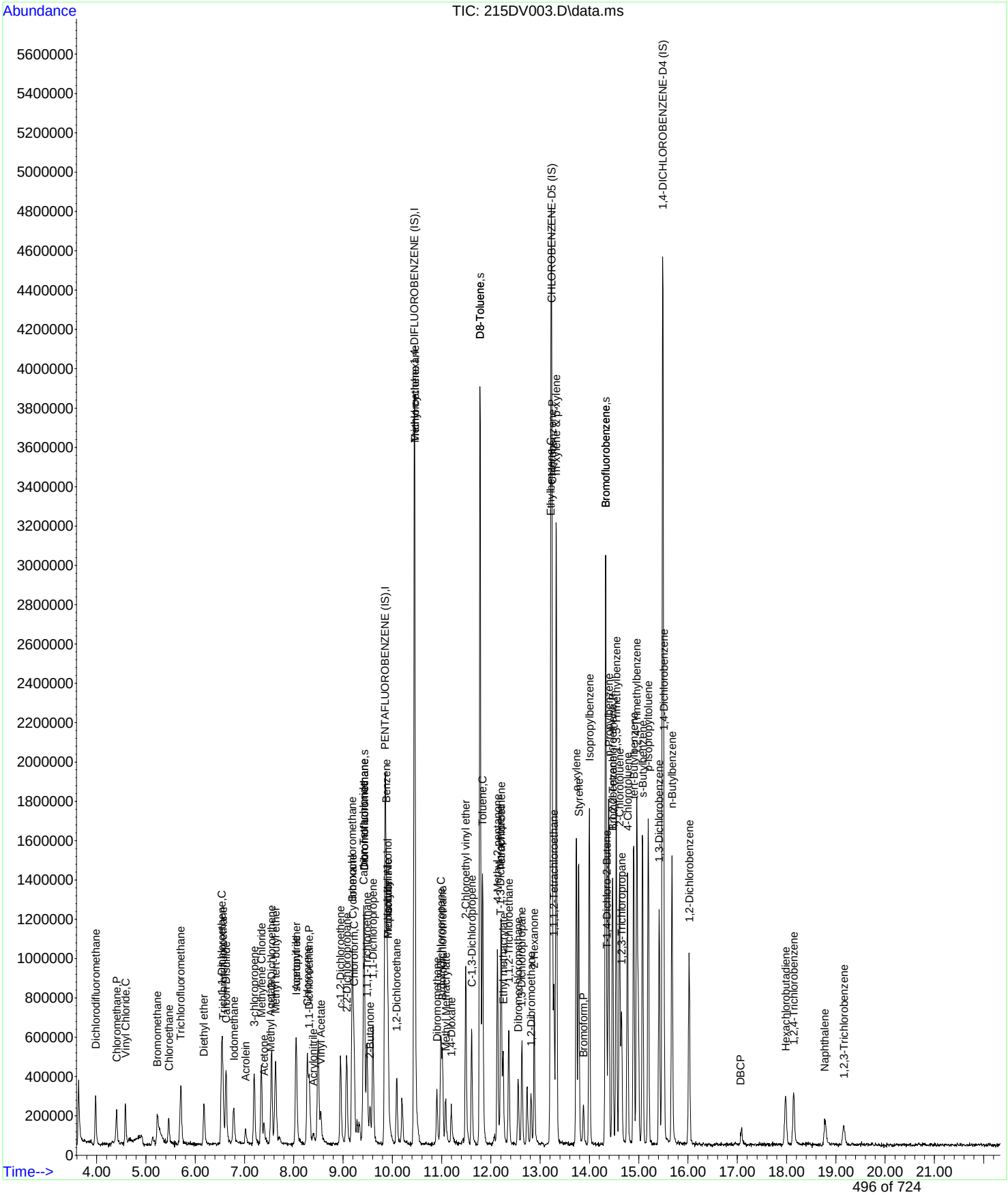
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2788993	58.22	ug/L		96
54) 4-Methyl-2-pentanone	12.130	100	134511	105.55	ug/L		94
56) Toluene	11.831	92	616652	20.85	ug/L		93
57) T-1,3-Dichloropropene	12.195	75	350170	21.38	ug/L		99
58) Tetrachloroethene	12.207	164	166379	19.72	ug/L		91
59) Ethyl methacrylate	12.248	69	251975	22.83	ug/L		99
60) 1,1,2-Trichloroethane	12.359	97	206071	21.37	ug/L		97
61) Dibromochloromethane	12.553	129	196802	19.00	ug/L		95
62) 1,3-Dichloropropane	12.624	76	340056	19.83	ug/L		97
63) 1,2-Dibromoethane	12.812	107	202016	20.57	ug/L		94
64) 2-Hexanone	12.877	43	433106	117.01	ug/L		93
65) Ethylbenzene	13.211	106	370932	20.24	ug/L		98
66) Chlorobenzene	13.241	112	665230	21.08	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	215613	20.22	ug/L		97
68) m-xylene & p-xylene	13.323	106	951829	40.05	ug/L		98
69) o-xylene	13.734	106	469252	20.88	ug/L		99
70) Styrene	13.781	104	761829	20.97	ug/L		97
71) Bromoform	13.875	173	93593	17.98	ug/L		97
72) Isopropylbenzene	13.999	105	1222946	21.55	ug/L		99
74) Bromofluorobenzene	14.328	95	1266039	53.76	ug/L	#	78
75) n-Propylbenzene	14.392	91	1565358	21.54	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	262967	20.29	ug/L		96
77) 1,2,3-Trichloropropane	14.651	61	46952	19.41	ug/L		88
78) T-1,4-Dichloro-2-Butene	14.351	53	88035	20.08	ug/L	#	63
80) Bromobenzene	14.469	156	246202	19.52	ug/L		93
81) 1,2,4-Trimethylbenzene	14.957	105	1132150	21.97	ug/L		97
82) 2-Chlorotoluene	14.610	91	932352	21.95	ug/L		99
83) 4-Chlorotoluene	14.774	91	975834	23.11	ug/L		98
84) tert-Butylbenzene	14.898	119	882467	21.74	ug/L		98
85) 1,3,5-Trimethylbenzene	14.545	105	1063275	21.29	ug/L		99
86) p-Isopropyltoluene	15.192	119	1111191	19.76	ug/L		98
87) s-Butylbenzene	15.080	105	1317141	20.16	ug/L		98
88) 1,3-Dichlorobenzene	15.415	146	507796	19.19	ug/L		93
89) 1,4-Dichlorobenzene	15.509	146	560513	21.07	ug/L	#	84
90) n-Butylbenzene	15.673	91	1026038	22.30	ug/L		98
91) 1,2-Dichlorobenzene	16.026	146	463829	21.21	ug/L		99
92) DBCP	17.066	157	29658	20.80	ug/L		100
93) Hexachlorobutadiene	17.982	225	55535	22.80	ug/L		93
94) 1,2,4-Trichlorobenzene	18.141	180	115082	25.07	ug/L		95
95) Naphthalene	18.770	128	196217	25.99	ug/L		98
96) 1,2,3-Trichlorobenzene	19.163	180	47871	27.17	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV003.D
Acq On : 27 Apr 2021 8:35 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 27 09:07:48 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV005.D
Acq On : 27 Apr 2021 9:31 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 27 12:55:00 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.851	168	1060505	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2109466	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1261619	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1139715	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	608353	55.24 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 110.48%		
52) D8-Toluene	11.778	98	2498897	54.01 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 108.02%		
73) Bromofluorobenzene	14.328	95	1135193	51.57 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 103.14%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.987	85	1118	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.613	96	1145	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.613	76	4575	N.D.	
14) 3-chloropropene	0.000		0	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.348	84	1011	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	7.553	73	1029	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.094	45	1126	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.582	43	1608	N.D.	
26) c-1,2-Dichloroethene	8.893	96	1095	N.D.	
27) 2,2-Dichloropropane	9.216	77	1061	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	9.222	83	1543	N.D.	
32) Dibromofluoromethane	9.428	113	608614	55.27 ug/L #	93
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.551	75	1201	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.357	117	1392	N.D.	
41) Benzene	9.892	78	3462	N.D.	
42) 1,2-Dichloroethane	10.103	62	1185	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.844	93	1063	N.D.	
46) 1,2-Dichloropropane	10.850	63	1424	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV005.D
Acq On : 27 Apr 2021 9:31 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 27 12:55:00 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

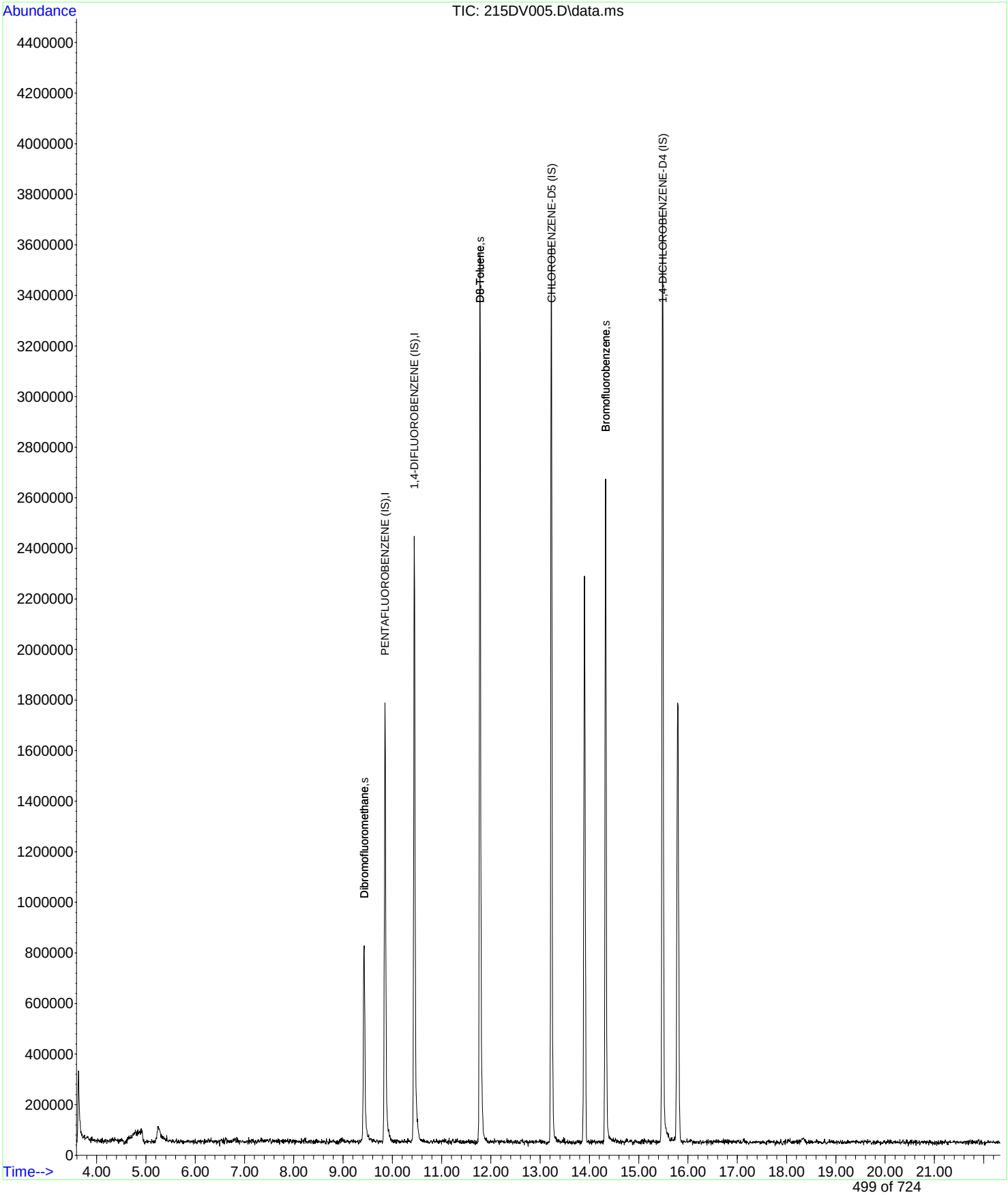
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2498897	54.01 ug/L	92
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.766	92	1256	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.172	69	1034	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.694	107	1357	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.241	112	2607	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.899	106	2408	N.D.	
70) Styrene	13.811	104	1010	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.063	105	1157	N.D.	
74) Bromofluorobenzene	14.328	95	1136072	51.61 ug/L #	81
75) n-Propylbenzene	14.328	91	6847	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	15.086	105	2710	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.857	119	1101	N.D.	
85) 1,3,5-Trimethylbenzene	14.563	105	1590	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.086	105	2710	N.D.	
88) 1,3-Dichlorobenzene	15.415	146	1145	N.D.	
89) 1,4-Dichlorobenzene	15.474	146	2266	N.D.	
90) n-Butylbenzene	15.767	91	2703	N.D.	
91) 1,2-Dichlorobenzene	16.026	146	1538	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D. d	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV005.D
Acq On : 27 Apr 2021 9:31 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 27 12:55:00 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV006.D
Acq On : 27 Apr 2021 9:59 am
Operator : kkw
Sample : AE03392-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 27 12:57:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.845	168	960905	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	1965206	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1225668	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1096514	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	562825	56.41 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 112.82%		
52) D8-Toluene	11.778	98	2421692	56.19 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 112.38%		
73) Bromofluorobenzene	14.328	95	1085040	50.74 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.48%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.016	85	1177	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	6.461	96	1243	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.619	76	4314	N.D.	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.354	84	1077	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	7.624	73	1187	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.988	45	1430	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.435	63	1347	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.576	43	1498	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D. d	
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.428	113	562897	56.41 ug/L #	89
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.357	117	1407	N.D.	
41) Benzene	9.863	78	3460	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	0.000		0	N.D. d	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.867	93	1073	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.584	75	1127	N.D.	

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV006.D
Acq On : 27 Apr 2021 9:59 am
Operator : kkw
Sample : AE03392-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

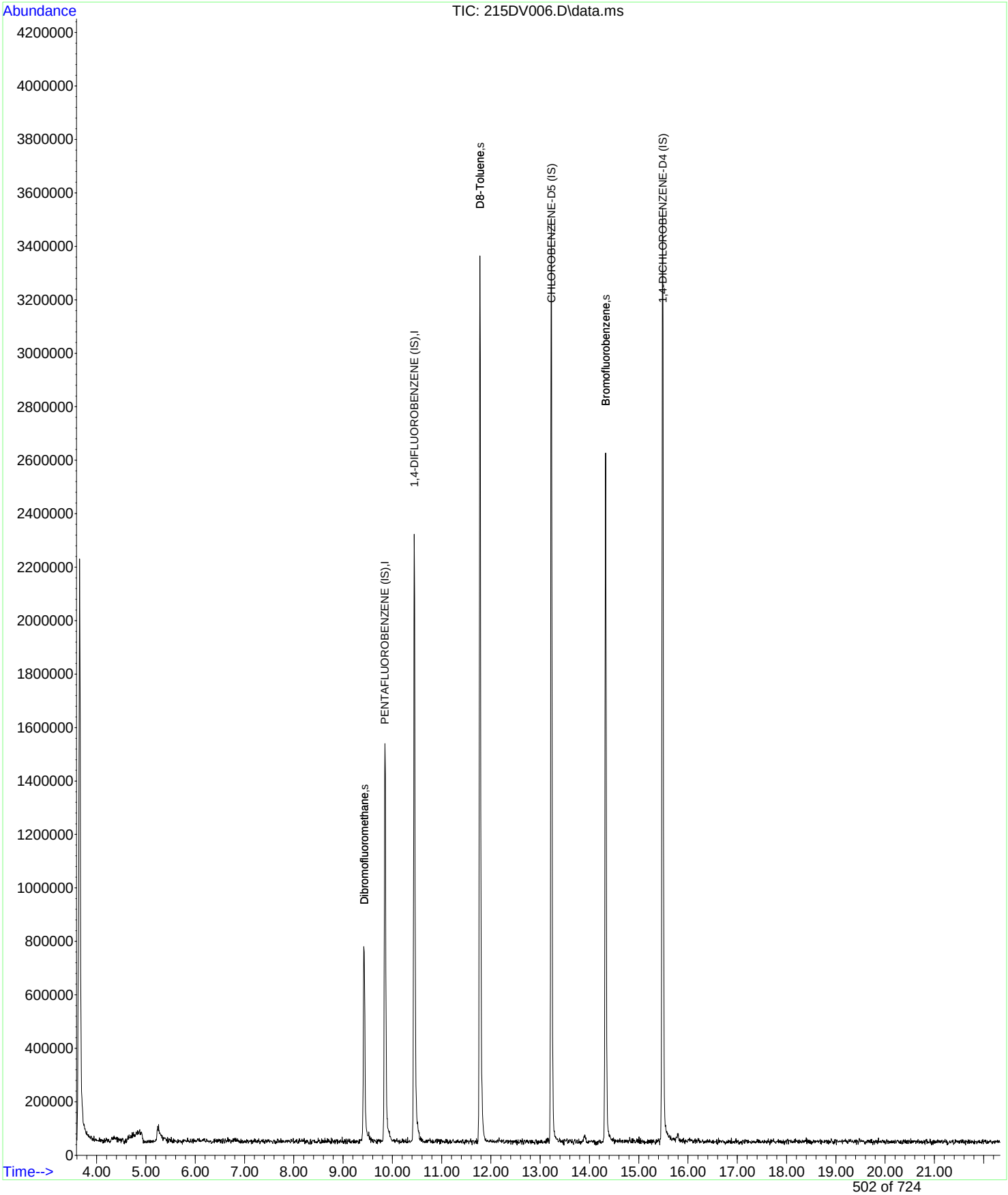
Quant Time: Apr 27 12:57:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2421692	56.19 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.760	92	1829	N.D.	
57) T-1,3-Dichloropropene	12.248	75	1509	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.324	97	1031	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.595	76	1055	N.D.	
63) 1,2-Dibromoethane	12.824	107	1108	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.005	105	1081	N.D.	
74) Bromofluorobenzene	14.328	95	1085040	50.74 ug/L	84
75) n-Propylbenzene	14.357	91	1240	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.322	83	1331	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.322	156	1068	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	1058	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.910	119	2231	N.D.	
85) 1,3,5-Trimethylbenzene	14.581	105	1497	N.D.	
86) p-Isopropyltoluene	15.192	119	1238	N.D.	
87) s-Butylbenzene	15.021	105	1110	N.D.	
88) 1,3-Dichlorobenzene	15.409	146	1318	N.D.	
89) 1,4-Dichlorobenzene	15.486	146	1092	N.D.	
90) n-Butylbenzene	15.497	91	1128	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV006.D
Acq On : 27 Apr 2021 9:59 am
Operator : kkw
Sample : AE03392-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 27 12:57:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV008.D
Acq On : 27 Apr 2021 10:54 am
Operator : kkw
Sample : AE02766-03RE1@10X
Misc : 10
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 27 13:00:09 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1019636	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2060785	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1233818	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1105987	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	596096	56.30 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 112.60%		
52) D8-Toluene	11.778	98	2514306	55.63 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 111.26%		
73) Bromofluorobenzene	14.328	95	1115444	51.82 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 103.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	4.410	50	1000	N.D.	
4) Vinyl Chloride	4.574	62	39419	4.69 ug/L #	70
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	6.419	151	1105	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.778	142	2575	0.24 ug/L #	52
13) Carbon Disulfide	6.619	76	4486	N.D.	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.365	84	1244	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.023	45	1864	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.159	63	1047	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.552	43	1721	N.D.	
26) c-1,2-Dichloroethene	8.952	96	208327	21.22 ug/L	95
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.428	113	596379	56.33 ug/L #	89
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.386	117	1680	N.D.	
41) Benzene	9.886	78	2011	N.D.	
42) 1,2-Dichloroethane	9.992	62	1019	N.D.	
43) Trichloroethene	10.456	130	45868	4.35 ug/L #	18
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.944	93	1129	N.D.	
46) 1,2-Dichloropropane	10.944	63	1367	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.772	75	2167	N.D.	

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV008.D
Acq On : 27 Apr 2021 10:54 am
Operator : kkw
Sample : AE02766-03RE1@10X
Misc : 10
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 27 13:00:09 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

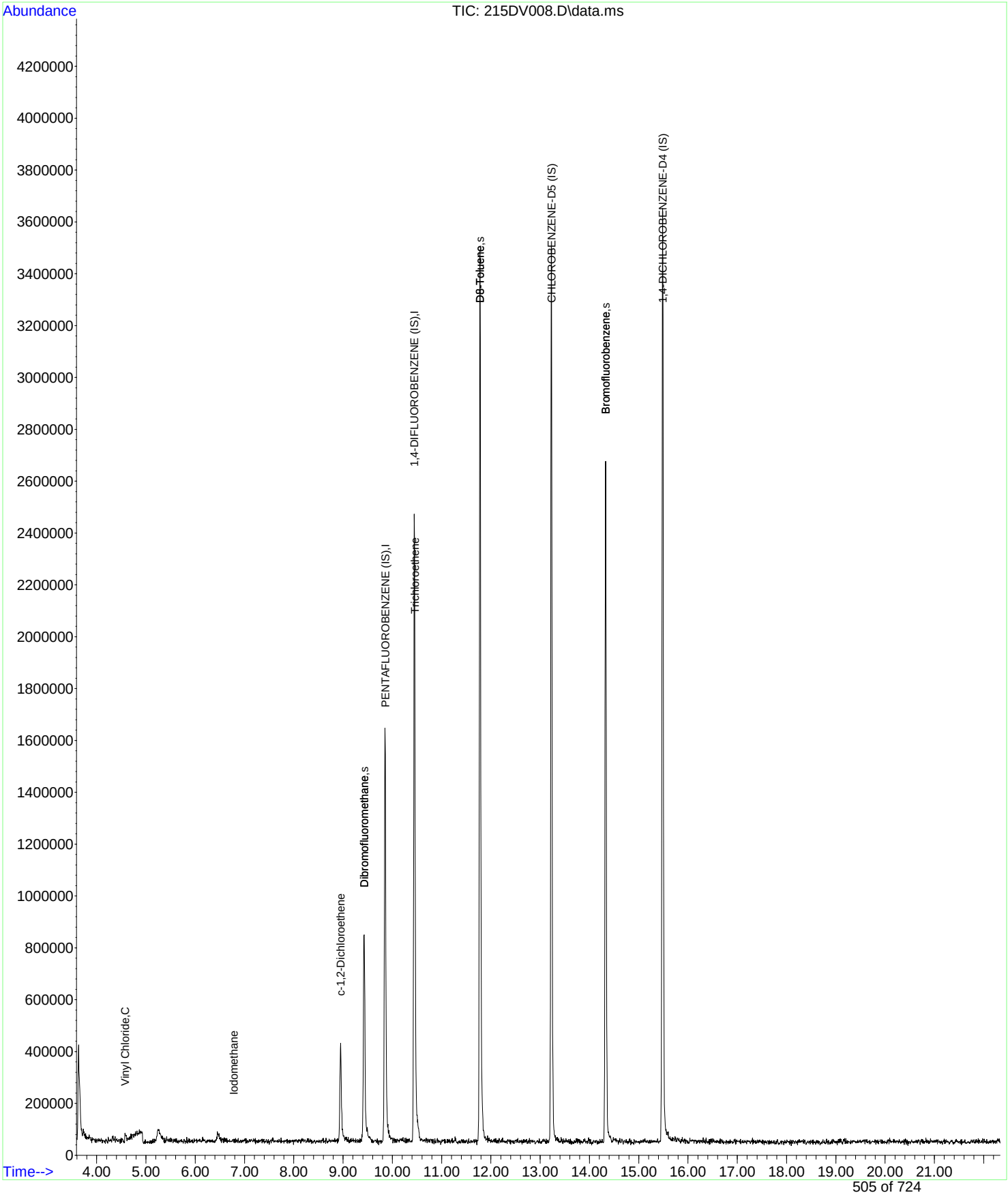
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2514306	55.63 ug/L #	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.778	92	2078	N.D.	
57) T-1,3-Dichloropropene	12.142	75	1092	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.330	69	1831	N.D.	
60) 1,1,2-Trichloroethane	12.307	97	1105	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.223	112	1380	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1115444	51.82 ug/L	85
75) n-Propylbenzene	14.328	91	1930	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.316	83	1397	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.474	146	2343	N.D.	
89) 1,4-Dichlorobenzene	15.474	146	2343	N.D.	
90) n-Butylbenzene	15.544	91	1064	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV008.D
Acq On : 27 Apr 2021 10:54 am
Operator : kkw
Sample : AE02766-03RE1@10X
Misc : 10
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 27 13:00:09 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV009.D
Acq On : 27 Apr 2021 11:22 am
Operator : kkw
Sample : AE02766-06RE1@50X
Misc : 50
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 27 13:01:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.851	168	1039264	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2040740	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1198082	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1099581	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.422	113	600949	55.69 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 111.38%		
52) D8-Toluene	11.778	98	2462076	55.01 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 110.02%		
73) Bromofluorobenzene	14.328	95	1127194	53.92 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.993	85	1260	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.586	62	10211	1.21 ug/L #	77
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.609	64	1104	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.778	142	1014	N.D.	
13) Carbon Disulfide	6.602	76	1392	N.D.	
14) 3-chloropropene	0.000		0	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	7.765	73	1230	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.953	45	1149	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.564	43	1332	N.D.	
26) c-1,2-Dichloroethene	8.946	96	313876	30.23 ug/L	98
27) 2,2-Dichloropropane	8.958	77	1245	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.134	56	2103	N.D.	
30) Chloroform	9.210	83	1360	N.D.	
32) Dibromofluoromethane	9.422	113	602146	55.80 ug/L #	91
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.457	75	1010	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.892	78	3729	N.D.	
42) 1,2-Dichloroethane	10.139	62	1640	N.D.	
43) Trichloroethene	10.456	130	293863	28.12 ug/L	92
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D. d	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.619	75	1061	N.D.	

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV009.D
Acq On : 27 Apr 2021 11:22 am
Operator : kkw
Sample : AE02766-06RE1@50X
Misc : 50
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 27 13:01:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

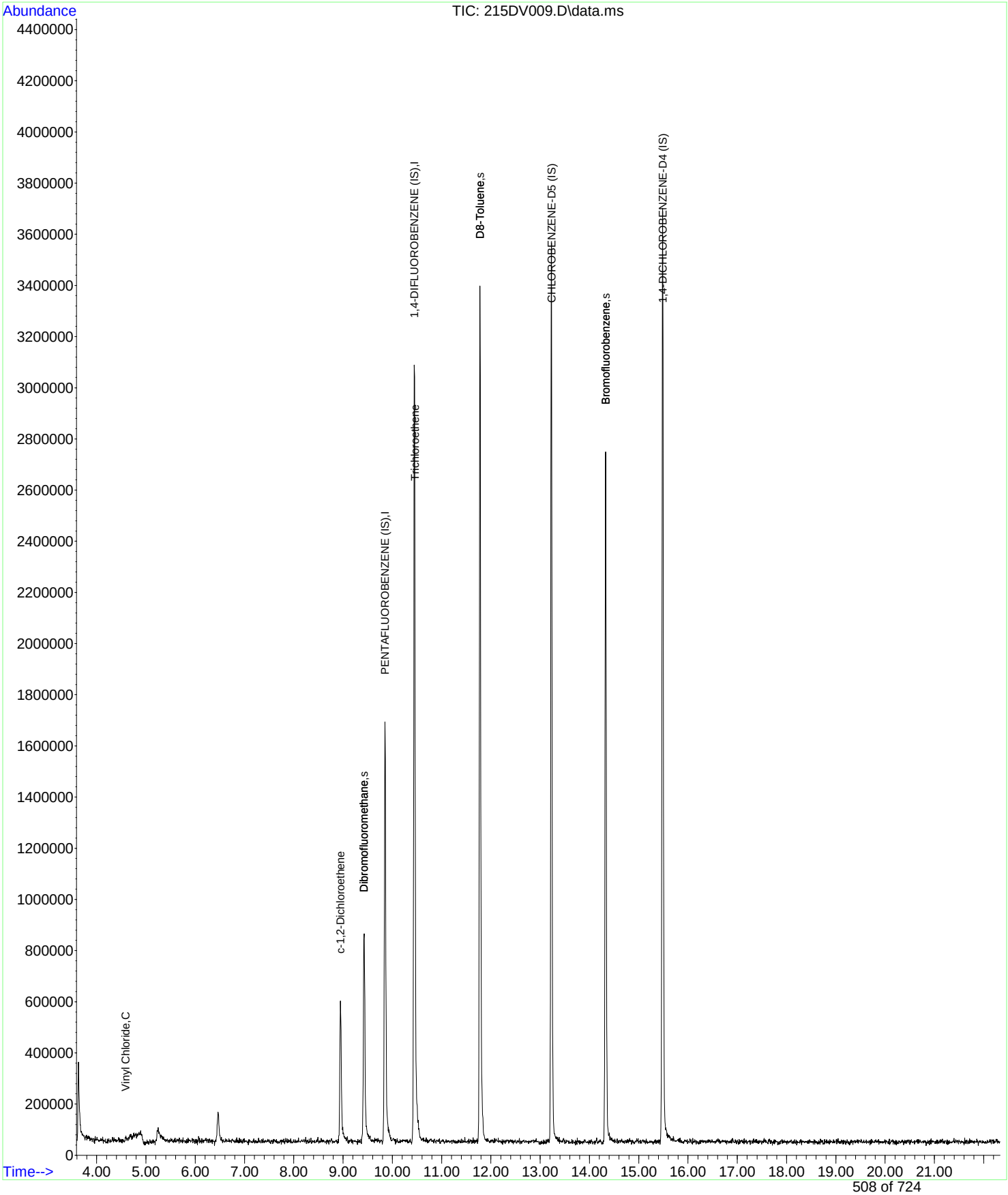
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2462076	55.01 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	1387	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.324	69	1444	N.D.	
60) 1,1,2-Trichloroethane	12.207	97	1098	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.595	76	1454	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.276	106	1521	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.276	106	1521	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.640	104	1010	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.958	105	1391	N.D.	
74) Bromofluorobenzene	14.328	95	1127194	53.92 ug/L	85
75) n-Propylbenzene	14.328	91	4551	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.310	83	2073	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.322	156	1089	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	1131	N.D.	
82) 2-Chlorotoluene	14.686	91	1309	N.D.	
83) 4-Chlorotoluene	14.798	91	1169	N.D.	
84) tert-Butylbenzene	14.833	119	1072	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.986	105	1111	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	1222	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	1222	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV009.D
Acq On : 27 Apr 2021 11:22 am
Operator : kkw
Sample : AE02766-06RE1@50X
Misc : 50
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 27 13:01:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV010.D
Acq On : 27 Apr 2021 11:50 am
Operator : kkw
Sample : AE02766-08RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 27 13:03:10 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1037274	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2121201	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1180790	50.00	ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1152935	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	611555	56.78	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 113.56%			
52) D8-Toluene	11.778	98	2513304	54.02	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 108.04%			
73) Bromofluorobenzene	14.328	95	1155848	56.10	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 112.20%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.004	85	1077	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	0.000		0	N.D. d		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D. d		
9) 1,1-Dichloroethene	6.496	96	1044	N.D.		
10) Trichlorotrifluoroethane	6.431	151	1189	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	6.784	142	1318	N.D.		
13) Carbon Disulfide	6.625	76	3077	N.D.		
14) 3-chloropropene	7.224	41	1001	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	7.518	84	1020	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	7.565	96	1037	N.D.		
19) Methyl tert-butyl ether	7.512	73	1126	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.041	45	1784	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.311	63	2532	N.D.		
24) Acrylonitrile	0.000		0	N.D. d		
25) Vinyl Acetate	8.693	43	1912	N.D.		
26) c-1,2-Dichloroethene	8.952	96	23102	2.51	ug/L #	72
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D. d		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.392	83	1234	N.D.		
32) Dibromofluoromethane	9.428	113	613012	56.91	ug/L #	90
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	0.000		0	N.D. d		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.351	117	1338	N.D.		
41) Benzene	9.904	78	5970	N.D.		
42) 1,2-Dichloroethane	10.139	62	1011	N.D.		
43) Trichloroethene	10.450	130	1590	N.D.		
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	10.949	63	1669	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d		
51) C-1,3-Dichloropropene	11.725	75	1033	N.D.		

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV010.D
Acq On : 27 Apr 2021 11:50 am
Operator : kkw
Sample : AE02766-08RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 27 13:03:10 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

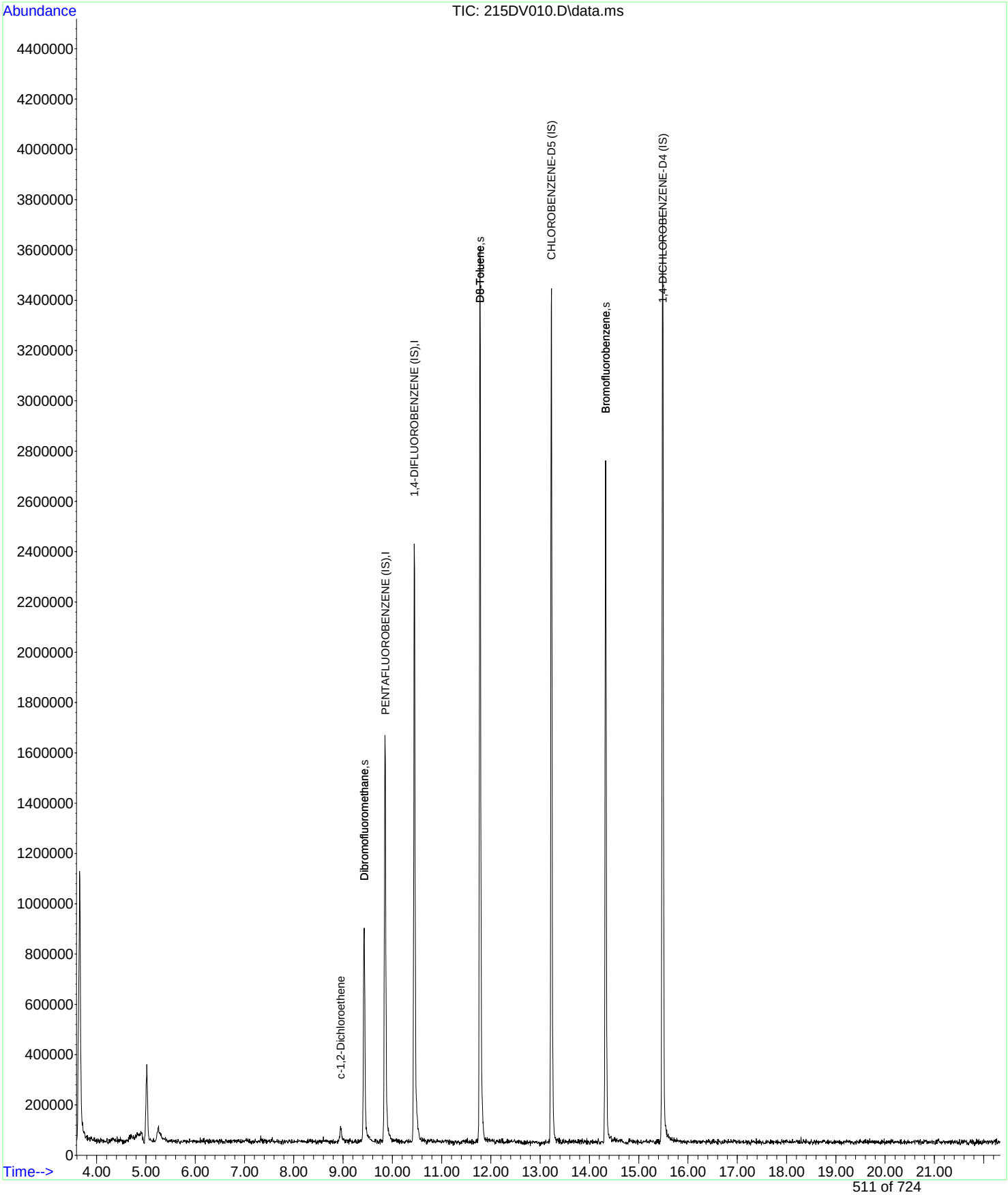
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2513304	54.02 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.760	92	1378	N.D.	
57) T-1,3-Dichloropropene	12.242	75	2282	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D. d	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.358	112	1118	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1155848	56.10 ug/L	85
75) n-Propylbenzene	14.381	91	1063	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.416	83	1046	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.533	156	1071	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	1239	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.816	91	1314	N.D.	
84) tert-Butylbenzene	14.921	119	1006	N.D.	
85) 1,3,5-Trimethylbenzene	14.498	105	1157	N.D.	
86) p-Isopropyltoluene	15.068	119	1200	N.D.	
87) s-Butylbenzene	14.974	105	1239	N.D.	
88) 1,3-Dichlorobenzene	15.491	146	1904	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	1904	N.D.	
90) n-Butylbenzene	15.497	91	1267	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV010.D
Acq On : 27 Apr 2021 11:50 am
Operator : kkw
Sample : AE02766-08RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 27 13:03:10 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV011.D
Acq On : 27 Apr 2021 12:18 pm
Operator : kkw
Sample : AE02766-16RE1@5X
Misc : 5
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 27 13:04:28 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.851	168	1065094	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2062369	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1252983	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1157187	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	591828	53.51 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 107.02%		
52) D8-Toluene	11.778	98	2565308	56.71 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.42%		
73) Bromofluorobenzene	14.328	95	1137097	52.01 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.02%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.910	85	1010	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.586	62	218809	23.05 ug/L	93
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	5.579	101	1233	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	6.490	96	1038	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.789	142	1179	N.D.	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	7.119	41	1138	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.453	96	1056	N.D.	
19) Methyl tert-butyl ether	7.577	73	1105	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.023	45	1397	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.317	63	96653	7.14 ug/L	95
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.499	43	1397	N.D.	
26) c-1,2-Dichloroethene	8.963	96	5889	0.63 ug/L #	50
27) 2,2-Dichloropropane	8.963	77	1140	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.275	56	1001	N.D.	
30) Chloroform	9.228	83	1824	N.D.	
32) Dibromofluoromethane	9.428	113	591828	53.51 ug/L #	86
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	9.598	75	2216	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.386	117	1065	N.D.	
41) Benzene	9.874	78	2804	N.D.	
42) 1,2-Dichloroethane	10.097	62	1469	N.D.	
43) Trichloroethene	10.450	130	1283	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	10.832	93	1000	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	10.844	83	1010	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV011.D
Acq On : 27 Apr 2021 12:18 pm
Operator : kkw
Sample : AE02766-16RE1@5X
Misc : 5
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 27 13:04:28 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

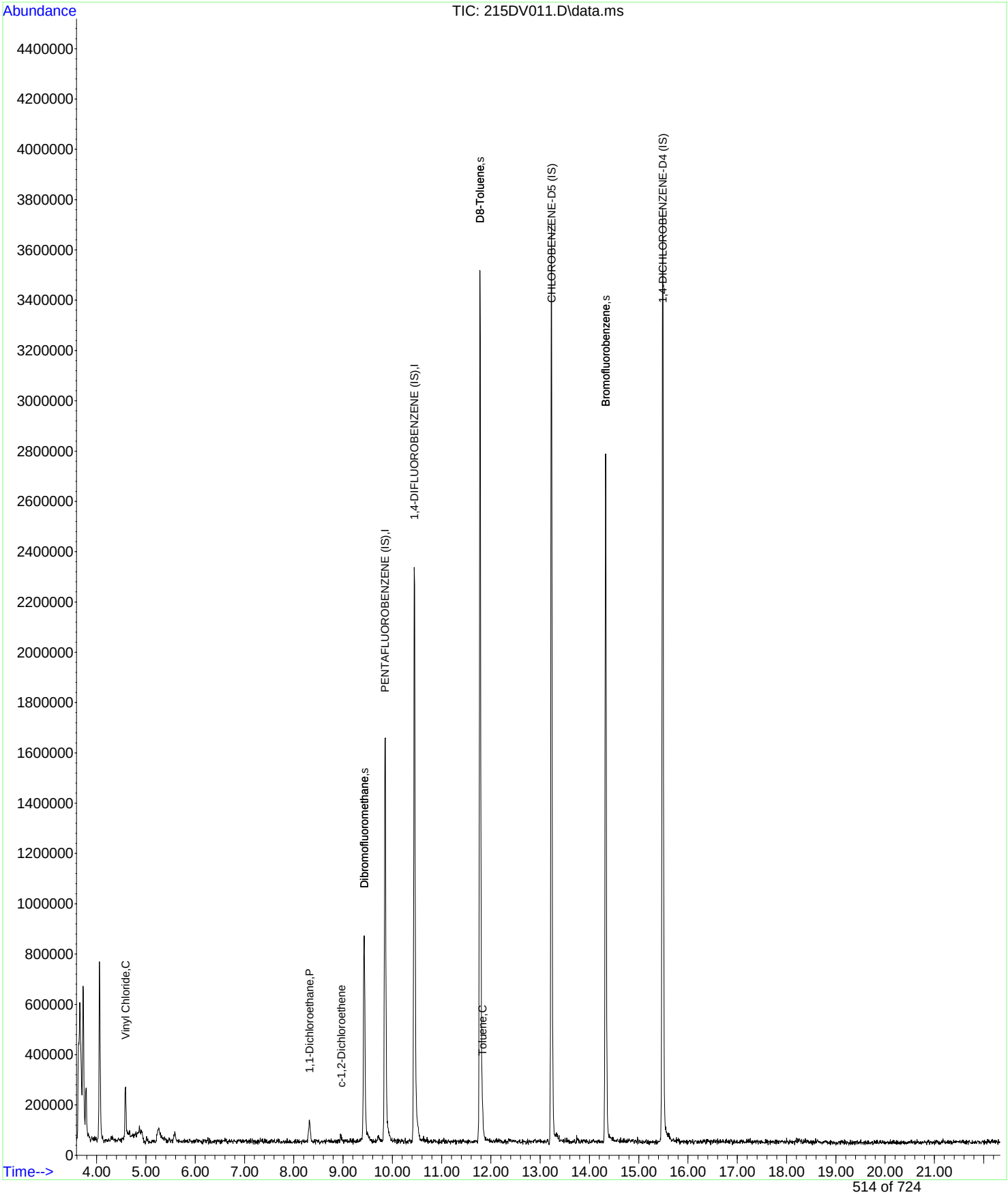
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2565308	56.71 ug/L	98
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	13080	0.48 ug/L	77
57) T-1,3-Dichloropropene	12.219	75	1298	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.236	69	1093	N.D.	
60) 1,1,2-Trichloroethane	12.377	97	1000	N.D.	
61) Dibromochloromethane	0.000		0	N.D. d	
62) 1,3-Dichloropropane	12.618	76	1123	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D. d	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D. d	
69) o-xylene	0.000		0	N.D. d	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1137097	52.01 ug/L	86
75) n-Propylbenzene	14.404	91	2186	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.569	83	1062	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.328	156	1956	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	6314	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.845	91	1630	N.D.	
84) tert-Butylbenzene	14.957	119	2314	N.D.	
85) 1,3,5-Trimethylbenzene	14.539	105	2035	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.015	105	1259	N.D.	
88) 1,3-Dichlorobenzene	15.485	146	2358	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	2358	N.D.	
90) n-Butylbenzene	15.491	91	1331	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV011.D
Acq On : 27 Apr 2021 12:18 pm
Operator : kkw
Sample : AE02766-16RE1@5X
Misc : 5
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 27 13:04:28 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV024.D
Acq On : 27 Apr 2021 6:18 pm
Operator : kkw
Sample : 1D27020-MS1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 07:49:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1074216	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2480004	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1535003	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1329945	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	622923	55.84	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 111.68%				
52) D8-Toluene	11.778	98	2755168	50.65	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.30%				
73) Bromofluorobenzene	14.328	95	1350315	50.42	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.84%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	266945	20.70	ug/L	#	97
3) Chloromethane	4.404	50	244874	32.67	ug/L		99
4) Vinyl Chloride	4.586	62	252381	26.04	ug/L	#	57
5) Bromomethane	5.233	94	82975	21.89	ug/L		99
6) Chloroethane	5.468	64	155448	25.66	ug/L		98
7) Trichlorofluoromethane	5.714	101	391710	25.29	ug/L		99
8) Diethyl ether	6.178	59	146939	26.96	ug/L		100
9) 1,1-Dichloroethene	6.531	96	235841	27.01	ug/L		97
10) Trichlorotrifluoroethane	6.560	151	148329	21.17	ug/L		94
11) Acrolein	7.019	56	93863	98.27	ug/L		93
12) Iodomethane	6.778	142	263780	23.08	ug/L		93
13) Carbon Disulfide	6.625	76	751494	27.32	ug/L		97
14) 3-chloropropene	7.201	41	289575	32.16	ug/L		94
15) Acetone	7.401	43	135379	110.84	ug/L		97
16) Methylene Chloride	7.342	84	252288	27.82	ug/L		91
17) Methyl Acetate	7.530	43	81423	28.42	ug/L		94
18) t-1,2-Dichloroethene	7.548	96	235715	25.06	ug/L		90
19) Methyl tert-butyl ether	7.630	73	500674	25.20	ug/L		98
20) Acetonitrile	8.047	41	109929	143.71	ug/L	#	70
21) Isopropyl ether	8.053	45	609336	31.36	ug/L		98
22) Chloroprene	8.276	88	255404	30.59	ug/L		98
23) 1,1-Dichloroethane	8.317	63	484339	31.24	ug/L		97
24) Acrylonitrile	8.399	53	46538	25.77	ug/L	#	88
25) Vinyl Acetate	8.552	43	255304	24.05	ug/L		96
26) c-1,2-Dichloroethene	8.946	96	295581	27.81	ug/L		95
27) 2,2-Dichloropropane	9.081	77	441315	27.73	ug/L		95
28) Bromochloromethane	9.187	128	124050	22.91	ug/L		95
29) Cyclohexane	9.193	56	472310	32.74	ug/L		96
30) Chloroform	9.222	83	505796	24.03	ug/L		94
32) Dibromofluoromethane	9.428	113	622923	55.84	ug/L	#	89
33) 2-Butanone	9.557	72	89360	113.45	ug/L		97
34) 1,1,1-Trichloroethane	9.486	97	400530	22.32	ug/L		99
35) 1,1-Dichloropropene	9.604	75	372764	26.15	ug/L		99
36) Propionitrile	9.909	54	21056	32.06	ug/L	#	1
37) Methacrylonitrile	9.909	41	143091	41.24	ug/L	#	70
38) Isobutyl Alcohol	9.904	43	157880	367.48	ug/L	#	40
40) Carbon Tetrachloride	9.416	117	385290	23.72	ug/L		83
41) Benzene	9.880	78	1033162	20.35	ug/L		95
42) 1,2-Dichloroethane	10.086	62	360053	20.70	ug/L		96
43) Trichloroethene	10.456	130	273229	21.52	ug/L		84
44) Methyl cyclohexane	10.456	83	547451	21.90	ug/L		99
45) Dibromomethane	10.902	93	148584	20.24	ug/L		96
46) 1,2-Dichloropropane	10.991	63	281240	26.18	ug/L		93
47) Bromodichloromethane	11.014	83	356259	21.78	ug/L		97
48) Methyl Methacrylate	11.085	69	112700	20.28	ug/L		95
49) 1,4-Dioxane	11.202	88	10804	209.25	ug/L	#	81
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.613	75	410695	20.08	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV024.D
Acq On : 27 Apr 2021 6:18 pm
Operator : kkw
Sample : 1D27020-MS1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 07:49:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

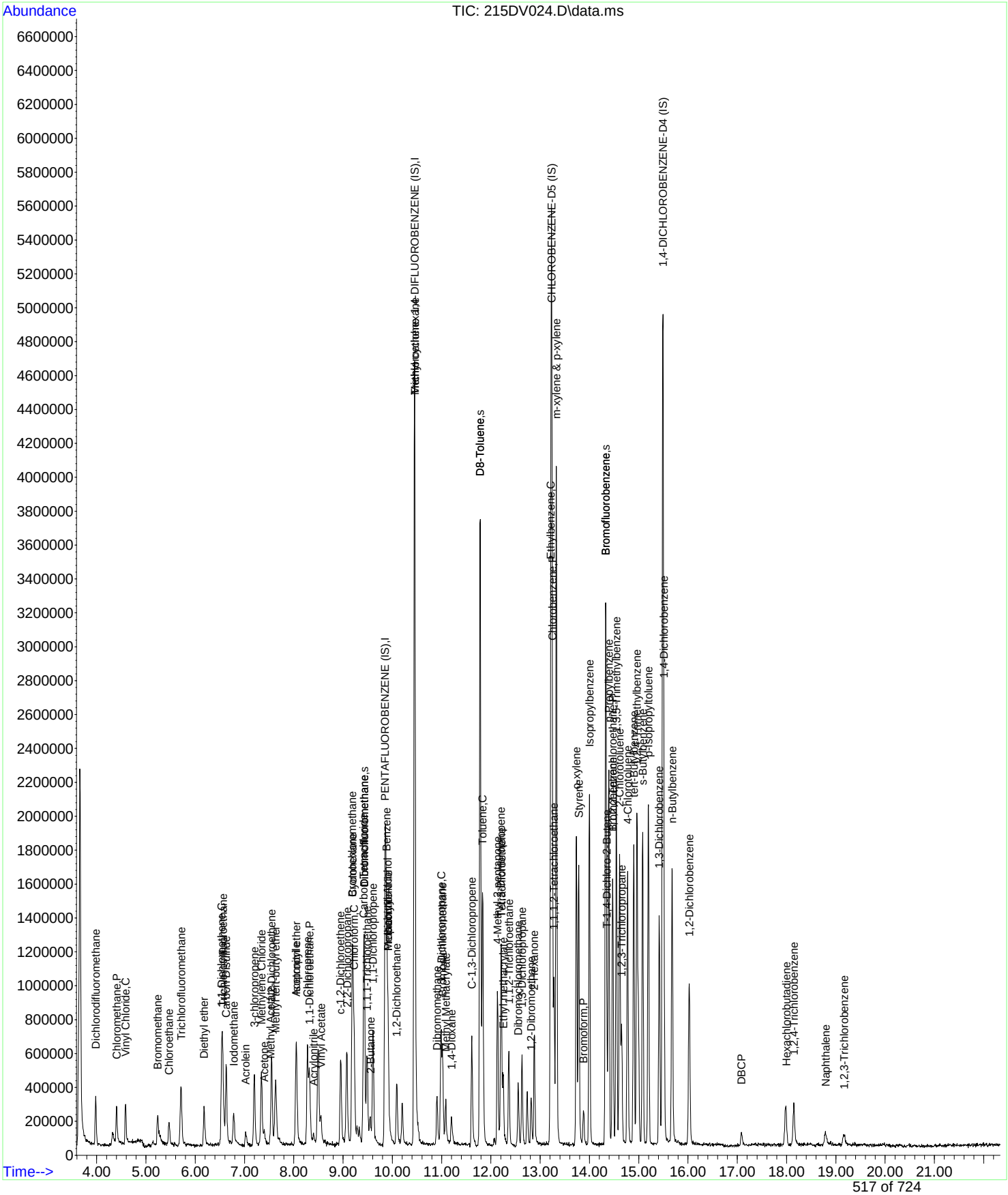
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2755168	50.65	ug/L		94
54) 4-Methyl-2-pentanone	12.130	100	110469	76.34	ug/L		86
56) Toluene	11.831	92	729459	21.69	ug/L		99
57) T-1,3-Dichloropropene	12.201	75	335342	18.01	ug/L		97
58) Tetrachloroethene	12.213	164	157413	16.41	ug/L		89
59) Ethyl methacrylate	12.248	69	230057	18.58	ug/L		96
60) 1,1,2-Trichloroethane	12.365	97	190974	17.41	ug/L		97
61) Dibromochloromethane	12.553	129	203652	17.29	ug/L		99
62) 1,3-Dichloropropane	12.630	76	346342	17.76	ug/L		100
63) 1,2-Dibromoethane	12.818	107	218686	19.58	ug/L	#	96
64) 2-Hexanone	12.877	43	410314	99.04	ug/L		98
65) Ethylbenzene	13.212	106	479543	23.01	ug/L		95
66) Chlorobenzene	13.247	112	828681	23.09	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	254282	20.97	ug/L		98
68) m-xylene & p-xylene	13.329	106	1185809	43.88	ug/L		99
69) o-xylene	13.734	106	561340	21.97	ug/L		95
70) Styrene	13.781	104	926837	22.43	ug/L		98
71) Bromoform	13.876	173	98151	16.58	ug/L		89
72) Isopropylbenzene	13.999	105	1499621	23.24	ug/L		99
74) Bromofluorobenzene	14.328	95	1350315	50.42	ug/L	#	84
75) n-Propylbenzene	14.393	91	1912943	23.15	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	269964	18.31	ug/L		97
77) 1,2,3-Trichloropropane	14.651	61	55139	20.05	ug/L		81
78) T-1,4-Dichloro-2-Butene	14.351	53	80120	16.07	ug/L	#	48
80) Bromobenzene	14.469	156	303293	21.39	ug/L		94
81) 1,2,4-Trimethylbenzene	14.962	105	1255976	21.69	ug/L		99
82) 2-Chlorotoluene	14.610	91	1115424	23.36	ug/L		98
83) 4-Chlorotoluene	14.774	91	1142936	24.02	ug/L		98
84) tert-Butylbenzene	14.898	119	975693	21.39	ug/L		95
85) 1,3,5-Trimethylbenzene	14.545	105	1304977	23.17	ug/L		99
86) p-Isopropyltoluene	15.198	119	1357685	21.48	ug/L		100
87) s-Butylbenzene	15.080	105	1505260	20.50	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	619942	20.84	ug/L		98
89) 1,4-Dichlorobenzene	15.509	146	628925	21.03	ug/L	#	85
90) n-Butylbenzene	15.679	91	1196568	23.09	ug/L		99
91) 1,2-Dichlorobenzene	16.026	146	490447	20.00	ug/L		96
92) DBCP	17.084	157	20395	13.12	ug/L	#	72
93) Hexachlorobutadiene	17.994	225	42309	15.68	ug/L		89
94) 1,2,4-Trichlorobenzene	18.147	180	107855	21.56	ug/L		94
95) Naphthalene	18.793	128	122931	16.93	ug/L	#	79
96) 1,2,3-Trichlorobenzene	19.169	180	36029	20.04	ug/L	#	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV024.D
Acq On : 27 Apr 2021 6:18 pm
Operator : kkw
Sample : 1D27020-MS1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 07:49:37 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV025.D
Acq On : 27 Apr 2021 6:46 pm
Operator : kkw
Sample : 1D27020-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 07:49:40 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1224130	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2568791	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1419706	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1248745	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	736170	57.91	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 115.82%				
52) D8-Toluene	11.778	98	3201771	56.83	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.66%				
73) Bromofluorobenzene	14.328	95	1476017	59.59	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 119.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	286463	19.49	ug/L		96
3) Chloromethane	4.404	50	249976	30.00	ug/L		99
4) Vinyl Chloride	4.586	62	257908	23.58	ug/L	#	83
5) Bromomethane	5.238	94	98483	22.72	ug/L		92
6) Chloroethane	5.468	64	163468	23.68	ug/L		95
7) Trichlorofluoromethane	5.708	101	410555	23.26	ug/L		97
8) Diethyl ether	6.178	59	141051	23.33	ug/L	#	88
9) 1,1-Dichloroethene	6.537	96	257772	25.91	ug/L		100
10) Trichlorotrifluoroethane	6.560	151	156596	19.61	ug/L		94
11) Acrolein	7.019	56	104498	96.23	ug/L		97
12) Iodomethane	6.784	142	284291	21.83	ug/L		96
13) Carbon Disulfide	6.625	76	797258	25.43	ug/L		98
14) 3-chloropropene	7.195	41	303884	30.14	ug/L		86
15) Acetone	7.395	43	159645	114.08	ug/L		92
16) Methylene Chloride	7.348	84	271290	26.40	ug/L		93
17) Methyl Acetate	7.524	43	101206	30.26	ug/L	#	89
18) t-1,2-Dichloroethene	7.553	96	279018	25.95	ug/L		96
19) Methyl tert-butyl ether	7.630	73	608915	26.65	ug/L		99
20) Acetonitrile	8.047	41	123807	142.24	ug/L	#	79
21) Isopropyl ether	8.053	45	635865	29.27	ug/L		96
22) Chloroprene	8.276	88	252444	27.06	ug/L		85
23) 1,1-Dichloroethane	8.317	63	501006	28.71	ug/L		98
24) Acrylonitrile	8.276	53	481427	204.54	ug/L	#	40
25) Vinyl Acetate	8.552	43	256726	21.33	ug/L		96
26) c-1,2-Dichloroethene	8.946	96	268744	22.66	ug/L		95
27) 2,2-Dichloropropane	9.069	77	407346	22.82	ug/L		97
28) Bromochloromethane	9.193	128	116099	18.82	ug/L		88
29) Cyclohexane	9.193	56	463240	28.86	ug/L		92
30) Chloroform	9.222	83	538353	22.45	ug/L		99
32) Dibromofluoromethane	9.428	113	736170	57.91	ug/L	#	89
33) 2-Butanone	9.551	72	102583	114.17	ug/L		97
34) 1,1,1-Trichloroethane	9.486	97	491186	24.02	ug/L		98
35) 1,1-Dichloropropene	9.610	75	408992	25.25	ug/L		99
36) Propionitrile	9.909	54	22184	29.71	ug/L	#	1
37) Methacrylonitrile	9.909	41	172931	43.66	ug/L	#	72
38) Isobutyl Alcohol	9.909	43	200124	403.18	ug/L	#	60
40) Carbon Tetrachloride	9.416	117	440368	26.17	ug/L		85
41) Benzene	9.874	78	1172381	22.30	ug/L		100
42) 1,2-Dichloroethane	10.086	62	355909	19.76	ug/L		96
43) Trichloroethene	10.450	130	279915	21.28	ug/L	#	79
44) Methyl cyclohexane	10.456	83	613977	23.71	ug/L		97
45) Dibromomethane	10.908	93	146609	19.29	ug/L		91
46) 1,2-Dichloropropane	10.991	63	257785	23.38	ug/L		98
47) Bromodichloromethane	11.026	83	341212	20.14	ug/L		95
48) Methyl Methacrylate	11.085	69	121207	20.97	ug/L		97
49) 1,4-Dioxane	11.196	88	21735	384.81	ug/L		85
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.613	75	408342	19.30	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV025.D
Acq On : 27 Apr 2021 6:46 pm
Operator : kkw
Sample : 1D27020-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 07:49:40 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

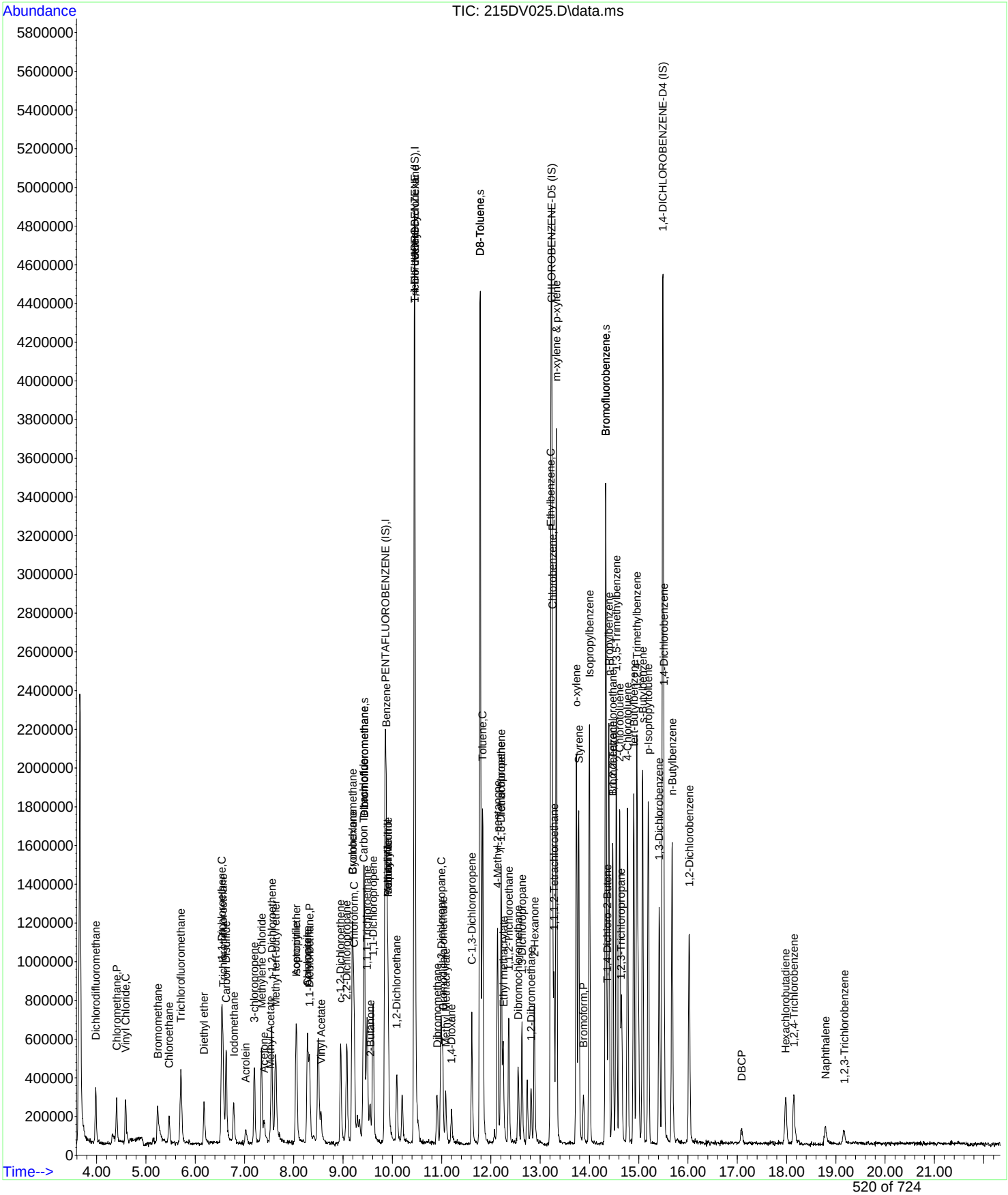
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3201771	56.83	ug/L		94
54) 4-Methyl-2-pentanone	12.130	100	148737	99.23	ug/L		98
56) Toluene	11.831	92	799748	25.71	ug/L		98
57) T-1,3-Dichloropropene	12.201	75	389098	22.59	ug/L		97
58) Tetrachloroethene	12.207	164	192153	21.65	ug/L		90
59) Ethyl methacrylate	12.254	69	269799	23.22	ug/L		95
60) 1,1,2-Trichloroethane	12.360	97	224930	22.18	ug/L		97
61) Dibromochloromethane	12.553	129	235611	21.62	ug/L		99
62) 1,3-Dichloropropane	12.630	76	383209	21.25	ug/L		95
63) 1,2-Dibromoethane	12.812	107	212679	20.59	ug/L		96
64) 2-Hexanone	12.883	43	455254	116.95	ug/L		98
65) Ethylbenzene	13.212	106	431886	22.41	ug/L		98
66) Chlorobenzene	13.247	112	733100	22.09	ug/L		97
67) 1,1,1,2-Tetrachloroethane	13.282	131	220571	19.67	ug/L	#	95
68) m-xylene & p-xylene	13.329	106	1080599	43.24	ug/L		97
69) o-xylene	13.734	106	566198	23.96	ug/L		95
70) Styrene	13.781	104	970735	25.40	ug/L		98
71) Bromoform	13.875	173	104788	19.14	ug/L	#	87
72) Isopropylbenzene	13.999	105	1571334	26.33	ug/L		99
74) Bromofluorobenzene	14.328	95	1476017	59.59	ug/L	#	77
75) n-Propylbenzene	14.393	91	1863274	24.38	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	291889	21.41	ug/L		98
77) 1,2,3-Trichloropropane	14.639	61	65998	25.94	ug/L	#	79
78) T-1,4-Dichloro-2-Butene	14.357	53	84484	18.32	ug/L	#	35
80) Bromobenzene	14.469	156	298519	22.42	ug/L		90
81) 1,2,4-Trimethylbenzene	14.962	105	1299767	23.85	ug/L		99
82) 2-Chlorotoluene	14.610	91	1142633	25.49	ug/L		99
83) 4-Chlorotoluene	14.769	91	1192914	26.53	ug/L		99
84) tert-Butylbenzene	14.898	119	996617	23.20	ug/L		97
85) 1,3,5-Trimethylbenzene	14.545	105	1349462	25.42	ug/L		97
86) p-Isopropyltoluene	15.192	119	1244207	20.97	ug/L		99
87) s-Butylbenzene	15.080	105	1548672	22.46	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	549009	19.65	ug/L		93
89) 1,4-Dichlorobenzene	15.509	146	572916	20.41	ug/L	#	85
90) n-Butylbenzene	15.679	91	1120392	23.03	ug/L		99
91) 1,2-Dichlorobenzene	16.026	146	544738	23.52	ug/L		95
92) DBCP	17.089	157	26132	17.59	ug/L	#	82
93) Hexachlorobutadiene	17.977	225	50740	19.86	ug/L	#	93
94) 1,2,4-Trichlorobenzene	18.147	180	98508	21.07	ug/L		93
95) Naphthalene	18.787	128	157563	21.35	ug/L		96
96) 1,2,3-Trichlorobenzene	19.175	180	32497	19.42	ug/L	#	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042721\
Data File : 215DV025.D
Acq On : 27 Apr 2021 6:46 pm
Operator : kkw
Sample : 1D27020-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Apr 28 07:49:40 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA66133

Instrument: OVGCMS2

Calibration ID: 2103054

Printed: 4/28/2021 1:10:18PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA66133-TUN1	QC		1		A1B1157			
AA66133-CCV1	QC		2		A1D1157	A1B0764		
1D28019-BS1	QC		3			A1B0764		
1D28019-MS1	QC		4			A1B0764		
1D28019-MSD1	QC		5			A1B0764		
1D28019-BLK2	QC		6			A1B0764		
1D28019-BLK1	QC		7			A1B0764		
AE03252-01	TCLP 8260D	A 04	8			A1B0764		run100x nc4/28/21
AE03252-01	8260D Arom	A 04	9			A1B0764		BatchQC
AE03252-01	8260D Appendix 1 FL	A 04	10			A1B0764		BatchQC
AE03252-01	624.1 Arom	A 04	11			A1B0764		BatchQC
AE03252-01	60D TCL SOM01.2 CLP-LIK	A 04	12			A1B0764		BatchQC
AE03299-01	TCLP 8260D	A 01	13			A1B0764		run100x nc4/28/21
AE03248-02	TCLP 8260D	A 03	14			A1B0764		run100x nc4/28/21 Benzene only KD 4
AE03288-01	TCLP 8260D	A 04	15			A1B0764		run100x nc4/28/21
AE00595-01	8260D Arom	C	16			A1B0764		hist 1x nc4/28/21
AE02766-05RE2	60D TCL SOM01.2 CLP-LIK	B	17			A1B0764	Tetra Tech NUS, Inc. (TE015)	rr@1x trans12dce high in BS Re-extra
AE00595-03	8260D Arom	C	18			A1B0764		hist 1x nc4/28/21
AE03192-01	624.1 Arom	J	19			A1B0764		Benzene only, JAJ 7/30/19.
AE03192-02	624.1 Arom	H	20			A1B0764		Benzene only, JAJ 7/30/19.
AE03549-02	8260D Appendix 1 FL	F	21			A1B0764		
AE03549-03	8260D Appendix 1 FL	F	22			A1B0764		
AE03549-04	8260D Appendix 1 FL	G	23			A1B0764		

Samples Loaded By 4/28/21 Date

Data Processed By 4/29/21 Date

ANALYSIS SEQUENCE

AA66133

Instrument: OVGCMS2

Calibration ID: 2103054

Printed: 4/28/2021 1:10:18PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AE03549-05	8260D Appendix 1 FL	G	24			A1B0764		
AE03549-06	8260D Appendix 1 FL	G	25			A1B0764		
AE03549-07	8260D Appendix 1 FL	A	26			A1B0764		
AE00595-02	8260D Arom	C	27			A1B0764		hist 1x nc4/28/21
AE02476-04	8260D Arom	C	28			A1B0764		hist5x nc4/28/21
AE02476-05	8260D Arom	C	29			A1B0764		hist5x nc4/28/21
AE02476-06	8260D Arom	A	30			A1B0764		tb

Samples Loaded By 4/28/21 Date

Data Processed By 4/28/21 Date

PREPARATION BENCH SHEET

Printed: 4/28/2021 1:10:29PM

1D28019

ENCO Orlando

Analysis
624.1 Arom [EPA 624.1]
8260D Appendix 1 FL [EPA 8260D]
8260D Arom [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]
TCLP 8260D [EPA 8260D]

Surrogate Solution
___ A1B1156 8260 surr working

Prepared using: EPA 5030B_MS

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1D28019-BLK1		Blank		QC			5	5			1	
1D28019-BLK2		Blank		QC			5	5			1	
1D28019-BS1		LCS		QC			5	5	A1D1159 A1D1060	2 2	1	
1D28019-MS1		Matrix Spike [AE03252-01]		QC			0.05	5	A1D1159 A1D1060	2 2	1	
1D28019-MSD1		Matrix Spike Dup [AE03252-01]		QC			0.05	5	A1D1159 A1D1060	2 2	1	
AE00595-01		DGRS Influent C[MS25	04-May-21	8260D Arom			5	5			1	hist 1x nc4/28/21
AE00595-02		Post Airstripper C[MS25	04-May-21	8260D Arom			5	5			1	hist 1x nc4/28/21
AE00595-03		DGRS Effluent C[MS25	04-May-21	8260D Arom			5	5			1	hist 1x nc4/28/21
AE02476-04		DW-1 C[MS25	05-May-21	8260D Arom			5	5			1	hist5x nc4/28/21
AE02476-05		DW-2 C[MS25	05-May-21	8260D Arom			5	5			1	hist5x nc4/28/21
AE02476-06		TRIP BLANK A[MS25	05-May-21	8260D Arom			5	5			1	tb
AE02766-05RE2	C	HMPN-MW0030-025.0-202104[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE			5	5			1	rr@1x trans12dce high in BS Re-extract added 4/28/2021 by KKW
AE03192-01		TMW-1 J[MS25	04-May-21	624.1 Arom			5	5			1	Benzene only, JAJ 7/30/19.
AE03192-02		TMW-2 H[MS25	04-May-21	624.1 Arom			5	5			1	Benzene only, JAJ 7/30/19.
AE03248-02		Preburn A 03[C4	03-May-21	TCLP 8260D			5	5			1	run100x nc4/28/21 Benzene only KD 4/19/21
AE03252-01		OWS A 04[C3		8260D Appendix 1 FL			5	5			1	Added for BatchQC in: 1D28019

PREPARATION BENCH SHEET

Printed: 4/28/2021 1:10:29PM

1D28019

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

A1B1156	8260 surr working

Spiking Solution

A1D1060	8260 2nd source Gases/Acrolein virtual
A1D1159	8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE03252-01	OWS A 04[C3	28-Apr-21	TCLP 8260D			5	5			1	run100x nc4/28/21
AE03252-01	OWS A 04[C3		8260D Arom			5	5			1	Added for BatchQC in: 1D28019
AE03252-01	OWS A 04[C3		624.1 Arom			5	5			1	Added for BatchQC in: 1D28019
AE03252-01	OWS A 04[C3		8260D TCL SOM01.2 CLP-LIKE			5	5			1	Added for BatchQC in: 1D28019
AE03288-01	CE05825-01 (Soil Drum) A 04[C3	03-May-21	TCLP 8260D			5	5			1	run100x nc4/28/21
AE03299-01	Absorbents A 01[C3	29-Apr-21	TCLP 8260D			5	5			1	run100x nc4/28/21
AE03549-02	MW-4I F[MS25	05-May-21	8260D Appendix 1 FL			5	5			1	
AE03549-03	MW-5S F[MS25	05-May-21	8260D Appendix 1 FL			5	5			1	
AE03549-04	MW-5I G[MS25	05-May-21	8260D Appendix 1 FL			5	5			1	
AE03549-05	MW-6S G[MS25	05-May-21	8260D Appendix 1 FL			5	5			1	
AE03549-06	MW-6I G[MS25	05-May-21	8260D Appendix 1 FL			5	5			1	
AE03549-07	TRIP BLANK A[MS25	05-May-21	8260D Appendix 1 FL			5	5			1	

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

PREPARATION BENCH SHEET

Printed: 4/28/2021 1:10:29PM

1D28019

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

___	A1B1156	8260 surr working

Spiking Solution

A1D1060	8260 2nd source Gases/Acrolein virtual
A1D1159	8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments

Instrument 2

Start Date 4/28/21

StopDate 4/28/21

Instrument ID OVGCMS2

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1D1179	P&T Anti-Foam working solution	N/A

Samples Prepared By Date 4/28/21

Samples Prepared By Date

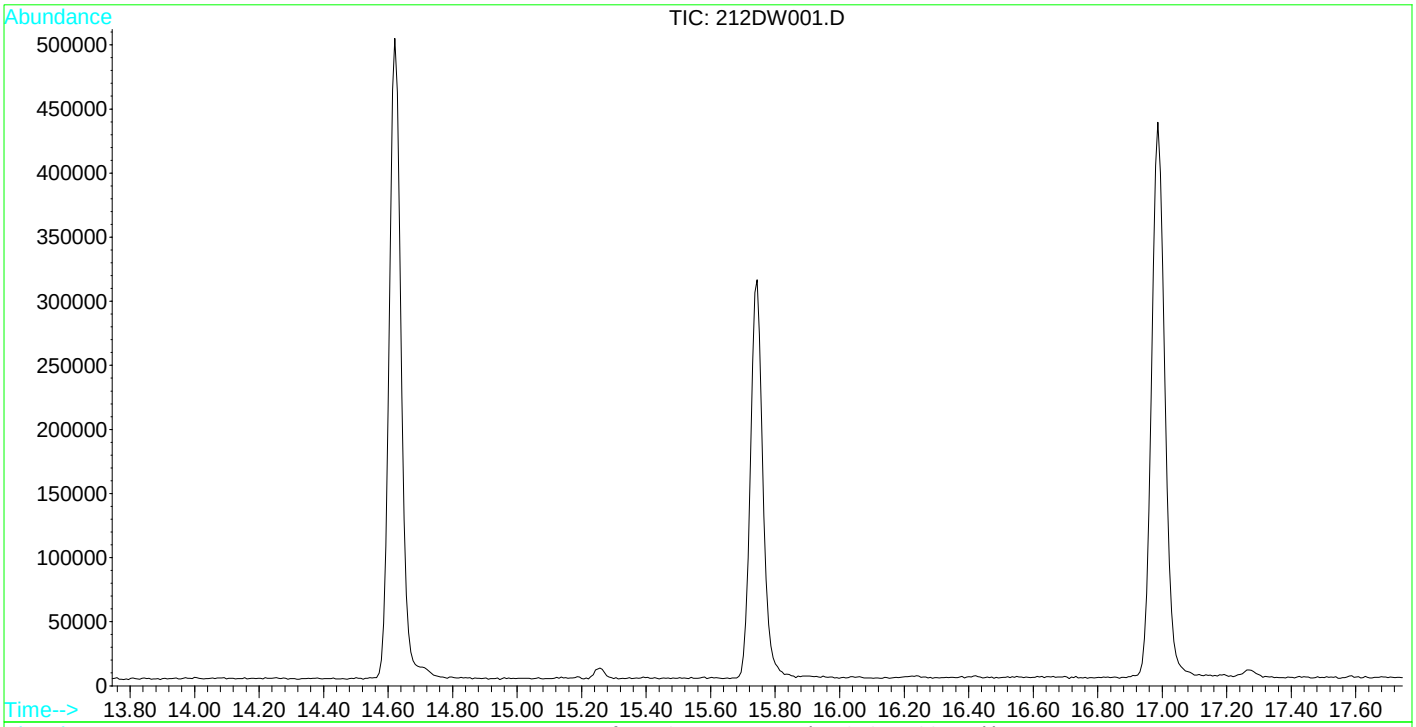
Sequence Name: C:\HPCHEM\1\SEQUENCE\212DW.S
Comment:
Operator: nmc
Data Path: C:\HPchem\1\DATA\042821\
Pre-Seq Cmd:
Post-Seq Cmd:

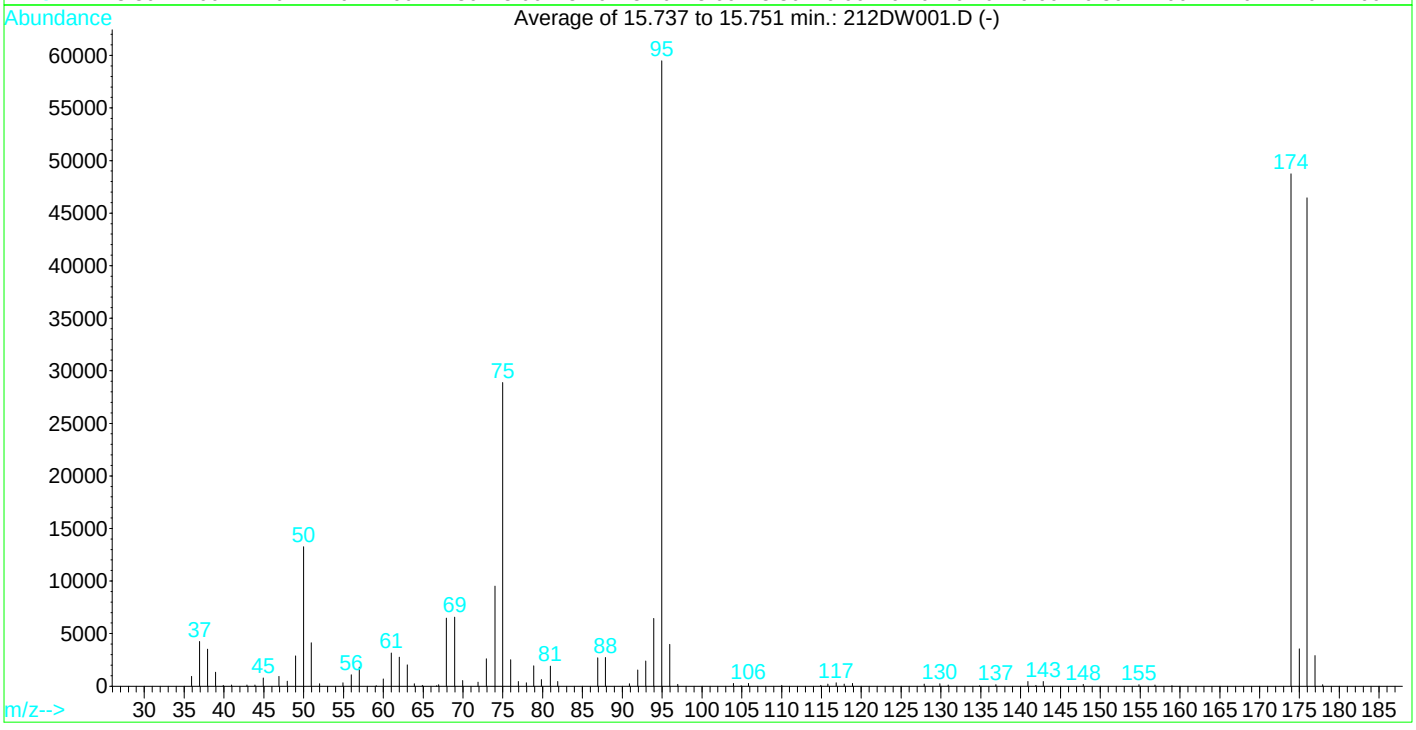
Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212DW001	8260S	tun1
2	Sample	2	212DW002	8260S	ccv1
3	Sample	3	212DW003	8260S	bs1
4	Sample	4	212DW004	8260S	1d28019-ms1
5	Sample	4	212DW005	8260S	1d28019-msd1
6	Sample	5	212DW006	8260S	1d28019-blk2@100
7	Sample	6	212DW007	8260S	1d28019-blk1
8	Sample	7	212DW008	8260S	ae03252-01@100
9	Sample	8	212DW009	8260S	ae03299-01@100
10	Sample	9	212DW010	8260S	ae03248-01@100
11	Sample	10	212DW011	8260S	ae03288-01@100
12	Sample	11	212DW012	8260S	ae00595-01
13	Sample	12	212DW013	8260S	ae02766-05re2
14	Sample	13	212DW014	8260S	ae00595-03
15	Sample	14	212DW015	8260S	ae03192-01
16	Sample	15	212DW016	8260S	ae03192-02
17	Sample	16	212DW017	8260S	ae03549-02
18	Sample	17	212DW018	8260S	ae03549-03
19	Sample	18	212DW019	8260S	ae03549-04
20	Sample	19	212DW020	8260S	ae03549-05
21	Sample	20	212DW021	8260S	ae03549-06
22	Sample	21	212DW022	8260S	ae03549-07
23	Sample	22	212DW023	8260S	ae00595-02
24	Sample	23	212DW024	8260S	ae02476-04@5 RR 1x overdilute
25	Sample	24	212DW025	8260S	ae02476-05@5 RR 1x overdilute
26	Sample	25	212DW026	8260S	ae02476-06

Data File : C:\HPCHEM\1\DATA\042821\212DW001.D Vial: 1
Acq On : 28 Apr 2021 7:13 am Operator: nmc
Sample : tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054





AutoFind: Scans 1424, 1425, 1426; Background Corrected with Scan 1413

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	122.1	59480	PASS
96	95	5	9	6.7	3983	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	81.9	48728	PASS
175	174	5	9	7.3	3551	PASS
176	174	95	105	95.3	46448	PASS
177	176	5	10	6.3	2924	PASS

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW002.D Vial: 2
Acq On : 28 Apr 2021 7:45 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 8:08 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	237360	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	393146	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	218886	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	186587	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	117906	44.45	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 88.90%			
54) D8-Toluene	13.24	98	398571	53.80	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 107.60%			
75) Bromofluorobenzene	15.74	95	166311	44.04	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 88.08%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	87451	17.17	ug/kg	99
3) Chloromethane	6.39	50	109246	20.45	ug/kg	99
4) Vinyl Chloride	6.58	62	85459	20.65	ug/kg	97
5) Bromomethane	7.22	96	57565	30.25	ug/kg	98
6) Chloroethane	7.45	64	45503	20.86	ug/kg	96
7) Trichlorofluoromethane	7.72	101	71406	17.81	ug/kg	100
8) Trichlorotrifluoroethane	8.55	101	105064	41.34	ug/kg	87
9) acrolein	8.91	56	371282	531.88	ug/kg	100
10) Acetone	9.26	43	227090	249.42	ug/kg	95
11) 1,1-Dichloroethene	8.51	96	93401	39.99	ug/kg	92
12) 3-Chloropropene	9.11	76	80519	53.13	ug/kg	85
13) Acetonitrile	9.80	41	197040	514.84	ug/kg	98
14) Iodomethane	8.73	142	865135	256.12	ug/kg	90
15) Carbon disulfide	8.63	76	2391149	300.64	ug/kg	100
16) Methylene Chloride	9.22	84	138491	45.78	ug/kg	92
17) Methyl tert-butyl ether	9.54	73	364600	47.14	ug/kg	99
18) Acrylonitrile	10.13	53	860880	527.88	ug/kg	99
19) T-1,2-Dichloroethene	9.44	96	121499	48.34	ug/kg	95
20) Isopropyl Ether	9.91	45	619512	47.59	ug/kg	97
21) C-1,2-Dichloroethene	10.68	96	142888	52.53	ug/kg	95
22) 1,1-Dichloroethane	10.12	63	246070	46.28	ug/kg	99
23) Vinyl Acetate	10.31	43	2221936	257.31	ug/kg	98
24) Chloroprene	10.11	88	125310	56.27	ug/kg	91
25) 2-Butanone	11.18	72	78622	272.29	ug/kg	90
26) Propionitrile	11.46	54	222229	509.59	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	188833	46.54	ug/kg	98
28) Methacrylonitrile	11.49	67	612768	511.40	ug/kg	93
29) Chloroform	10.90	83	247436	50.40	ug/kg	96
31) Dibromofluoromethane	11.08	113	117906	44.45	ug/kg	100
32) Bromochloromethane	10.88	128	77398	47.54	ug/kg	98
33) 1,1,1-Trichloroethane	11.20	97	175311	45.20	ug/kg	95
34) 1,1-Dichloropropene	11.29	75	188947	49.73	ug/kg	98
35) Diethyl Ether	8.15	59	120385	43.71	ug/kg	94
36) Methyl Acetate	9.40	74	25166	48.27	ug/kg#	86
37) Cyclohexane	10.96	56	197175	43.39	ug/kg	93
39) Methyl Cyclohexane	12.09	55	160484	49.63	ug/kg	90
40) Carbon Tetrachloride	11.16	117	169760	46.54	ug/kg	99
41) 1,2-Dichloroethane	11.68	62	187559	49.87	ug/kg	98
42) Benzene	11.54	78	491151	58.33	ug/kg	96
43) Isobutyl Alcohol	11.56	43	232375	1030.08	ug/kg#	85
44) Trichloroethene	12.05	130	141459	56.05	ug/kg	100
45) 1,2-Dichloropropane	12.50	63	156296	54.20	ug/kg	98
46) Methyl Methacrylate	12.57	100	42700	58.18	ug/kg	96
47) 1,4-Dioxane	12.71	88	28277	1308.77	ug/kg	91
48) Bromodichloromethane	12.52	83	193819	57.60	ug/kg	99
49) Dibromomethane	12.42	93	96736	57.02	ug/kg	93
50) 4-Methyl-2-Pentanone	13.51	100	104522	300.70	ug/kg	93
51) 2-Chloroethyl vinyl ether	12.93	63	156412	210.87	ug/kg	99
52) 2-Hexanone	14.22	43	600682	285.14	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW002.D Vial: 2
Acq On : 28 Apr 2021 7:45 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 8:08 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

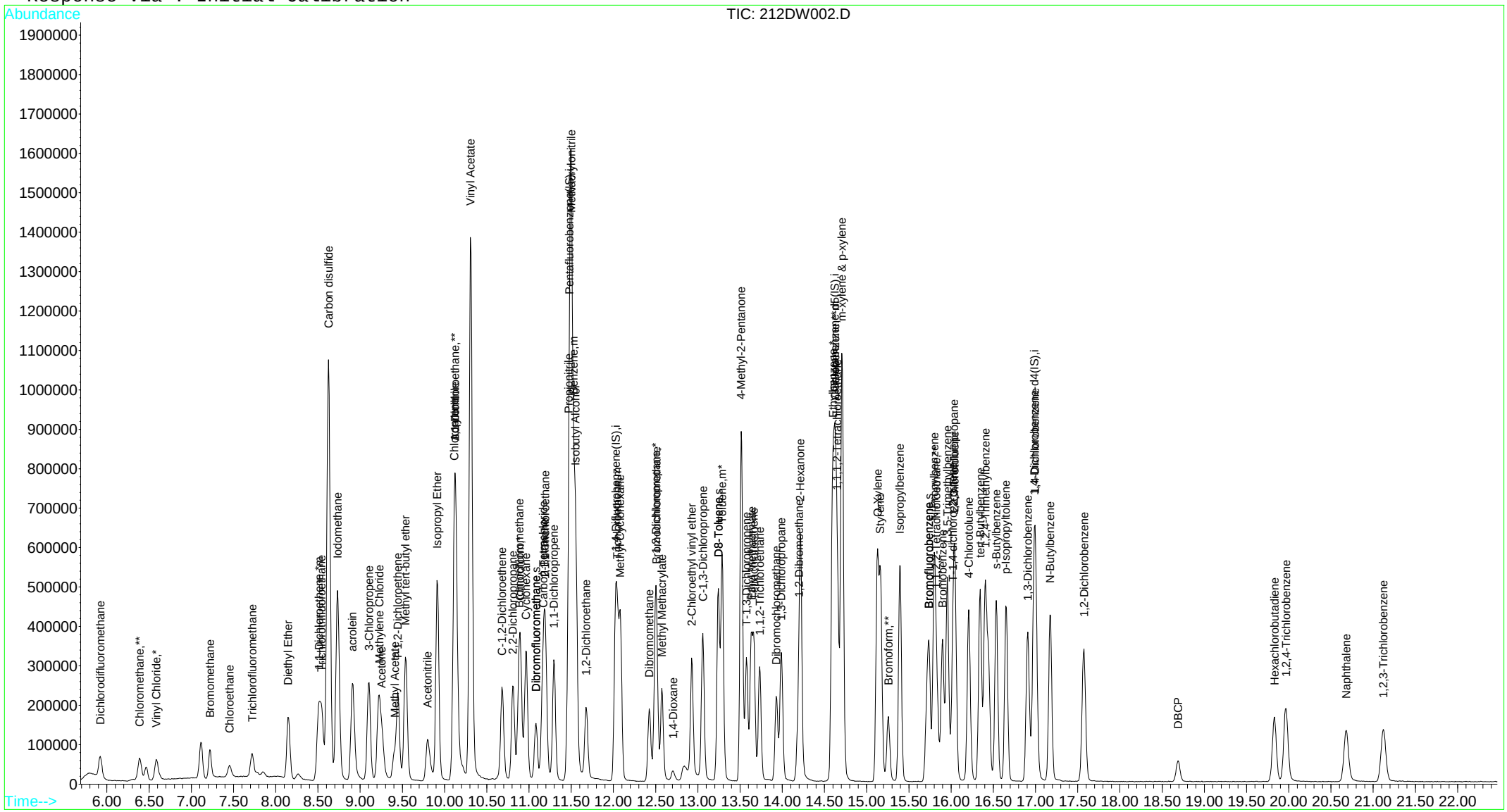
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	280002	60.79 ug/kg	96
55) D8-Toluene	13.24	98	398571	53.80 ug/kg	94
57) Toluene	13.29	92	319660	52.80 ug/kg	99
58) Ethyl Methacrylate	13.63	69	208962	48.92 ug/kg	99
59) T-1,3-Dichloropropene	13.58	75	227755	52.29 ug/kg	97
60) 1,1,2-Trichloroethane	13.73	97	119825	50.87 ug/kg	95
61) 1,3-Dichloropropane	13.99	76	257274	51.52 ug/kg	99
62) Tetrachloroethene	13.67	164	105718	57.51 ug/kg	88
63) Dibromochloromethane	13.93	129	154296	47.59 ug/kg	97
64) 1,2-Dibromoethane	14.19	107	142266	49.20 ug/kg	98
65) Chlorobenzene	14.64	112	337999	49.80 ug/kg	95
66) 1,1,1,2-Tetrachloroethane	14.66	131	130816	48.25 ug/kg#	72
67) Ethylbenzene	14.59	106	174405	50.21 ug/kg	94
68) m-xylene & p-xylene	14.71	106	429081	100.99 ug/kg	97
69) O-Xylene	15.13	106	215652	51.53 ug/kg	97
70) Bromoform	15.26	173	98313	58.34 ug/kg	98
71) Styrene	15.16	104	367228	51.24 ug/kg	100
72) Isopropylbenzene	15.39	105	526832	50.24 ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	194520	51.82 ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.83	83	169564	55.97 ug/kg	99
76) Bromofluorobenzene	15.74	95	166311	44.04 ug/kg#	68
77) T-1,4-dichloro-2-butene	16.01	53	46489	47.41 ug/kg	97
78) N-Propylbenzene	15.80	91	638951	53.69 ug/kg	97
80) Bromobenzene	15.90	156	157415	52.34 ug/kg	92
81) 1,3,5-Trimethylbenzene	15.96	105	404966	43.73 ug/kg	99
82) 2-Chlorotoluene	16.05	91	379029	44.77 ug/kg	97
83) 4-Chlorotoluene	16.21	91	397126	45.29 ug/kg	98
84) 1,2,4-Trimethylbenzene	16.40	105	412899	44.10 ug/kg	99
85) s-Butylbenzene	16.54	105	489198	44.60 ug/kg	100
86) tert-Butylbenzene	16.34	119	357230	43.46 ug/kg	98
87) p-Isopropyltoluene	16.66	119	422531	43.26 ug/kg	99
88) 1,3-Dichlorobenzene	16.91	146	268337	51.42 ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	267213	49.24 ug/kg	95
90) 1,2-Dichlorobenzene	17.57	146	256488	51.58 ug/kg	95
91) N-Butylbenzene	17.17	91	394192	47.79 ug/kg	99
92) DBCP	18.69	75	24107	39.34 ug/kg	81
93) Naphthalene	20.68	128	253965	46.55 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	131538	50.84 ug/kg	97
95) Hexachlorobutadiene	19.83	225	67018	58.62 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	101270	49.77 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW002.D Vial: 2
Acq On : 28 Apr 2021 7:45 am Operator: nmc
Sample : ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 8:08 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW003.D Vial: 3
Acq On : 28 Apr 2021 8:17 am Operator: nmc
Sample : bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 8:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	255968	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	410239	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	220387	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	183592	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	129131	45.14	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 90.28%			
54) D8-Toluene	13.24	98	437576	56.61	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 113.22%			
75) Bromofluorobenzene	15.74	95	177837	46.77	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 93.54%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	85529	15.58	ug/kg	98
3) Chloromethane	6.39	50	90697	15.74	ug/kg	98
4) Vinyl Chloride	6.58	62	81739	18.32	ug/kg	99
5) Bromomethane	7.23	96	18732	7.58	ug/kg	97
6) Chloroethane	7.46	64	43261	18.39	ug/kg	94
7) Trichlorofluoromethane	7.73	101	71795	16.61	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	55489	20.24	ug/kg	88
9) acrolein	8.91	56	50307	66.83	ug/kg	98
10) Acetone	9.26	43	94196	95.94	ug/kg	95
11) 1,1-Dichloroethene	8.50	96	53596	21.28	ug/kg	92
12) 3-Chloropropene	9.10	76	35820	21.92	ug/kg	88
13) Acetonitrile	9.83	41	5933	14.38	ug/kg#	64
14) Iodomethane	8.74	142	101762	27.94	ug/kg	89
15) Carbon disulfide	8.62	76	244298	28.48	ug/kg	99
16) Methylene Chloride	9.22	84	76390	23.41	ug/kg	91
17) Methyl tert-butyl ether	9.54	73	162764	19.51	ug/kg	99
18) Acrylonitrile	10.11	53	125374	71.29	ug/kg#	72
19) T-1,2-Dichloroethene	9.45	96	59703	22.03	ug/kg	92
20) Isopropyl Ether	9.92	45	269558	19.20	ug/kg	97
21) C-1,2-Dichloroethene	10.69	96	62484	21.30	ug/kg	94
22) 1,1-Dichloroethane	10.12	63	115669	20.17	ug/kg	97
23) Vinyl Acetate	10.32	43	179783	19.31	ug/kg	99
24) Chloroprene	10.11	88	53405	22.24	ug/kg	1
25) 2-Butanone	11.18	72	45910	147.44	ug/kg#	40
26) Propionitrile	11.47	54	7775	16.53	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	86522	19.78	ug/kg	97
28) Methacrylonitrile	11.51	67	27243	21.08	ug/kg	77
29) Chloroform	10.90	83	109107	20.61	ug/kg	93
31) Dibromofluoromethane	11.08	113	129131	45.14	ug/kg	100
32) Bromochloromethane	10.88	128	34602	19.71	ug/kg	96
33) 1,1,1-Trichloroethane	11.20	97	78799	18.84	ug/kg	95
34) 1,1-Dichloropropene	11.29	75	84067	20.52	ug/kg	99
35) Diethyl Ether	8.14	59	58705	19.77	ug/kg	93
36) Methyl Acetate	9.41	74	10843	19.29	ug/kg#	93
37) Cyclohexane	10.97	56	104529	21.33	ug/kg	95
39) Methyl Cyclohexane	12.09	55	75361	22.34	ug/kg	90
40) Carbon Tetrachloride	11.16	117	76262	20.04	ug/kg	97
41) 1,2-Dichloroethane	11.68	62	79707	20.31	ug/kg	96
42) Benzene	11.53	78	232272	26.44	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	60049	255.10	ug/kg#	1
44) Trichloroethene	12.05	130	60370	22.92	ug/kg	96
45) 1,2-Dichloropropane	12.49	63	66220	22.01	ug/kg	99
46) Methyl Methacrylate	12.58	100	17150	22.40	ug/kg	95
47) 1,4-Dioxane	12.71	88	11111	492.83	ug/kg	94
48) Bromodichloromethane	12.52	83	80989	23.07	ug/kg	94
49) Dibromomethane	12.42	93	40099	22.65	ug/kg	94
50) 4-Methyl-2-Pentanone	13.52	100	40302	111.12	ug/kg	92
51) 2-Chloroethyl vinyl ether	12.93	63	47484	61.35	ug/kg	99
52) 2-Hexanone	14.22	43	229261	104.30	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW003.D Vial: 3
Acq On : 28 Apr 2021 8:17 am Operator: nmc
Sample : bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 8:39 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

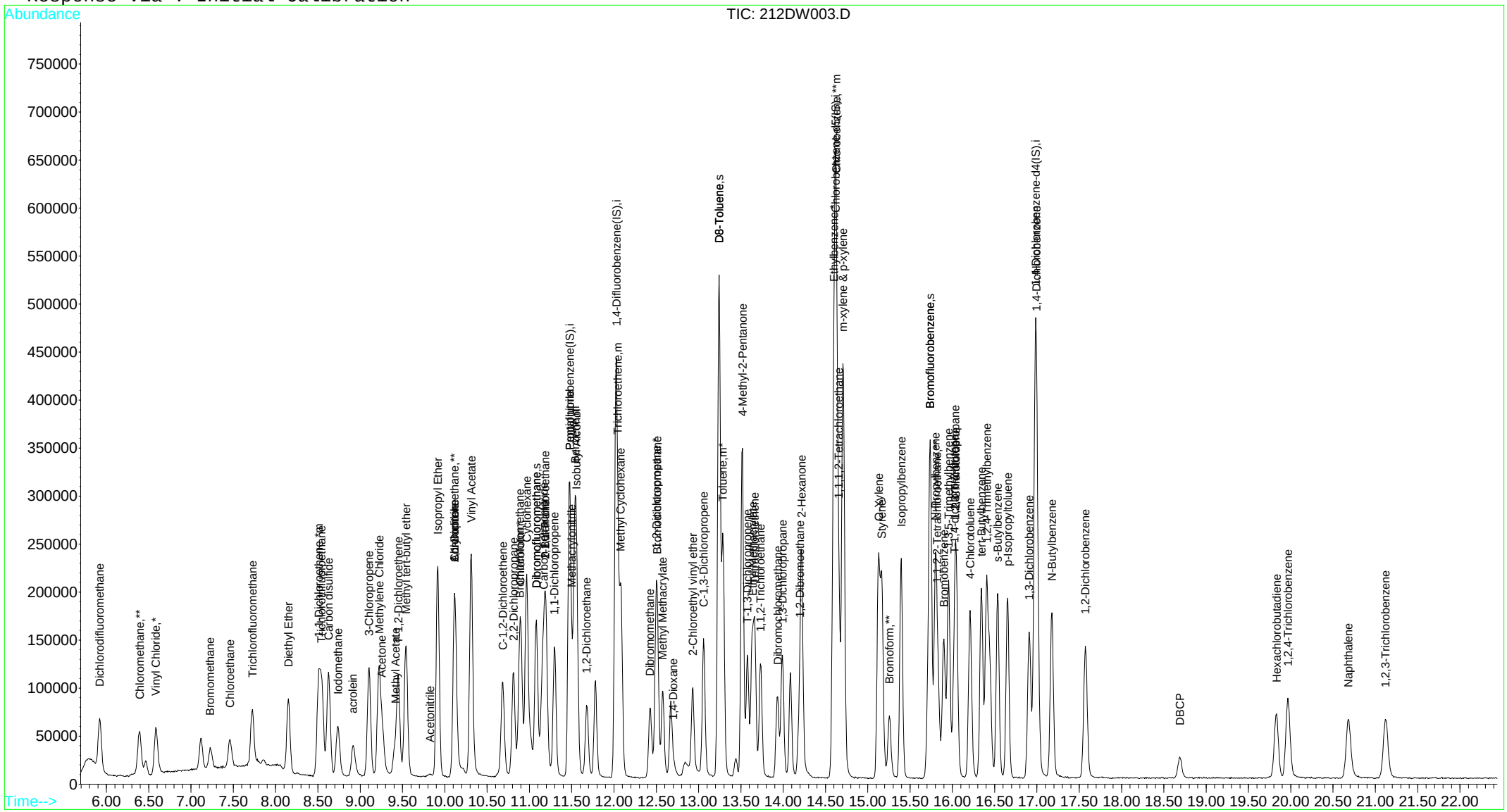
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	109681	22.82 ug/kg	95
55) D8-Toluene	13.24	98	437576	56.61 ug/kg	94
57) Toluene	13.29	92	135062	22.16 ug/kg	99
58) Ethyl Methacrylate	13.63	69	84547	19.66 ug/kg	98
59) T-1,3-Dichloropropene	13.58	75	94306	21.50 ug/kg	95
60) 1,1,2-Trichloroethane	13.73	97	49567	20.90 ug/kg	94
61) 1,3-Dichloropropane	13.99	76	102002	20.29 ug/kg	100
62) Tetrachloroethene	13.67	164	46369	25.05 ug/kg	88
63) Dibromochloromethane	13.93	129	61523	18.85 ug/kg	97
64) 1,2-Dibromoethane	14.19	107	56366	19.36 ug/kg	99
65) Chlorobenzene	14.63	112	141731	20.74 ug/kg	94
66) 1,1,1,2-Tetrachloroethane	14.66	131	51789	18.97 ug/kg#	32
67) Ethylbenzene	14.59	106	71561	20.46 ug/kg	95
68) m-xylene & p-xylene	14.71	106	172250	40.27 ug/kg	96
69) O-Xylene	15.13	106	88324	20.96 ug/kg	98
70) Bromoform	15.26	173	40244	23.72 ug/kg	98
71) Styrene	15.16	104	147290	20.41 ug/kg	99
72) Isopropylbenzene	15.40	105	214721	20.34 ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	77446	20.49 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.83	83	65200	21.37 ug/kg	99
76) Bromofluorobenzene	15.74	95	177837	46.77 ug/kg#	80
77) T-1,4-dichloro-2-butene	16.02	53	17590	17.82 ug/kg#	86
78) N-Propylbenzene	15.80	91	259584	21.66 ug/kg	98
80) Bromobenzene	15.90	156	63693	21.52 ug/kg	94
81) 1,3,5-Trimethylbenzene	15.96	105	164468	18.05 ug/kg	99
82) 2-Chlorotoluene	16.05	91	155638	18.68 ug/kg	97
83) 4-Chlorotoluene	16.21	91	160046	18.55 ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	169309	18.38 ug/kg	99
85) s-Butylbenzene	16.53	105	204793	18.98 ug/kg	99
86) tert-Butylbenzene	16.34	119	144809	17.91 ug/kg	98
87) p-Isopropyltoluene	16.65	119	174260	18.13 ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	108880	21.20 ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	108748	20.37 ug/kg	97
90) 1,2-Dichlorobenzene	17.57	146	102832	21.02 ug/kg	95
91) N-Butylbenzene	17.18	91	159500	19.65 ug/kg	99
92) DBCP	18.70	75	10408	17.26 ug/kg	88
93) Naphthalene	20.68	128	118168	24.16 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	57420	22.55 ug/kg	97
95) Hexachlorobutadiene	19.83	225	27876	24.78 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	46731	23.34 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW003.D Vial: 3
Acq On : 28 Apr 2021 8:17 am Operator: nmc
Sample : bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 8:39 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW004.D Vial: 4
Acq On : 28 Apr 2021 8:46 am Operator: nmc
Sample : 1d28019-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:08 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	260107	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	412670	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	222058	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	185344	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	122321	42.08	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 84.16%			
54) D8-Toluene	13.24	98	410298	52.76	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 105.52%			
75) Bromofluorobenzene	15.74	95	166757	43.52	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 87.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	86310	15.47	ug/kg	99
3) Chloromethane	6.39	50	98808	16.88	ug/kg	99
4) Vinyl Chloride	6.58	62	87912	19.39	ug/kg	99
5) Bromomethane	7.23	96	24409	9.90	ug/kg	95
6) Chloroethane	7.46	64	47887	20.04	ug/kg	97
7) Trichlorofluoromethane	7.72	101	76737	17.47	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	55559	19.95	ug/kg	90
9) acrolein	8.91	56	51864	67.80	ug/kg	98
10) Acetone	9.26	43	90288	90.49	ug/kg	99
11) 1,1-Dichloroethene	8.50	96	56490	22.07	ug/kg	92
12) 3-Chloropropene	9.11	76	38856	23.39	ug/kg	83
13) Acetonitrile	9.83	41	5203	12.41	ug/kg	76
14) Iodomethane	8.73	142	98869	26.71	ug/kg	89
15) Carbon disulfide	8.62	76	229237	26.30	ug/kg	99
16) Methylene Chloride	9.23	84	69940	21.10	ug/kg	91
17) Methyl tert-butyl ether	9.54	73	162660	19.19	ug/kg	98
18) Acrylonitrile	10.11	53	130295	72.91	ug/kg#	71
19) T-1,2-Dichloroethene	9.44	96	61344	22.27	ug/kg	94
20) Isopropyl Ether	9.92	45	272456	19.10	ug/kg	97
21) C-1,2-Dichloroethene	10.68	96	64084	21.50	ug/kg	96
22) 1,1-Dichloroethane	10.12	63	119730	20.55	ug/kg	97
23) Vinyl Acetate	10.31	43	175713	18.57	ug/kg	100
24) Chloroprene	10.12	88	55572	22.77	ug/kg	1
25) 2-Butanone	11.18	72	43729	138.20	ug/kg#	40
26) Propionitrile	11.47	54	7025	14.70	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	92719	20.86	ug/kg	95
28) Methacrylonitrile	11.51	67	25539	19.45	ug/kg	70
29) Chloroform	10.90	83	112588	20.93	ug/kg	93
31) Dibromofluoromethane	11.08	113	122321	42.08	ug/kg	100
32) Bromochloromethane	10.88	128	34468	19.32	ug/kg	98
33) 1,1,1-Trichloroethane	11.20	97	83020	19.53	ug/kg	94
34) 1,1-Dichloropropene	11.29	75	89570	21.51	ug/kg	98
35) Diethyl Ether	8.14	59	57585	19.08	ug/kg	93
36) Methyl Acetate	9.40	74	11151	19.52	ug/kg	88
37) Cyclohexane	10.96	56	105093	21.10	ug/kg	95
39) Methyl Cyclohexane	12.08	55	74567	21.97	ug/kg	89
40) Carbon Tetrachloride	11.16	117	79828	20.85	ug/kg	98
41) 1,2-Dichloroethane	11.68	62	79812	20.22	ug/kg	95
42) Benzene	11.53	78	240691	27.23	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	59488	251.22	ug/kg#	1
44) Trichloroethene	12.05	130	62242	23.50	ug/kg	95
45) 1,2-Dichloropropane	12.50	63	66407	21.94	ug/kg	98
46) Methyl Methacrylate	12.58	100	16762	21.76	ug/kg	96
47) 1,4-Dioxane	12.71	88	10304	454.34	ug/kg	96
48) Bromodichloromethane	12.52	83	83515	23.65	ug/kg	97
49) Dibromomethane	12.42	93	39117	21.97	ug/kg	92
50) 4-Methyl-2-Pentanone	13.51	100	39864	109.26	ug/kg	88
51) 2-Chloroethyl vinyl ether	12.93	63	43934	56.43	ug/kg	98
52) 2-Hexanone	14.22	43	221378	100.12	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW004.D Vial: 4
Acq On : 28 Apr 2021 8:46 am Operator: nmc
Sample : 1d28019-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:08 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

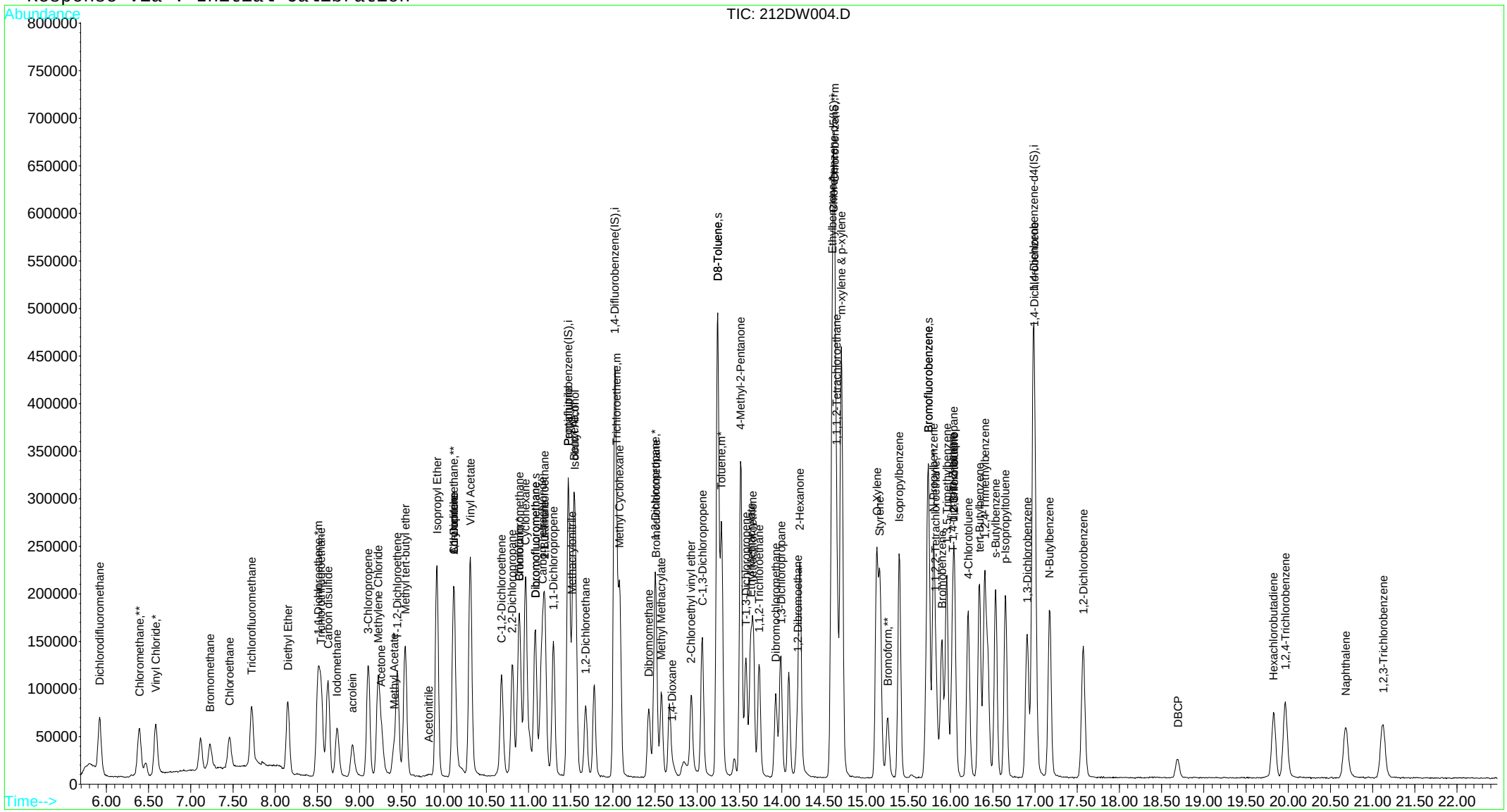
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	111236	23.01 ug/kg	95
55) D8-Toluene	13.24	98	410298	52.76 ug/kg	94
57) Toluene	13.29	92	145593	23.71 ug/kg	98
58) Ethyl Methacrylate	13.63	69	81979	18.92 ug/kg	96
59) T-1,3-Dichloropropene	13.58	75	96433	21.82 ug/kg	94
60) 1,1,2-Trichloroethane	13.73	97	49629	20.77 ug/kg	95
61) 1,3-Dichloropropane	13.99	76	99398	19.62 ug/kg	99
62) Tetrachloroethene	13.66	164	47529	25.49 ug/kg	87
63) Dibromochloromethane	13.93	129	62538	19.02 ug/kg	96
64) 1,2-Dibromoethane	14.18	107	55299	18.85 ug/kg	100
65) Chlorobenzene	14.63	112	144416	20.98 ug/kg	94
66) 1,1,1,2-Tetrachloroethane	14.66	131	53012	19.28 ug/kg#	34
67) Ethylbenzene	14.59	106	73407	20.83 ug/kg	94
68) m-xylene & p-xylene	14.71	106	176209	40.88 ug/kg	96
69) O-Xylene	15.12	106	89391	21.05 ug/kg	96
70) Bromoform	15.26	173	38670	22.62 ug/kg	99
71) Styrene	15.16	104	150951	20.76 ug/kg	99
72) Isopropylbenzene	15.39	105	222775	20.94 ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	73169	19.21 ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.83	83	62993	20.49 ug/kg	99
76) Bromofluorobenzene	15.74	95	166757	43.52 ug/kg#	79
77) T-1,4-dichloro-2-butene	16.02	53	16814	16.90 ug/kg	89
78) N-Propylbenzene	15.80	91	268283	22.22 ug/kg	97
80) Bromobenzene	15.90	156	64365	21.54 ug/kg	93
81) 1,3,5-Trimethylbenzene	15.96	105	167924	18.25 ug/kg	99
82) 2-Chlorotoluene	16.05	91	158225	18.82 ug/kg	96
83) 4-Chlorotoluene	16.21	91	162315	18.64 ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	171276	18.41 ug/kg	99
85) s-Butylbenzene	16.53	105	210576	19.33 ug/kg	100
86) tert-Butylbenzene	16.34	119	149544	18.32 ug/kg	98
87) p-Isopropyltoluene	16.65	119	178016	18.35 ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	109536	21.13 ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	107778	19.99 ug/kg	95
90) 1,2-Dichlorobenzene	17.57	146	102441	20.74 ug/kg	95
91) N-Butylbenzene	17.17	91	164246	20.05 ug/kg	99
92) DBCP	18.70	75	9255	15.21 ug/kg	83
93) Naphthalene	20.68	128	105167	21.55 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	54034	21.02 ug/kg	98
95) Hexachlorobutadiene	19.83	225	27588	24.29 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	43526	21.53 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW004.D Vial: 4
Acq On : 28 Apr 2021 8:46 am Operator: nmc
Sample : 1d28019-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:08 2021 Quant Results File: 030921.RES

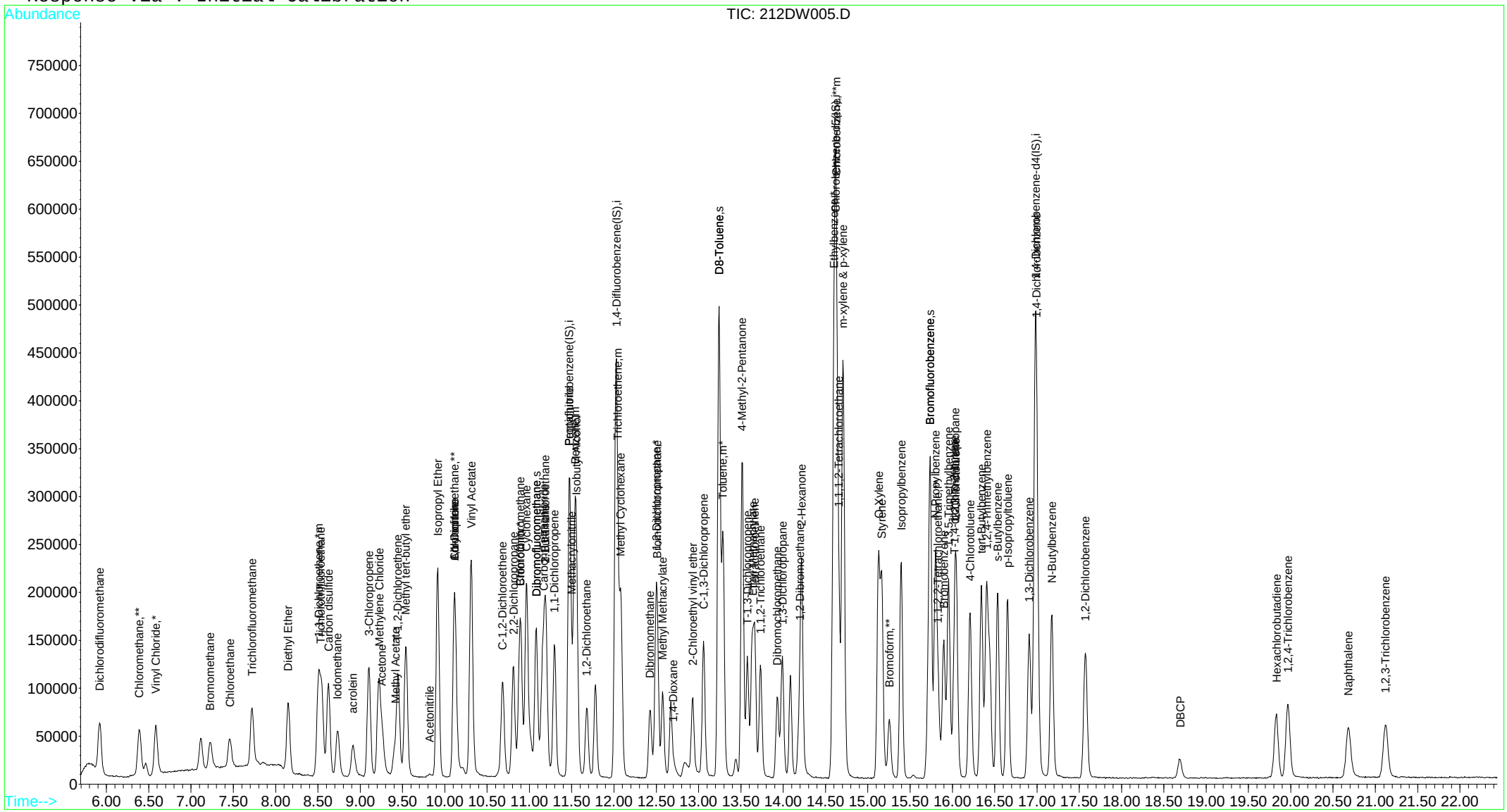
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW005.D Vial: 4
Acq On : 28 Apr 2021 9:14 am Operator: nmc
Sample : 1d28019-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:37 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW005.D Vial: 4
Acq On : 28 Apr 2021 9:14 am Operator: nmc
Sample : 1d28019-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:37 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	262522	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	417654	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	223567	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	187234	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	123065	41.95	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 83.90%			
54) D8-Toluene	13.24	98	411229	52.25	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 104.50%			
75) Bromofluorobenzene	15.74	95	167186	43.34	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 86.68%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.92	85	82047	14.57	ug/kg	99
3) Chloromethane	6.39	50	96122	16.27	ug/kg	99
4) Vinyl Chloride	6.58	62	85172	18.61	ug/kg	100
5) Bromomethane	7.23	96	27080	10.97	ug/kg	94
6) Chloroethane	7.45	64	46299	19.19	ug/kg	96
7) Trichlorofluoromethane	7.72	101	73219	16.51	ug/kg	99
8) Trichlorotrifluoroethane	8.54	101	52524	18.68	ug/kg	89
9) acrolein	8.91	56	51069	66.15	ug/kg	97
10) Acetone	9.26	43	86776	86.17	ug/kg	96
11) 1,1-Dichloroethene	8.50	96	54195	20.98	ug/kg	92
12) 3-Chloropropene	9.10	76	37543	22.40	ug/kg	85
13) Acetonitrile	9.83	41	5240	12.38	ug/kg	70
14) Iodomethane	8.73	142	90143	24.13	ug/kg	88
15) Carbon disulfide	8.62	76	217178	24.69	ug/kg	99
16) Methylene Chloride	9.22	84	67317	20.12	ug/kg	92
17) Methyl tert-butyl ether	9.54	73	160756	18.79	ug/kg	98
18) Acrylonitrile	10.11	53	125273	69.45	ug/kg#	72
19) T-1,2-Dichloroethene	9.44	96	59463	21.39	ug/kg	95
20) Isopropyl Ether	9.92	45	269528	18.72	ug/kg	97
21) C-1,2-Dichloroethene	10.68	96	62397	20.74	ug/kg	96
22) 1,1-Dichloroethane	10.12	63	117006	19.90	ug/kg	99
23) Vinyl Acetate	10.31	43	174458	18.27	ug/kg	99
24) Chloroprene	10.11	88	53766	21.83	ug/kg	1
25) 2-Butanone	11.18	72	43905	137.48	ug/kg#	38
26) Propionitrile	11.47	54	7301	15.14	ug/kg	100
27) 2,2-Dichloropropane	10.81	77	90892	20.26	ug/kg	97
28) Methacrylonitrile	11.51	67	24973	18.84	ug/kg	71
29) Chloroform	10.90	83	109339	20.14	ug/kg	96
31) Dibromofluoromethane	11.08	113	123065	41.95	ug/kg	100
32) Bromochloromethane	10.88	128	33989	18.88	ug/kg	99
33) 1,1,1-Trichloroethane	11.20	97	79523	18.54	ug/kg	94
34) 1,1-Dichloropropene	11.29	75	86670	20.62	ug/kg	98
35) Diethyl Ether	8.14	59	57471	18.87	ug/kg	94
36) Methyl Acetate	9.41	74	10998	19.07	ug/kg#	84
37) Cyclohexane	10.96	56	100848	20.07	ug/kg	95
39) Methyl Cyclohexane	12.08	55	70313	20.47	ug/kg	88
40) Carbon Tetrachloride	11.16	117	76119	19.64	ug/kg	98
41) 1,2-Dichloroethane	11.68	62	78605	19.68	ug/kg	96
42) Benzene	11.53	78	232876	26.03	ug/kg#	48
43) Isobutyl Alcohol	11.56	43	58429	243.81	ug/kg#	1
44) Trichloroethene	12.05	130	61421	22.91	ug/kg	95
45) 1,2-Dichloropropane	12.49	63	65648	21.43	ug/kg	97
46) Methyl Methacrylate	12.57	100	16716	21.44	ug/kg	97
47) 1,4-Dioxane	12.71	88	10334	450.23	ug/kg	99
48) Bromodichloromethane	12.52	83	80481	22.52	ug/kg	98
49) Dibromomethane	12.42	93	38898	21.58	ug/kg	93
50) 4-Methyl-2-Pentanone	13.51	100	39981	108.27	ug/kg	87
51) 2-Chloroethyl vinyl ether	12.93	63	42283	53.66	ug/kg	98
52) 2-Hexanone	14.22	43	217676	97.27	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW005.D Vial: 4
Acq On : 28 Apr 2021 9:14 am Operator: nmc
Sample : 1d28019-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:37 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	107769	22.02	ug/kg	95
55) D8-Toluene	13.24	98	411229	52.25	ug/kg	94
57) Toluene	13.29	92	141401	22.87	ug/kg	99
58) Ethyl Methacrylate	13.63	69	81621	18.71	ug/kg	94
59) T-1,3-Dichloropropene	13.58	75	93123	20.93	ug/kg	93
60) 1,1,2-Trichloroethane	13.73	97	46962	19.52	ug/kg	91
61) 1,3-Dichloropropane	13.99	76	99406	19.49	ug/kg	99
62) Tetrachloroethene	13.67	164	45480	24.22	ug/kg	88
63) Dibromochloromethane	13.93	129	60965	18.41	ug/kg	96
64) 1,2-Dibromoethane	14.19	107	53739	18.20	ug/kg	100
65) Chlorobenzene	14.63	112	141509	20.41	ug/kg	94
66) 1,1,1,2-Tetrachloroethane	14.66	131	51622	18.64	ug/kg#	30
67) Ethylbenzene	14.59	106	71674	20.20	ug/kg	96
68) m-xylene & p-xylene	14.71	106	172132	39.67	ug/kg	96
69) O-Xylene	15.13	106	86636	20.27	ug/kg	96
70) Bromoform	15.26	173	38631	22.44	ug/kg	99
71) Styrene	15.16	104	148197	20.25	ug/kg	99
72) Isopropylbenzene	15.40	105	217647	20.32	ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	72493	18.91	ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.83	83	62366	20.15	ug/kg	98
76) Bromofluorobenzene	15.74	95	167186	43.34	ug/kg#	79
77) T-1,4-dichloro-2-butene	16.02	53	17024	17.00	ug/kg	92
78) N-Propylbenzene	15.80	91	259426	21.34	ug/kg	97
80) Bromobenzene	15.90	156	62602	20.74	ug/kg	93
81) 1,3,5-Trimethylbenzene	15.96	105	163761	17.62	ug/kg	100
82) 2-Chlorotoluene	16.05	91	154578	18.20	ug/kg	96
83) 4-Chlorotoluene	16.21	91	158350	18.00	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	166785	17.75	ug/kg	99
85) s-Butylbenzene	16.53	105	205310	18.66	ug/kg	100
86) tert-Butylbenzene	16.34	119	144037	17.46	ug/kg	98
87) p-Isopropyltoluene	16.65	119	172164	17.56	ug/kg	97
88) 1,3-Dichlorobenzene	16.91	146	106364	20.31	ug/kg	96
89) 1,4-Dichlorobenzene	17.00	146	106307	19.52	ug/kg	96
90) 1,2-Dichlorobenzene	17.57	146	100404	20.12	ug/kg	95
91) N-Butylbenzene	17.18	91	157323	19.01	ug/kg	99
92) DBCP	18.70	75	9517	15.48	ug/kg	87
93) Naphthalene	20.68	128	101671	20.70	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	52848	20.35	ug/kg	96
95) Hexachlorobutadiene	19.83	225	26335	22.96	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	41562	20.35	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW007.D Vial: 6
Acq On : 28 Apr 2021 10:11 am Operator: nmc
Sample : 1d28019-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 10:38 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	271944	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	430780	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.61	82	232220	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	188399	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	131205	43.17	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 86.34%			
54) D8-Toluene	13.24	98	422590	52.06	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 104.12%			
75) Bromofluorobenzene	15.74	95	169332	42.26	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.52%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.	d	
15) Carbon disulfide	0.00	76	0	N.D.	d	
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.	d	
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D.	d	
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	131205	43.17	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.	d	
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D.	d	
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.	d	
43) Isobutyl Alcohol	0.00	43	0	N.D.	d	
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.	d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW007.D Vial: 6
Acq On : 28 Apr 2021 10:11 am Operator: nmc
Sample : 1d28019-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 10:38 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

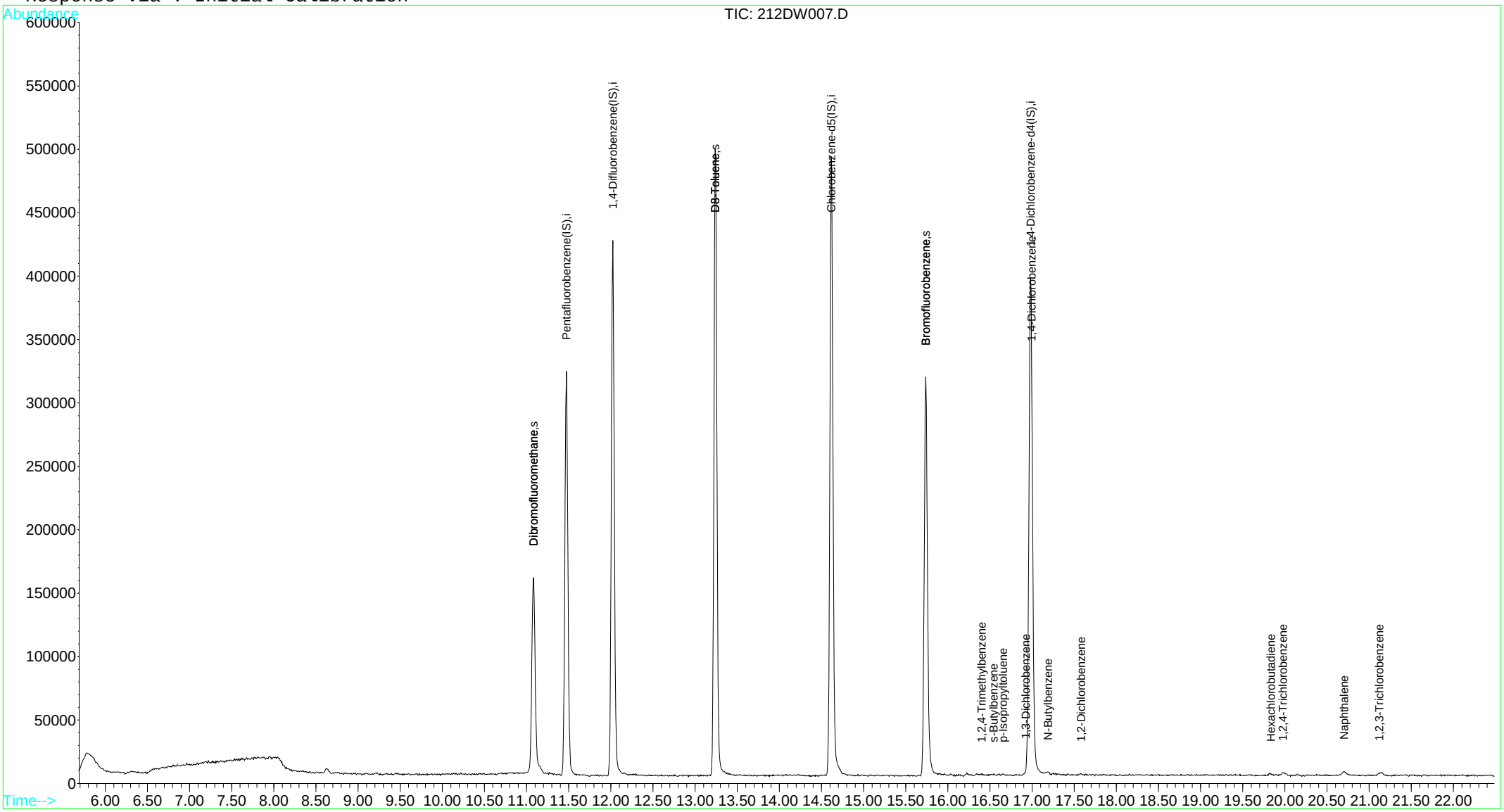
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	422590	52.06 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	169332	42.26 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D. d	
84) 1,2,4-Trimethylbenzene	16.40	105	629	0.07 ug/kg#	29
85) s-Butylbenzene	16.54	105	1137	0.10 ug/kg#	57
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.65	119	819	0.08 ug/kg#	52
88) 1,3-Dichlorobenzene	16.92	146	703	0.13 ug/kg#	24
89) 1,4-Dichlorobenzene	17.00	146	888	0.16 ug/kg#	1
90) 1,2-Dichlorobenzene	17.59	146	719	0.14 ug/kg#	24
91) N-Butylbenzene	17.19	91	1349	0.16 ug/kg#	30
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	2517	0.56 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	707	0.27 ug/kg#	8
95) Hexachlorobutadiene	19.83	225	719	0.62 ug/kg#	19
96) 1,2,3-Trichlorobenzene	21.12	180	920	0.45 ug/kg#	11

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW007.D Vial: 6
Acq On : 28 Apr 2021 10:11 am Operator: nmc
Sample : 1d28019-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 10:38 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW008.D Vial: 7
Acq On : 28 Apr 2021 10:40 am Operator: nmc
Sample : ae03252-01@100 Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 12:36 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	271119	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	433262	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	231777	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	190335	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	132299	43.67	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 87.34%			
54) D8-Toluene	13.24	98	422741	51.78	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 103.56%			
75) Bromofluorobenzene	15.74	95	170002	42.51	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 85.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D.	d	
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.	d	
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.	d	
15) Carbon disulfide	0.00	76	0	N.D.	d	
16) Methylene Chloride	0.00	84	0	N.D.	d	
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.	d	
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.	d	
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D.	d	
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	132299	43.67	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.	d	
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D.	d	
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D.	d	
43) Isobutyl Alcohol	0.00	43	0	N.D.	d	
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.	d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW008.D Vial: 7
Acq On : 28 Apr 2021 10:40 am Operator: nmc
Sample : ae03252-01@100 Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 12:36 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

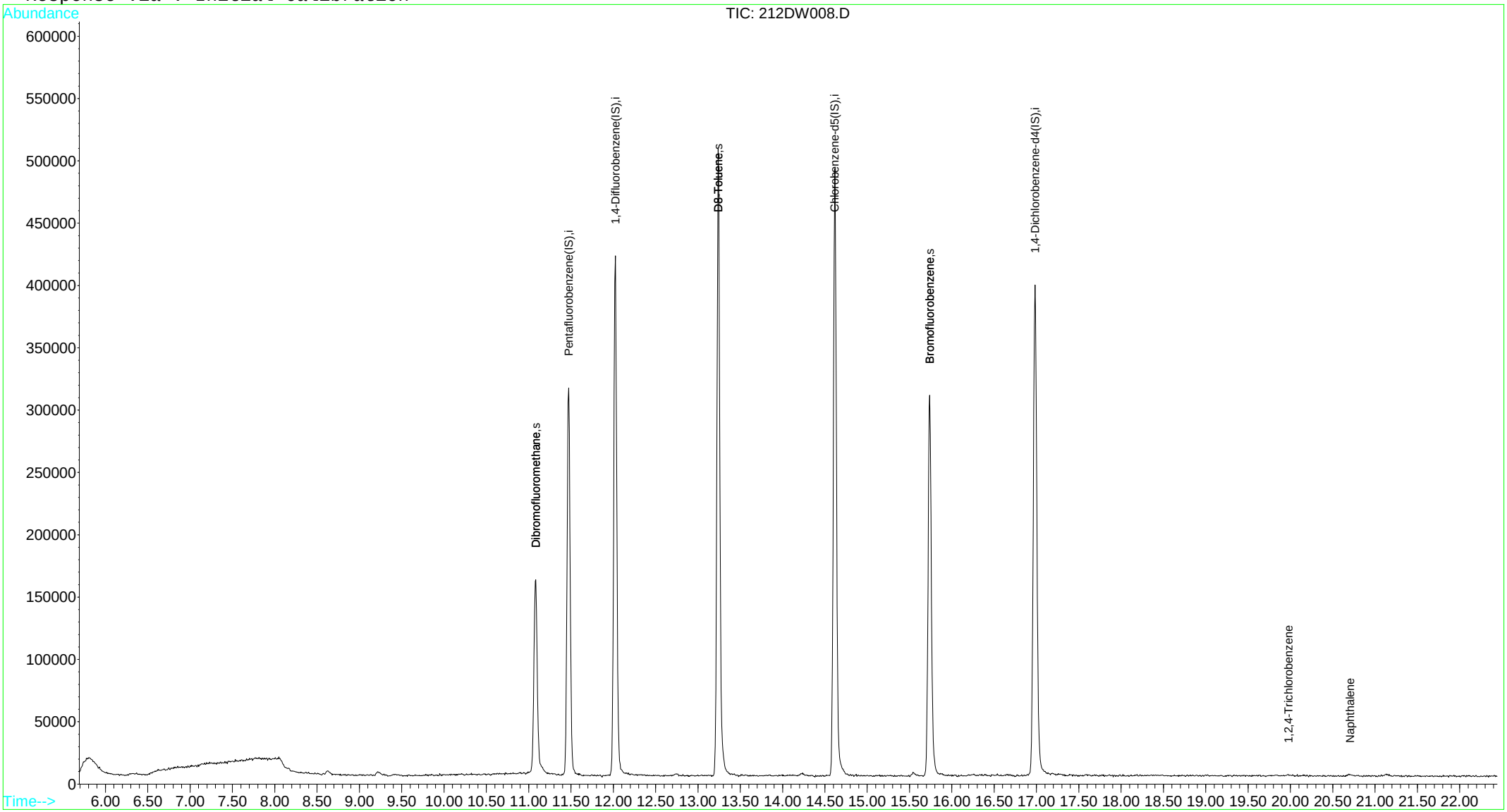
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	422741	51.78 ug/kg	94
57) Toluene	0.00	92	0	N.D. d	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	170002	42.51 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D. d	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D. d	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.71	128	2750	0.60 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	714	0.27 ug/kg#	79
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW008.D Vial: 7
Acq On : 28 Apr 2021 10:40 am Operator: nmc
Sample : ae03252-01@100 Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 12:36 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW013.D Vial: 12
Acq On : 28 Apr 2021 1:03 pm Operator: nmc
Sample : ae02766-05re2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:26 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.47	168	270060	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.02	114	429903	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	234458	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	188770	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.08	113	131381	43.53	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 87.06%			
54) D8-Toluene	13.24	98	426474	52.65	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 105.30%			
75) Bromofluorobenzene	15.74	95	171347	42.36	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 84.72%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	0.00	50	0	N.D. d		
4) Vinyl Chloride	6.59	62	18304	3.89	ug/kg	99
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	8.55	101	19279	6.67	ug/kg	92
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D. d		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D.		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	9.44	96	1606	0.56	ug/kg	86
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	199795	64.55	ug/kg	96
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D.		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D. d		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.08	113	131381	43.53	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	11.55	78	2960	0.32	ug/kg#	28
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.05	130	190629	69.07	ug/kg	99
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D.		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\042821\212DW013.D Vial: 12
Acq On : 28 Apr 2021 1:03 pm Operator: nmc
Sample : ae02766-05re2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:26 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

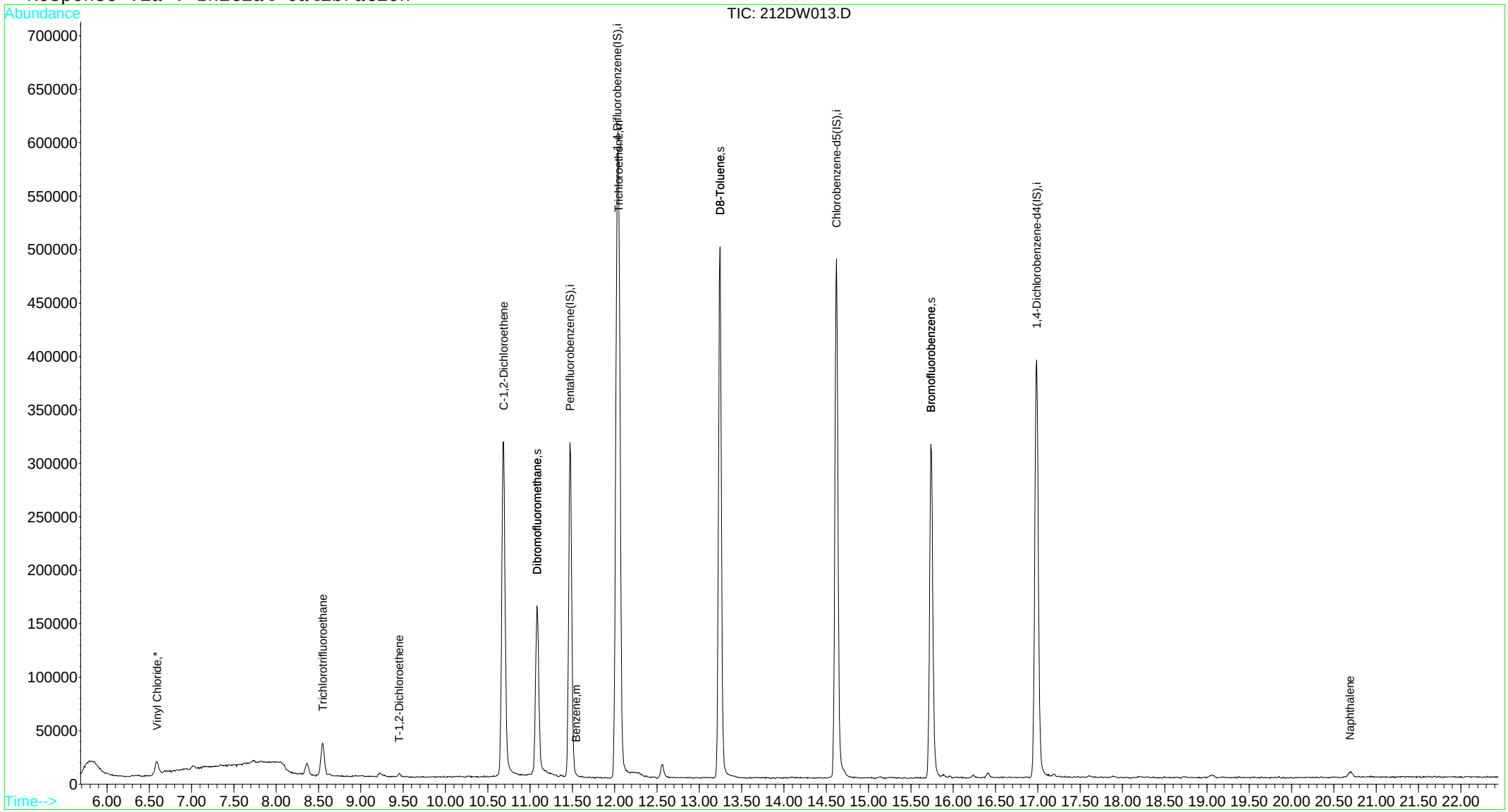
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.24	98	426474	52.65 ug/kg	94
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	171347	42.36 ug/kg#	85
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D. d	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D. d	
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.69	128	10008	2.20 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\042821\212DW013.D Vial: 12
Acq On : 28 Apr 2021 1:03 pm Operator: nmc
Sample : ae02766-05re2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:26 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal 2103054
Last Update : Tue Apr 27 11:45:54 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA66142

Instrument: OVGCMS5

Calibration ID: 2103152

Printed: 4/28/2021 1:42:13PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA66142-CCV1	QC		1		A1D1138	A1D0593		
1D28033-BS1	QC		2			A1D0593		
1D28033-BLK1	QC		3			A1D0593		
AA66142-CRL1	QC		4		A1D1139	A1D0593		
AE02766-05RE1	60D TCL SOM01.2 CLP-LIK	C	5			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr1x overdilute Re-extract added 4/28/2
AE02766-18RE1	60D TCL SOM01.2 CLP-LIK	C	6			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr10,000x TCE Re-extract added 4/28/2
AE03539-01	60D TCL SOM01.2 CLP-LIK	G	7			A1D0593		BatchQC
AE03539-01	8260D Arom + Naph	G	8			A1D0593		BatchQC
AE03539-01	8260D Appendix 1 FL	G	9			A1D0593		
AE03539-01	8260D Arom	G	10			A1D0593		BatchQC
AE03540-01	8260D Appendix 1 FL	G	11			A1D0593		
AE02994-02	8260D Arom + Naph	A	12			A1D0593		Benzene and Naph only, 1x if possible.
AE02994-01	8260D Arom + Naph	G	13			A1D0593		run1x nc4/28/21 FOAM!! Benzene and
AE03534-01	8260D Appendix 1 FL	G	14			A1D0593		
AE03534-02	8260D Appendix 1 FL	A	15			A1D0593		
AE02995-02	8260D Arom + Naph	B	16			A1D0593		Benzene and Naph only, 1x if possible.
AE02995-01	8260D Arom + Naph	F	17			A1D0593		run1x nc4/28/21 Benzene and Naph on
AE03537-01	8260D Appendix 1 FL	G	18			A1D0593		
AE03537-02	8260D Appendix 1 FL	A	19			A1D0593		
AE03542-01	8260D Appendix 1 FL	G	20			A1D0593		
AE03549-01	8260D Appendix 1 FL	G	21			A1D0593		
1D28033-MS1	QC		22			A1D0593		
1D28033-MSD1	QC		23			A1D0593		

rr1x rerun 1202

Samples Loaded By 04/28/21 Date

Data Processed By 5/4/21 Date

ANALYSIS SEQUENCE

AA66142

Instrument: OVGCMS5

Calibration ID: 2103152

Printed: 4/28/2021 1:42:13PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AE02476-01	8260D Arom	D	24			A1D0593		hist1x nc4/28/21
AE02476-02	8260D Arom	C	25			A1D0593		hist5x nc4/28/21 Dr 1x overd.(ur
AE02476-03	8260D Arom	E	26			A1D0593		hist1x nc4/28/21 Only Two Vials Recei

Samples Loaded By — Date 04/28/21

Data Processed By — Date 04/28/21

PREPARATION BENCH SHEET

Printed: 4/28/2021 1:08:16PM

1D28033

ENCO Orlando

Analysis
8260D Appendix 1 FL [EPA 8260D]
8260D Arom [EPA 8260D]
8260D Arom + Naph [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
___ A1B1158 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1D28033-BLK1		Blank		QC			5	5			5	
1D28033-BS1		LCS		QC			5	5	A1D1159 A1D1060	2 2	5	
1D28033-MS1		Matrix Spike [AE03539-01]		QC	<2	N	5	5	A1D1159 A1D1060	2 2	5	
1D28033-MSD1		Matrix Spike Dup [AE03539-01]		QC	<2	N	5	5	A1D1159 A1D1060	2 2	5	
AE02476-01		MW-7 D[MS25	05-May-21	8260D Arom	<2	N	5	5			5	hist1x nc4/28/21
AE02476-02		MW-9 C[MS25	05-May-21	8260D Arom	<2	N	5	5			5	hist5x nc4/28/21
AE02476-03		MW-12 E[MS25	05-May-21	8260D Arom	<2	N	5	5			5	hist1x nc4/28/21 Only Two Vials Received. 04/28/21 DC
AE02766-05RE1	C	HMPN-MW0030-025.0-20210403 C[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr1x overdilute Re-extract added 4/28/2021 by NMC
AE02766-18RE1	C	HMPN-MW0028-047.5-20210421 C[MS50	29-Apr-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	rr10,000x TCE Re-extract added 4/28/2021 by NMC
AE02994-01		MW-21S G[MS23	04-May-21	8260D Arom + Naph	6	N	5	5			5	run1x nc4/28/21 FOAM!! Benzene and Naph only, 1x if possible. JAJ 4/21/20.
AE02994-02		TRIP BLANK A[MS23	04-May-21	8260D Arom + Naph	<2	N	5	5			5	Benzene and Naph only, 1x if possible, JAJ 4/21/20.
AE02995-01		MW-49S F[MS23	04-May-21	8260D Arom + Naph	6	N	5	5			5	run1x nc4/28/21 Benzene and Naph only, 1x if possible. JAJ 4/21/20.
AE02995-02		TRIP BLANK B[MS23	04-May-21	8260D Arom + Naph	<2	N	5	5			5	Benzene and Naph only, 1x if possible, JAJ 4/21/20.
AE03534-01		DUPLICATE G[MS24	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	
AE03534-02		TRIP BLANK A[MS24	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	

PREPARATION BENCH SHEET

Printed: 4/28/2021 1:08:16PM

1D28033

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A1B1158 8260 surr working (lower conc.)

Spiking Solution
A1D1060 8260 2nd source Gases/Acrolein virtual
A1D1159 8260 2nd source Mega Mix(no acetonitrile)

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location		Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE03537-01		MW-3S	G[MS24	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	
AE03537-02		TRIP BLANK	A[MS24	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	
AE03539-01		MW-53S	G[MS24	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	
AE03539-01		MW-53S	G[MS24		8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	Added for BatchQC in: 1D28033
AE03539-01		MW-53S	G[MS24		8260D Arom	<2	N	5	5			5	Added for BatchQC in: 1D28033
AE03539-01		MW-53S	G[MS24		8260D Arom + Naph	<2	N	5	5			5	Added for BatchQC in: 1D28033
AE03540-01		MW-54S	G[MS25	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	
AE03542-01		MW-54I	G[MS25	04-May-21	8260D Appendix 1 FL	<2	N	5	5			5	
AE03549-01		MW-4S	G[MS25	05-May-21	8260D Appendix 1 FL	<2	N	5	5			5	

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5
EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 04/28/21
StopDate 04/28/21
Instrument ID VGCMS5

Samples Prepared By Date 04/28/21

Samples Prepared By Date

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1C1135	P&T Anti-Foam working solution	N/A

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

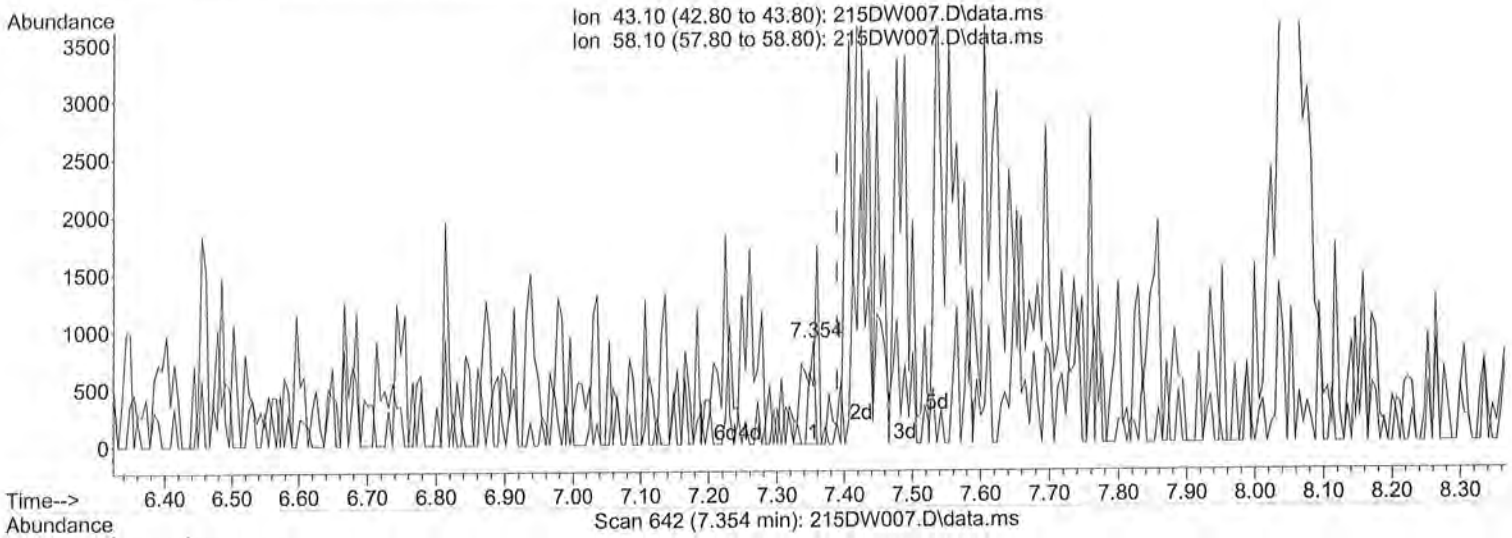
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

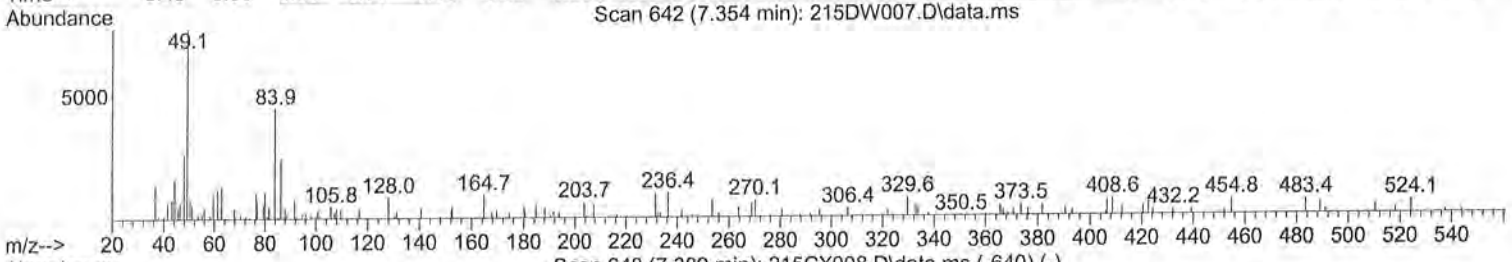
Instrument ID:	OVGCMS.5
Sequence/Batch ID:	ID28033 / AA66142
Data File Prefix:	215DW
Date and Time Range of MIs:	04/29/21
Reviewer Print Name:	Neil Christians
Reviewer Signature:	
Date of Review:	4/29/21

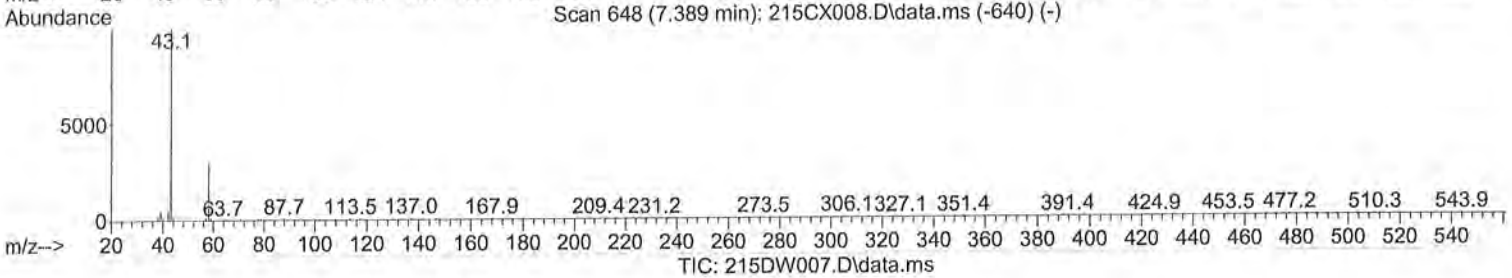
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW007.D
Acq On : 28 Apr 2021 10:44 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 28 14:44:50 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration







TIC: 215DW007.D\data.ms

(15) Acetone

7.354min (-0.035) 1.05 ug/L

response 1019

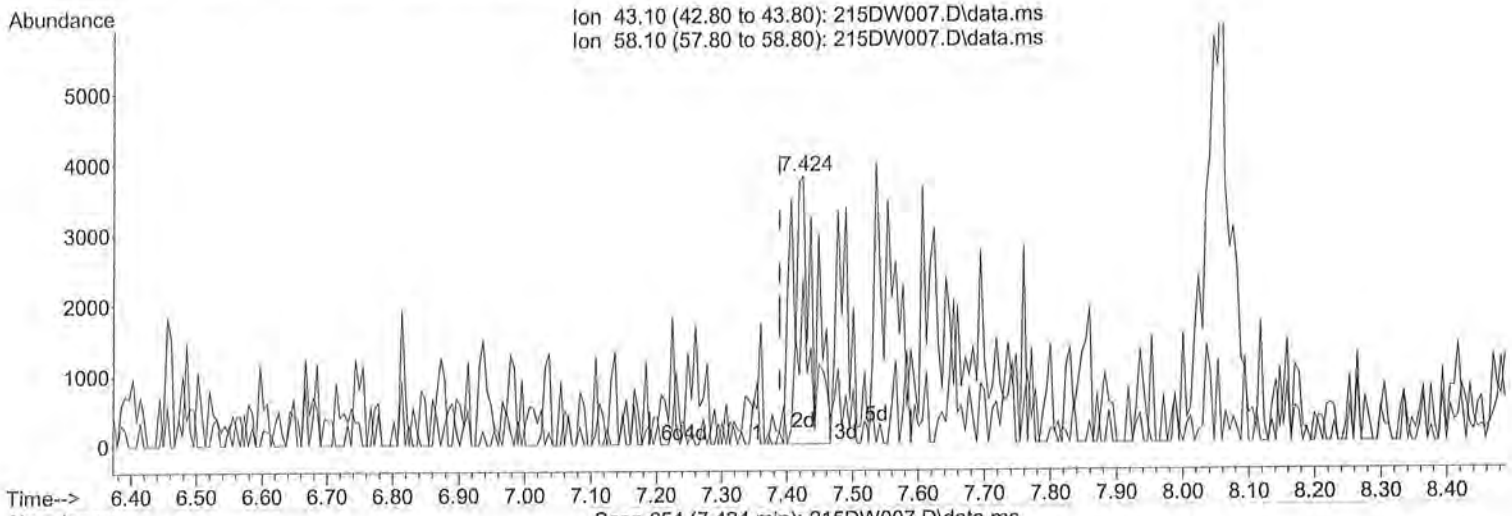
Ion	Exp%	Act%
43.10	100.00	100.00
58.10	33.10	104.22#
0.00	0.00	0.00
0.00	0.00	0.00

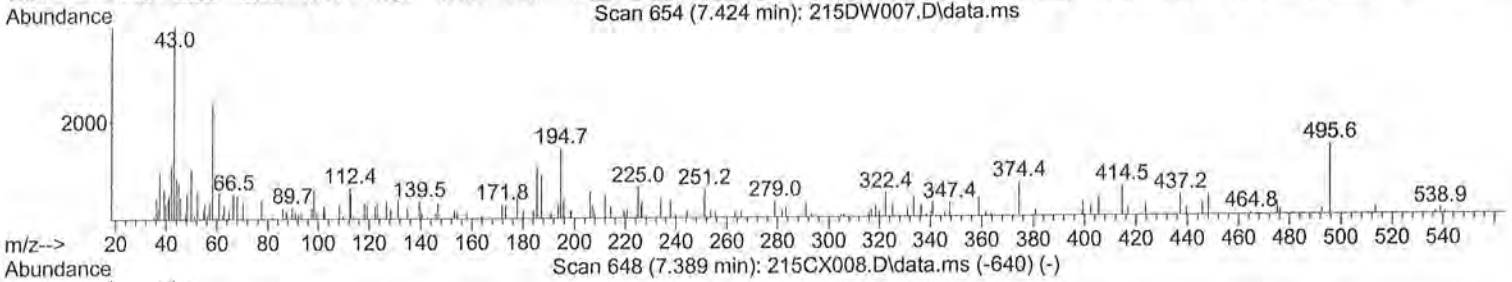
[X] Integration [ ] Manual Integration
[ ] Reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Wrong peak selection/Peak not found
[ ] Poor integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date KJ 04/29/21
Review by/Date:

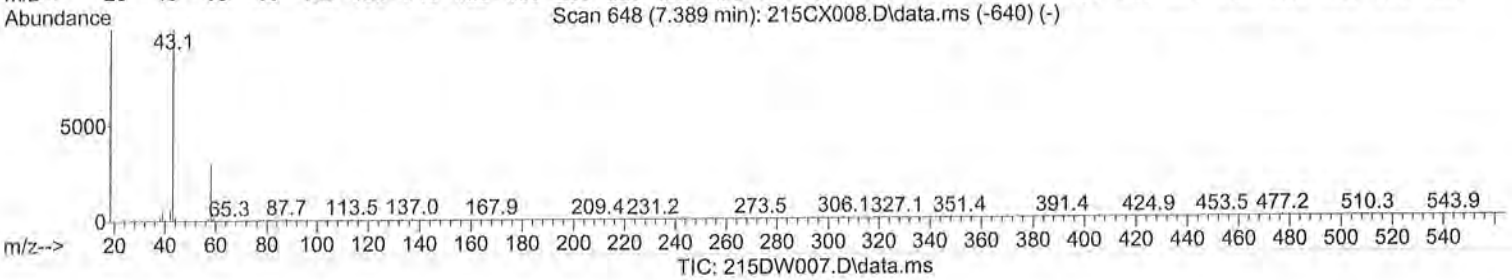
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW007.D
Acq On : 28 Apr 2021 10:44 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 28 14:44:50 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration







TIC: 215DW007.D\data.ms

(15) Acetone

7.424min (+ 0.035) 9.34 ug/L m

response 9220

Ion	Exp%	Act%
43.10	100.00	100.00
58.10	33.10	11.52#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date KKW 04/28/21

Review by/Date:

Sequence Name: C:\msdchem\1\sequence\215DW.s
Comment:
Operator: kkw
Data Path: C:\msdchem\1\DATA\042821\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample	Name/Misc Info		
1)	Sample	1	215DW001	8260S	rinse
2)	Sample	2	215DW002	8260S	CCV1
3)	Sample	2	215DW003	8260S	CCV1
4)	Sample	3	215DW004	8260S	BS1 - reprep, rerun, possible prep or purge error
5)	Sample	4	215DW005	8260S	RINSE
6)	Sample	5	215DW006	8260S	BLK1
7)	Sample	6	215DW007	8260S	CRL1
8)	Sample	7	215DW008	8260S	1D28033-BS1
9)	Sample	8	215DW009	8260S	AE02766-05RE1
10)	Sample	9	215DW010	8260S	AE02766-18RE1@10,000X
11)	Sample	10	215DW011	8260S	AE03539-01
12)	Sample	11	215DW012	8260S	AE03540-01
13)	Sample	12	215DW013	8260S	AE02994-02
14)	Sample	13	215DW014	8260S	AE02994-01
15)	Sample	14	215DW015	8260S	AE03534-01
16)	Sample	15	215DW016	8260S	AE03534-02
17)	Sample	16	215DW017	8260S	AE02995-02
18)	Sample	17	215DW018	8260S	AE02995-01
19)	Sample	18	215DW019	8260S	AE03537-01
20)	Sample	19	215DW020	8260S	AE03537-02
21)	Sample	20	215DW021	8260S	AE03542-01
22)	Sample	21	215DW022	8260S	AE03549-01
23)	Sample	22	215DW023	8260S	1D28033-MS1
24)	Sample	22	215DW024	8260S	1D28033-MSD1
25)	Sample	23	215DW025	8260S	AE02476-01
26)	Sample	24	215DW026	8260S	AE02476-02@5X
27)	Sample	25	215DW027	8260S	AE02476-03

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW003.D
Acq On : 28 Apr 2021 8:52 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 28 10:14:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1181199	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2655892	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1710514	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1362099	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	706690	57.62	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 115.24%				
52) D8-Toluene	11.784	98	3068594	52.68	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.36%				
73) Bromofluorobenzene	14.328	95	1373052	46.01	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 92.02%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	702481	49.53	ug/L		98
3) Chloromethane	4.404	50	671611	63.54	ug/L		97
4) Vinyl Chloride	4.580	62	671402	56.17	ug/L		92
5) Bromomethane	5.227	94	263839	55.91	ug/L		97
6) Chloroethane	5.450	64	421663	63.29	ug/L		96
7) Trichlorofluoromethane	5.703	101	1001361	58.80	ug/L		99
8) Diethyl ether	6.184	59	430942	58.45	ug/L		99
9) 1,1-Dichloroethene	6.537	96	501147	52.20	ug/L		95
10) Trichlorotrifluoroethane	6.555	151	355616	46.16	ug/L		97
11) Acrolein	7.013	56	1017282	612.17	ug/L		98
12) Iodomethane	6.778	142	4005718	318.72	ug/L		99
13) Carbon Disulfide	6.619	76	9574820	316.57	ug/L		99
14) 3-chloropropene	7.195	41	881752	68.18	ug/L	#	83
15) Acetone	7.395	43	517419	293.80	ug/L		92
16) Methylene Chloride	7.336	84	630567	56.56	ug/L		82
17) Methyl Acetate	7.524	43	270975	60.43	ug/L	#	90
18) t-1,2-Dichloroethene	7.548	96	603625	53.08	ug/L		89
19) Methyl tert-butyl ether	7.630	73	1487448	56.65	ug/L		94
20) Acetonitrile	8.018	41	840546	658.11	ug/L		93
21) Isopropyl ether	8.047	45	1797057	64.77	ug/L		93
22) Chloroprene	8.270	88	678161	62.75	ug/L		98
23) 1,1-Dichloroethane	8.311	63	1233422	62.59	ug/L		99
24) Acrylonitrile	8.382	53	1777609	609.32	ug/L		96
25) Vinyl Acetate	8.541	43	5738289	322.42	ug/L		97
26) c-1,2-Dichloroethene	8.952	96	718672	55.32	ug/L		94
27) 2,2-Dichloropropane	9.075	77	991950	52.56	ug/L		98
28) Bromochloromethane	9.187	128	277017	46.53	ug/L		96
29) Cyclohexane	9.193	56	1086243	58.99	ug/L		89
30) Chloroform	9.222	83	1234735	53.35	ug/L		99
32) Dibromofluoromethane	9.428	113	706690	57.62	ug/L	#	90
33) 2-Butanone	9.545	72	331247	303.95	ug/L		86
34) 1,1,1-Trichloroethane	9.486	97	1006447	51.02	ug/L		97
35) 1,1-Dichloropropene	9.610	75	1020558	59.07	ug/L		97
36) Propionitrile	9.898	54	742542	645.62	ug/L		89
37) Methacrylonitrile	9.910	41	3474102	641.90	ug/L		99
38) Isobutyl Alcohol	9.904	43	798024	1256.06	ug/L	#	92
40) Carbon Tetrachloride	9.410	117	949405	54.57	ug/L		83
41) Benzene	9.874	78	2910331	53.53	ug/L		96
42) 1,2-Dichloroethane	10.092	62	913384	49.04	ug/L		95
43) Trichloroethene	10.456	130	695384	51.13	ug/L		98
44) Methyl cyclohexane	10.456	83	1330096	49.68	ug/L		95
45) Dibromomethane	10.903	93	384652	48.94	ug/L		93
46) 1,2-Dichloropropane	10.985	63	699410	55.44	ug/L		90
47) Bromodichloromethane	11.020	83	862319	49.22	ug/L		97
48) Methyl Methacrylate	11.079	69	385614	54.03	ug/L		95
49) 1,4-Dioxane	11.202	88	75830	1074.29	ug/L	#	65
50) 2-Chloroethyl vinyl ether	11.490	63	1540671	225.50	ug/L		91
51) C-1,3-Dichloropropene	11.613	75	1221656	52.36	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW003.D
Acq On : 28 Apr 2021 8:52 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 28 10:14:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

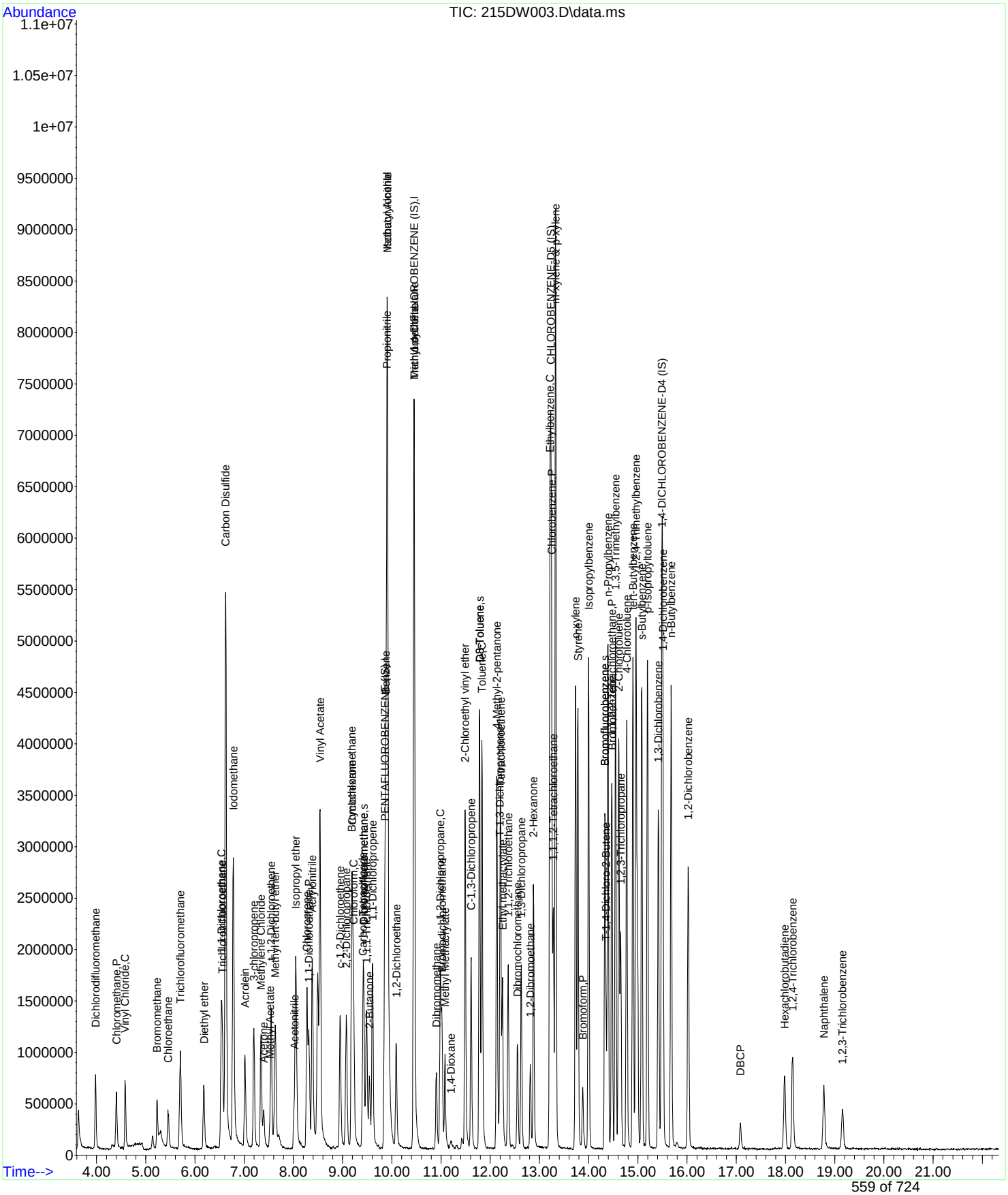
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3068594	52.68	ug/L		94
54) 4-Methyl-2-pentanone	12.131	100	438609	283.03	ug/L		88
56) Toluene	11.831	92	1836085	48.98	ug/L		99
57) T-1,3-Dichloropropene	12.195	75	1029101	49.60	ug/L		98
58) Tetrachloroethene	12.213	164	478570	44.76	ug/L		96
59) Ethyl methacrylate	12.248	69	837276	54.40	ug/L		99
60) 1,1,2-Trichloroethane	12.366	97	611231	50.02	ug/L		98
61) Dibromochloromethane	12.554	129	594047	45.25	ug/L		98
62) 1,3-Dichloropropane	12.630	76	1108378	51.02	ug/L		95
63) 1,2-Dibromoethane	12.812	107	584136	46.94	ug/L		100
64) 2-Hexanone	12.877	43	1568762	290.46	ug/L		98
65) Ethylbenzene	13.212	106	1168576	50.32	ug/L		98
66) Chlorobenzene	13.247	112	2016717	50.44	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.282	131	642316	47.54	ug/L		97
68) m-xylene & p-xylene	13.329	106	2844370	94.46	ug/L		98
69) o-xylene	13.735	106	1369491	48.09	ug/L		97
70) Styrene	13.782	104	2239343	48.63	ug/L		95
71) Bromoform	13.881	173	251185	38.07	ug/L		90
72) Isopropylbenzene	13.999	105	3460252	48.12	ug/L		98
74) Bromofluorobenzene	14.328	95	1373052	46.01	ug/L	#	76
75) n-Propylbenzene	14.393	91	4353603	47.28	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	736195	44.82	ug/L		100
77) 1,2,3-Trichloropropane	14.651	61	160890	52.49	ug/L	#	82
78) T-1,4-Dichloro-2-Butene	14.351	53	244493	44.00	ug/L		99
80) Bromobenzene	14.475	156	644405	44.37	ug/L		80
81) 1,2,4-Trimethylbenzene	14.963	105	3267306	53.14	ug/L		99
82) 2-Chlorotoluene	14.610	91	2662197	54.44	ug/L		97
83) 4-Chlorotoluene	14.775	91	2909441	55.30	ug/L		97
84) tert-Butylbenzene	14.898	119	2572457	52.25	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	2954716	48.99	ug/L		100
86) p-Isopropyltoluene	15.198	119	3211838	49.62	ug/L		100
87) s-Butylbenzene	15.080	105	3750975	49.88	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	1459532	47.90	ug/L		93
89) 1,4-Dichlorobenzene	15.509	146	1542743	50.37	ug/L		95
90) n-Butylbenzene	15.673	91	3089604	53.92	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	1339929	50.75	ug/L		95
92) DBCP	17.084	157	79635	44.47	ug/L		92
93) Hexachlorobutadiene	17.983	225	150669	50.83	ug/L		95
94) 1,2,4-Trichlorobenzene	18.141	180	379304	56.35	ug/L		98
95) Naphthalene	18.782	128	803487	59.97	ug/L		99
96) 1,2,3-Trichlorobenzene	19.152	180	178242	61.08	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW003.D
Acq On : 28 Apr 2021 8:52 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 28 10:14:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW004.D
Acq On : 28 Apr 2021 9:21 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 28 10:15:15 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1178723	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2600588	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1550511	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1364225	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	760060	62.10	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 124.20%				
52) D8-Toluene	11.778	98	3424711	60.04	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 120.08%#				
73) Bromofluorobenzene	14.328	95	1505945	55.67	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 111.34%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	276891	19.56	ug/L		99
3) Chloromethane	4.404	50	274475	33.21	ug/L		100
4) Vinyl Chloride	4.580	62	299027	27.91	ug/L		95
5) Bromomethane	5.232	94	83565	20.22	ug/L	#	91
6) Chloroethane	5.456	64	185074	27.84	ug/L		93
7) Trichlorofluoromethane	5.703	101	353599	20.81	ug/L		94
8) Diethyl ether	6.178	59	199220	32.10	ug/L		94
9) 1,1-Dichloroethene	6.531	96	264152	27.57	ug/L		94
10) Trichlorotrifluoroethane	6.549	151	161957	21.06	ug/L		92
11) Acrolein	7.019	56	135707	125.59	ug/L		85
12) Iodomethane	6.778	142	407517	32.49	ug/L		98
13) Carbon Disulfide	6.625	76	908005	30.08	ug/L		97
14) 3-chloropropene	7.195	41	382859	37.17	ug/L	#	85
15) Acetone	7.401	43	232105	159.86	ug/L		98
16) Methylene Chloride	7.336	84	320886	31.73	ug/L	#	78
17) Methyl Acetate	7.518	43	134887	38.05	ug/L	#	88
18) t-1,2-Dichloroethene	7.547	96	286152	27.48	ug/L		90
19) Methyl tert-butyl ether	7.624	73	638913	28.67	ug/L	#	95
20) Acetonitrile	8.047	41	150540	174.03	ug/L	#	81
21) Isopropyl ether	8.047	45	809160	36.34	ug/L		92
22) Chloroprene	8.270	88	276345	30.23	ug/L		99
23) 1,1-Dichloroethane	8.311	63	543446	31.84	ug/L		98
24) Acrylonitrile	8.388	53	85275	42.47	ug/L	#	99
25) Vinyl Acetate	8.546	43	377682	31.98	ug/L		100
26) c-1,2-Dichloroethene	8.946	96	327425	28.05	ug/L		90
27) 2,2-Dichloropropane	9.075	77	447253	25.77	ug/L		97
28) Bromochloromethane	9.181	128	130467	21.96	ug/L		92
29) Cyclohexane	9.193	56	551824	34.49	ug/L		89
30) Chloroform	9.222	83	575615	24.92	ug/L		92
32) Dibromofluoromethane	9.428	113	760060	62.10	ug/L	#	87
33) 2-Butanone	9.545	72	137071	150.92	ug/L		81
34) 1,1,1-Trichloroethane	9.481	97	467294	23.74	ug/L		96
35) 1,1-Dichloropropene	9.610	75	407212	26.04	ug/L		95
36) Propionitrile	9.904	54	36345	49.59	ug/L	#	1
37) Methacrylonitrile	9.909	41	216576	56.29	ug/L	#	66
38) Isobutyl Alcohol	9.904	43	224373	459.53	ug/L	#	71
40) Carbon Tetrachloride	9.416	117	373135	21.90	ug/L		85
41) Benzene	9.874	78	1266842	23.80	ug/L		99
42) 1,2-Dichloroethane	10.086	62	368844	20.22	ug/L	#	91
43) Trichloroethene	10.456	130	274210	20.59	ug/L		83
44) Methyl cyclohexane	10.456	83	576239	21.98	ug/L		91
45) Dibromomethane	10.902	93	175496	22.80	ug/L		92
46) 1,2-Dichloropropane	10.991	63	335504	29.46	ug/L	#	88
47) Bromodichloromethane	11.014	83	403941	23.55	ug/L	#	96
48) Methyl Methacrylate	11.085	69	163498	26.99	ug/L		98
49) 1,4-Dioxane	11.190	88	39485	640.85	ug/L		87
50) 2-Chloroethyl vinyl ether	11.490	63	652805	105.84	ug/L	#	93
51) C-1,3-Dichloropropene	11.608	75	497750	23.07	ug/L		100

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW004.D
Acq On : 28 Apr 2021 9:21 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 28 10:15:15 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

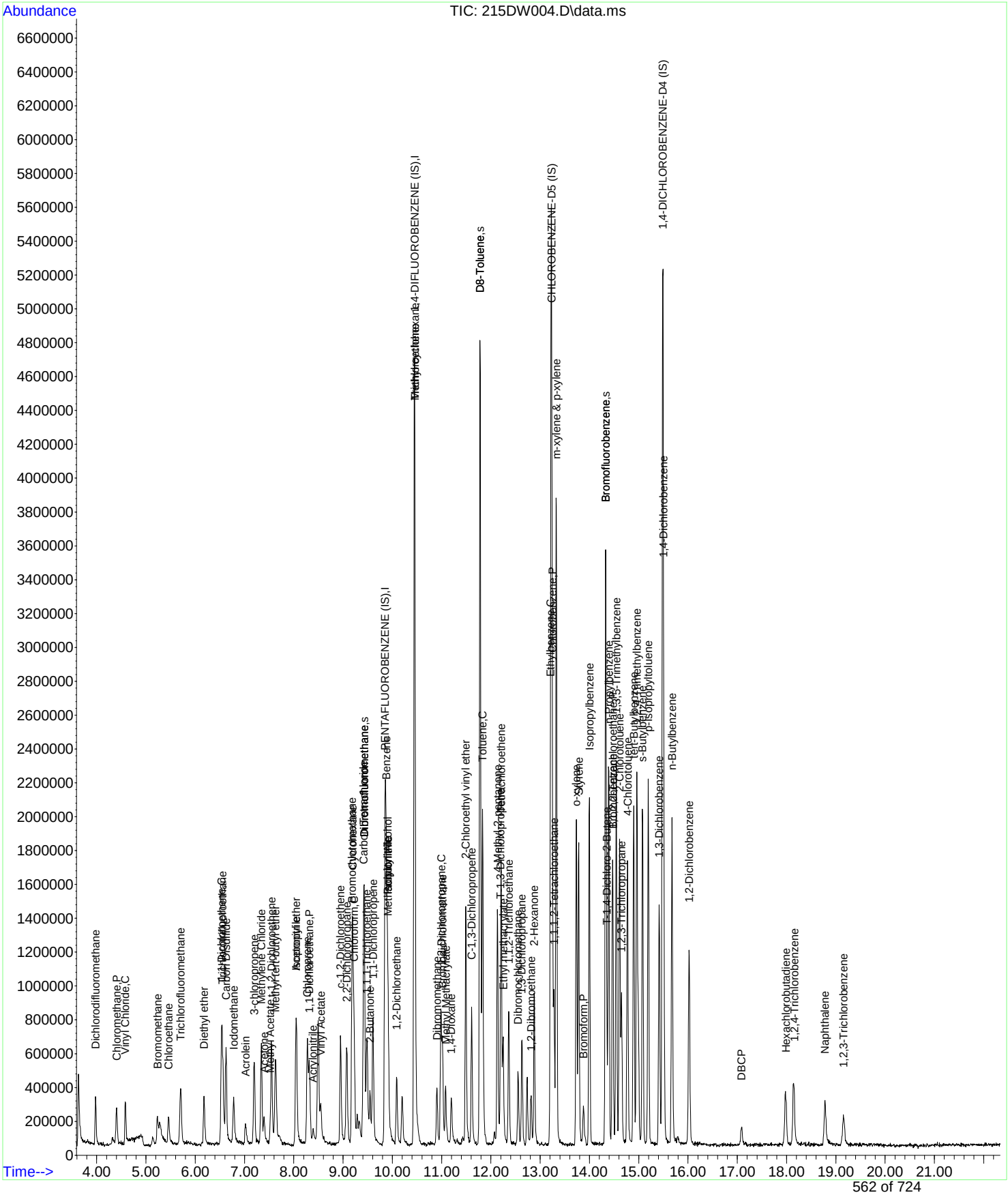
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3424711	60.04	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	164309	108.28	ug/L		80
56) Toluene	11.831	92	878233	25.85	ug/L		99
57) T-1,3-Dichloropropene	12.195	75	453569	24.11	ug/L		97
58) Tetrachloroethene	12.207	164	214428	22.13	ug/L		91
59) Ethyl methacrylate	12.248	69	345168	26.88	ug/L		98
60) 1,1,2-Trichloroethane	12.360	97	264885	23.91	ug/L		97
61) Dibromochloromethane	12.548	129	246724	20.73	ug/L	#	92
62) 1,3-Dichloropropane	12.624	76	422801	21.47	ug/L		95
63) 1,2-Dibromoethane	12.812	107	236486	20.96	ug/L		100
64) 2-Hexanone	12.877	43	601187	138.77	ug/L	#	97
65) Ethylbenzene	13.206	106	462224	21.96	ug/L		95
66) Chlorobenzene	13.247	112	790113	21.80	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	225671	18.43	ug/L		91
68) m-xylene & p-xylene	13.329	106	1172845	42.97	ug/L		97
69) o-xylene	13.729	106	551462	21.36	ug/L		99
70) Styrene	13.781	104	953203	22.84	ug/L		98
71) Bromoform	13.875	173	98790	16.52	ug/L		96
72) Isopropylbenzene	13.999	105	1477852	22.67	ug/L		96
74) Bromofluorobenzene	14.328	95	1505945	55.67	ug/L	#	75
75) n-Propylbenzene	14.393	91	1984522	23.77	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.475	83	323361	21.72	ug/L		98
77) 1,2,3-Trichloropropane	14.645	61	67707	24.37	ug/L		83
78) T-1,4-Dichloro-2-Butene	14.351	53	99726	19.80	ug/L	#	57
80) Bromobenzene	14.475	156	306768	21.09	ug/L		83
81) 1,2,4-Trimethylbenzene	14.962	105	1418698	23.83	ug/L		97
82) 2-Chlorotoluene	14.610	91	1184656	24.19	ug/L		96
83) 4-Chlorotoluene	14.774	91	1216296	24.87	ug/L		98
84) tert-Butylbenzene	14.898	119	1062404	22.66	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	1355991	23.46	ug/L		99
86) p-Isopropyltoluene	15.192	119	1368192	21.10	ug/L		99
87) s-Butylbenzene	15.074	105	1649888	21.91	ug/L		98
88) 1,3-Dichlorobenzene	15.415	146	624256	20.45	ug/L		93
89) 1,4-Dichlorobenzene	15.503	146	653701	21.31	ug/L	#	81
90) n-Butylbenzene	15.673	91	1331096	24.92	ug/L		96
91) 1,2-Dichlorobenzene	16.020	146	565240	22.38	ug/L		94
92) DBCP	17.084	157	35639	21.61	ug/L		98
93) Hexachlorobutadiene	17.988	225	62398	22.24	ug/L		88
94) 1,2,4-Trichlorobenzene	18.153	180	160088	29.19	ug/L		94
95) Naphthalene	18.776	128	343265	34.65	ug/L		97
96) 1,2,3-Trichlorobenzene	19.152	180	75090	33.97	ug/L		91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW004.D
Acq On : 28 Apr 2021 9:21 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 28 10:15:15 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW006.D
Acq On : 28 Apr 2021 10:17 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 28 14:43:38 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.851	168	1095490	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2601514	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1512947	50.00	ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1228968	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	696384	61.22	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 122.44%			
52) D8-Toluene	11.784	98	3250399	56.97	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.94%			
73) Bromofluorobenzene	14.328	95	1398942	53.00	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.881	85	1102	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.	d	
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	0.000		0	N.D.	d	
14) 3-chloropropene	0.000		0	N.D.	d	
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.	d	
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	0.000		0	N.D.	d	
22) Chloroprene	0.000		0	N.D.	d	
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.617	43	1030	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	9.046	77	1124	N.D.		
28) Bromochloromethane	9.228	128	1041	N.D.		
29) Cyclohexane	9.187	56	1150	N.D.		
30) Chloroform	9.234	83	1999	N.D.		
32) Dibromofluoromethane	9.428	113	696384	61.22	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.	d	
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	0.000		0	N.D.	d	
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.	d	
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	10.920	93	1169	N.D.		
46) 1,2-Dichloropropane	10.932	63	1874	N.D.		
47) Bromodichloromethane	10.932	83	1163	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.625	75	1542	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW006.D
Acq On : 28 Apr 2021 10:17 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 28 14:43:38 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

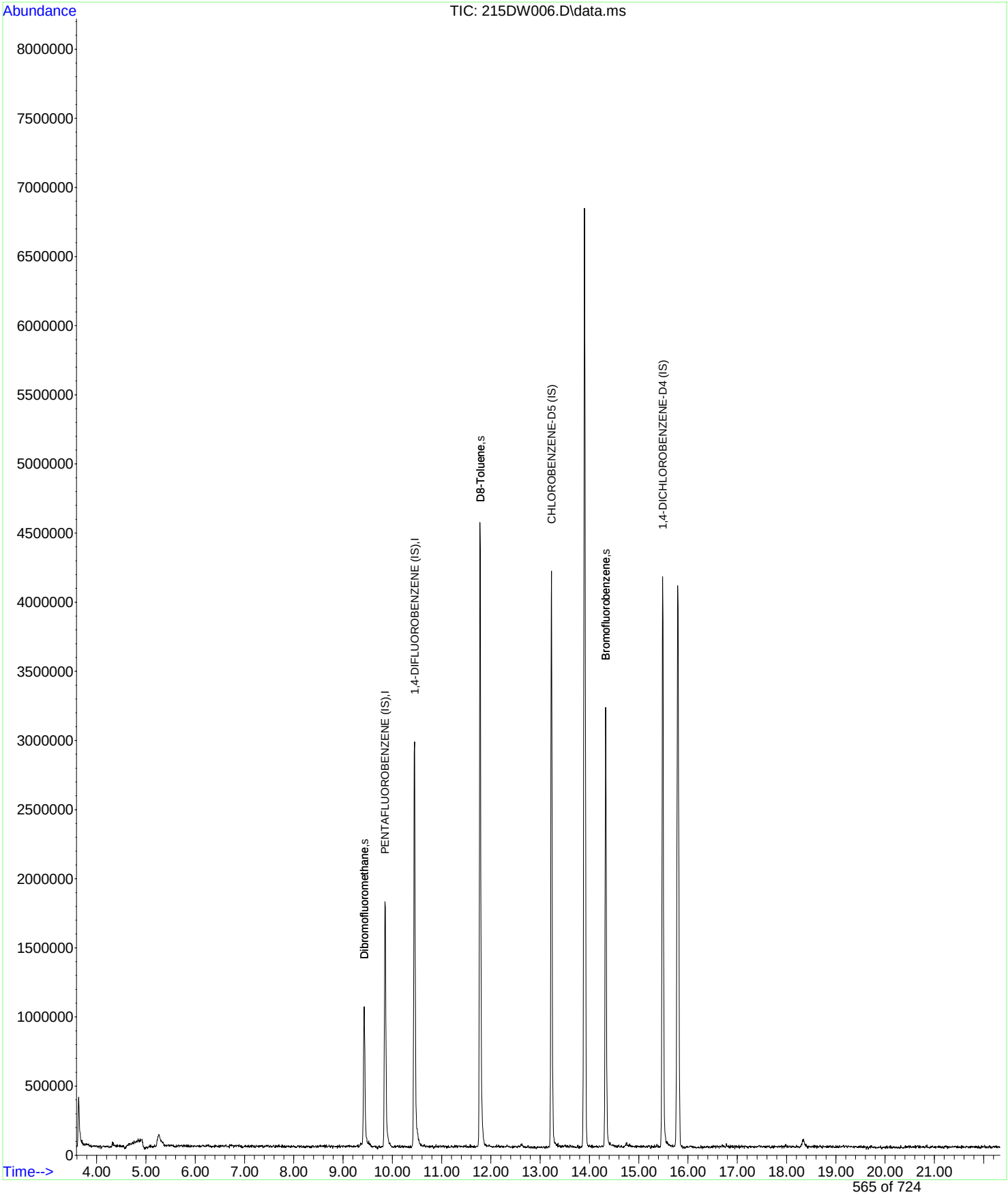
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3245993	56.89 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.878	92	1207	N.D.	
57) T-1,3-Dichloropropene	12.219	75	1489	N.D.	
58) Tetrachloroethene	12.360	164	1652	N.D.	
59) Ethyl methacrylate	12.224	69	1455	N.D.	
60) 1,1,2-Trichloroethane	12.342	97	1190	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.229	106	1119	N.D.	
66) Chlorobenzene	13.229	112	1898	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	1146	N.D.	
69) o-xylene	13.770	106	1656	N.D.	
70) Styrene	13.846	104	1136	N.D.	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	13.999	105	1721	N.D.	
74) Bromofluorobenzene	14.328	95	1398942	53.00 ug/L #	76
75) n-Propylbenzene	14.381	91	1185	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.422	83	1333	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.322	156	1385	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	1804	N.D.	
82) 2-Chlorotoluene	14.622	91	1895	N.D.	
83) 4-Chlorotoluene	14.798	91	1119	N.D.	
84) tert-Butylbenzene	14.921	119	1228	N.D.	
85) 1,3,5-Trimethylbenzene	14.481	105	1142	N.D.	
86) p-Isopropyltoluene	15.192	119	1008	N.D.	
87) s-Butylbenzene	15.080	105	3910	N.D.	
88) 1,3-Dichlorobenzene	15.432	146	2617	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	3522	N.D.	
90) n-Butylbenzene	15.732	91	1827	N.D.	
91) 1,2-Dichlorobenzene	16.032	146	1034	N.D.	
92) DBCP	0.000		0	N.D. d	
93) Hexachlorobutadiene	0.000		0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D. d	
95) Naphthalene	0.000		0	N.D. d	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW006.D
Acq On : 28 Apr 2021 10:17 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Apr 28 14:43:38 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW007.D
Acq On : 28 Apr 2021 10:44 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 28 14:44:50 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1049446	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2474176	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1509227	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1287272	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	697353	63.99	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 127.98%				
52) D8-Toluene	11.778	98	2925759	53.92	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 107.84%				
73) Bromofluorobenzene	14.328	95	1213578	46.09	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 92.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	9232	0.73	ug/L	#	84
3) Chloromethane	4.404	50	12266	2.32	ug/L		98
4) Vinyl Chloride	4.580	62	8403	0.99	ug/L	#	1
5) Bromomethane	5.227	94	13420	3.90	ug/L		88
6) Chloroethane	5.473	64	9142	1.54	ug/L	#	76
7) Trichlorofluoromethane	5.703	101	15362	1.02	ug/L		94
8) Diethyl ether	6.190	59	11367	2.60	ug/L	#	67
9) 1,1-Dichloroethene	6.543	96	11519	1.35	ug/L	#	89
10) Trichlorotrifluoroethane	6.555	151	5965	0.87	ug/L	#	78
11) Acrolein	7.036	56	15256	17.98	ug/L	#	49
12) Iodomethane	6.778	142	48720	4.36	ug/L	#	93
13) Carbon Disulfide	6.631	76	195407	7.27	ug/L		97
14) 3-chloropropene	7.201	41	19202	2.91	ug/L	#	69
15) Acetone	7.424	43	9220m	9.34	ug/L		
16) Methylene Chloride	7.330	84	16076	2.03	ug/L	#	57
17) Methyl Acetate	7.489	43	4521	2.46	ug/L	#	64
18) t-1,2-Dichloroethene	7.548	96	13482	1.60	ug/L	#	69
19) Methyl tert-butyl ether	7.647	73	27571	1.67	ug/L	#	94
20) Acetonitrile	8.053	41	9001	13.86	ug/L	#	88
21) Isopropyl ether	8.059	45	28804	2.06	ug/L		99
22) Chloroprene	8.282	88	12280	1.79	ug/L	#	95
23) 1,1-Dichloroethane	8.311	63	24874	1.92	ug/L	#	86
24) Acrylonitrile	8.376	53	2722	1.57	ug/L	#	58
25) Vinyl Acetate	8.558	43	76568	7.60	ug/L		98
26) c-1,2-Dichloroethene	8.958	96	13423	1.45	ug/L	#	63
27) 2,2-Dichloropropane	9.069	77	22784	1.60	ug/L		94
28) Bromochloromethane	9.181	128	5567	1.05	ug/L	#	69
29) Cyclohexane	9.193	56	16885	1.48	ug/L		90
30) Chloroform	9.240	83	24049	1.17	ug/L		87
32) Dibromofluoromethane	9.428	113	697948	64.05	ug/L	#	88
33) 2-Butanone	9.569	72	3008	4.59	ug/L	#	1
34) 1,1,1-Trichloroethane	9.486	97	17702	1.01	ug/L	#	79
35) 1,1-Dichloropropene	9.610	75	15163	1.18	ug/L	#	83
36) Propionitrile	9.862	54	1032	1.66	ug/L	#	1
37) Methacrylonitrile	9.909	41	56364	16.91	ug/L		91
38) Isobutyl Alcohol	9.909	43	11398	31.23	ug/L	#	87
40) Carbon Tetrachloride	9.404	117	13687	0.84	ug/L	#	74
41) Benzene	9.874	78	57942	1.14	ug/L		97
42) 1,2-Dichloroethane	10.098	62	22702	1.31	ug/L	#	80
43) Trichloroethene	10.462	130	13475	1.06	ug/L	#	1
44) Methyl cyclohexane	10.450	83	56326	2.26	ug/L	#	76
45) Dibromomethane	10.908	93	10528	1.44	ug/L	#	77
46) 1,2-Dichloropropane	10.979	63	15643	1.59	ug/L	#	87
47) Bromodichloromethane	11.020	83	16294	1.00	ug/L	#	95
48) Methyl Methacrylate	11.090	69	2255	0.46	ug/L	#	45
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	11.502	63	22717	4.17	ug/L	#	84
51) C-1,3-Dichloropropene	11.619	75	21565	1.10	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW007.D
Acq On : 28 Apr 2021 10:44 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 28 14:44:50 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

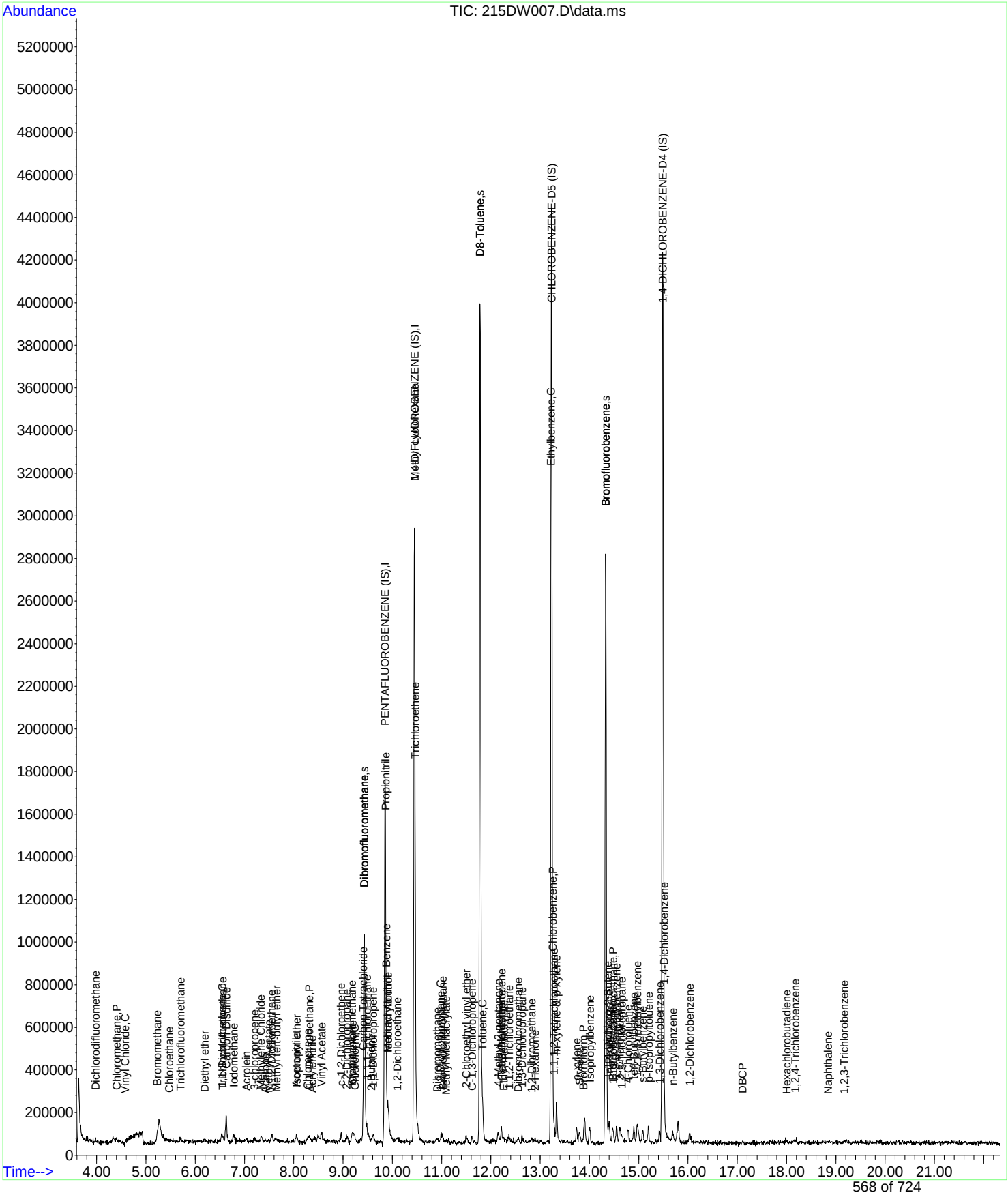
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2925759	53.92	ug/L		93
54) 4-Methyl-2-pentanone	12.154	100	5147	3.57	ug/L	#	35
56) Toluene	11.831	92	35946	1.09	ug/L		91
57) T-1,3-Dichloropropene	12.213	75	16786	0.92	ug/L	#	84
58) Tetrachloroethene	12.213	164	13268	1.41	ug/L	#	75
59) Ethyl methacrylate	12.260	69	4979	0.43	ug/L	#	61
60) 1,1,2-Trichloroethane	12.371	97	11440	1.06	ug/L	#	68
61) Dibromochloromethane	12.554	129	9476	0.82	ug/L	#	88
62) 1,3-Dichloropropane	12.630	76	21435	1.12	ug/L		91
63) 1,2-Dibromoethane	12.824	107	10562	0.96	ug/L	#	78
64) 2-Hexanone	12.894	43	19654	5.26	ug/L	#	40
65) Ethylbenzene	13.217	106	18891	0.92	ug/L	#	44
66) Chlorobenzene	13.253	112	42974	1.22	ug/L	#	82
67) 1,1,1,2-Tetrachloroethane	13.276	131	12055	1.01	ug/L		99
68) m-xylene & p-xylene	13.329	106	49871	1.88	ug/L		89
69) o-xylene	13.740	106	23854	0.95	ug/L		88
70) Styrene	13.799	104	40405	0.99	ug/L		96
71) Bromoform	13.876	173	4845	0.83	ug/L	#	64
72) Isopropylbenzene	14.011	105	56592	0.89	ug/L	#	95
74) Bromofluorobenzene	14.328	95	1213578	46.09	ug/L	#	79
75) n-Propylbenzene	14.398	91	74281	0.91	ug/L	#	93
76) 1,1,2,2-Tetrachloroethane	14.481	83	13492	0.93	ug/L	#	75
77) 1,2,3-Trichloropropane	14.657	61	3202	1.18	ug/L	#	49
78) T-1,4-Dichloro-2-Butene	14.369	53	6525	1.33	ug/L	#	1
80) Bromobenzene	14.469	156	11483	0.84	ug/L	#	47
81) 1,2,4-Trimethylbenzene	14.968	105	54380	0.99	ug/L	#	95
82) 2-Chlorotoluene	14.616	91	54583	1.18	ug/L	#	86
83) 4-Chlorotoluene	14.786	91	51156	1.18	ug/L	#	96
84) tert-Butylbenzene	14.898	119	39956	0.94	ug/L		95
85) 1,3,5-Trimethylbenzene	14.545	105	50995	0.97	ug/L	#	95
86) p-Isopropyltoluene	15.203	119	44150	0.72	ug/L	#	94
87) s-Butylbenzene	15.080	105	50567	0.71	ug/L	#	95
88) 1,3-Dichlorobenzene	15.427	146	27331	0.95	ug/L	#	87
89) 1,4-Dichlorobenzene	15.515	146	34616	1.20	ug/L	#	1
90) n-Butylbenzene	15.691	91	38228	0.81	ug/L	#	78
91) 1,2-Dichlorobenzene	16.032	146	24744	1.08	ug/L	#	90
92) DBCP	17.107	157	2105	1.47	ug/L		91
93) Hexachlorobutadiene	18.000	225	1158	0.46	ug/L	#	1
94) 1,2,4-Trichlorobenzene	18.176	180	4266	1.08	ug/L	#	65
95) Naphthalene	18.840	128	9268	1.83	ug/L	#	81
96) 1,2,3-Trichlorobenzene	19.169	180	1038	0.82	ug/L	#	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW007.D
Acq On : 28 Apr 2021 10:44 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Apr 28 14:44:50 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW008.D
Acq On : 28 Apr 2021 11:12 am
Operator : kkw
Sample : 1D28033-BS1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 28 12:57:28 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1095001	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2473381	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1540701	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1235848	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	677588	59.59	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 119.18%				
52) D8-Toluene	11.778	98	2841572	52.38	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.76%				
73) Bromofluorobenzene	14.328	95	1357137	50.49	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.98%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	245838	18.70	ug/L		96
3) Chloromethane	4.398	50	210737	28.64	ug/L		96
4) Vinyl Chloride	4.586	62	226570	23.20	ug/L		96
5) Bromomethane	5.227	94	76591	19.97	ug/L		99
6) Chloroethane	5.456	64	152089	24.63	ug/L		97
7) Trichlorofluoromethane	5.709	101	333542	21.13	ug/L		97
8) Diethyl ether	6.184	59	165793	29.33	ug/L		91
9) 1,1-Dichloroethene	6.537	96	218757	24.58	ug/L		93
10) Trichlorotrifluoroethane	6.560	151	144407	20.22	ug/L		96
11) Acrolein	7.025	56	105718	107.46	ug/L		99
12) Iodomethane	6.778	142	294039	25.24	ug/L		94
13) Carbon Disulfide	6.625	76	715742	25.53	ug/L		98
14) 3-chloropropene	7.201	41	319656	34.23	ug/L	#	85
15) Acetone	7.401	43	187231	142.66	ug/L		95
16) Methylene Chloride	7.336	84	251853	27.30	ug/L		89
17) Methyl Acetate	7.524	43	99804	32.44	ug/L	#	49
18) t-1,2-Dichloroethene	7.548	96	264333	27.34	ug/L		98
19) Methyl tert-butyl ether	7.624	73	583267	28.25	ug/L		97
20) Acetonitrile	8.047	41	129482	162.91	ug/L	#	82
21) Isopropyl ether	8.047	45	655835	32.72	ug/L		93
22) Chloroprene	8.276	88	224444	26.92	ug/L		97
23) 1,1-Dichloroethane	8.311	63	455133	29.10	ug/L	#	98
24) Acrylonitrile	8.400	53	68720	37.00	ug/L		86
25) Vinyl Acetate	8.546	43	288259	26.53	ug/L		100
26) c-1,2-Dichloroethene	8.952	96	254843	23.90	ug/L		90
27) 2,2-Dichloropropane	9.069	77	364901	22.85	ug/L	#	95
28) Bromochloromethane	9.181	128	104273	18.89	ug/L		84
29) Cyclohexane	9.193	56	443155	30.54	ug/L		86
30) Chloroform	9.216	83	457605	21.33	ug/L		99
32) Dibromofluoromethane	9.422	113	677588	59.59	ug/L	#	86
33) 2-Butanone	9.551	72	111664	135.11	ug/L		94
34) 1,1,1-Trichloroethane	9.487	97	408113	22.32	ug/L		99
35) 1,1-Dichloropropene	9.604	75	360390	24.90	ug/L		96
36) Propionitrile	9.915	54	15870	23.89	ug/L	#	1
37) Methacrylonitrile	9.915	41	162708	45.85	ug/L	#	70
38) Isobutyl Alcohol	9.904	43	188561	421.69	ug/L	#	67
40) Carbon Tetrachloride	9.410	117	375744	23.19	ug/L		83
41) Benzene	9.874	78	1115259	22.03	ug/L		100
42) 1,2-Dichloroethane	10.086	62	321751	18.55	ug/L	#	93
43) Trichloroethene	10.450	130	249920	19.73	ug/L		85
44) Methyl cyclohexane	10.450	83	518660	20.80	ug/L		94
45) Dibromomethane	10.903	93	165199	22.57	ug/L	#	88
46) 1,2-Dichloropropane	10.985	63	270077	25.28	ug/L		92
47) Bromodichloromethane	11.014	83	324729	19.90	ug/L		96
48) Methyl Methacrylate	11.079	69	125126	22.31	ug/L		96
49) 1,4-Dioxane	11.202	88	22727	414.21	ug/L	#	69
50) 2-Chloroethyl vinyl ether	11.484	63	481037	83.33	ug/L	#	95
51) C-1,3-Dichloropropene	11.608	75	396077	19.44	ug/L		97

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW008.D
Acq On : 28 Apr 2021 11:12 am
Operator : kkw
Sample : 1D28033-BS1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 28 12:57:28 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

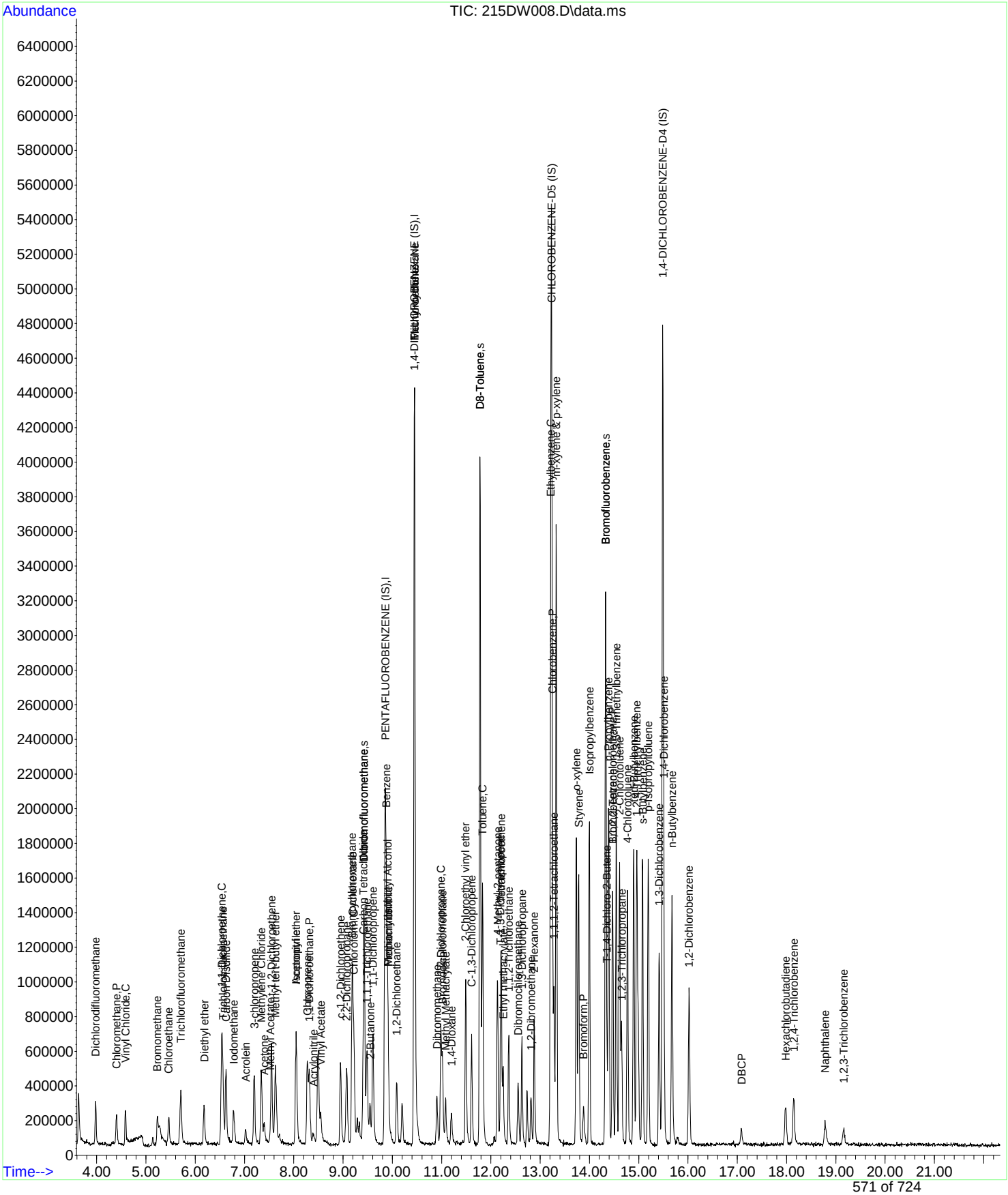
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2841572	52.38	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	129809	89.95	ug/L		95
56) Toluene	11.831	92	679817	20.14	ug/L		100
57) T-1,3-Dichloropropene	12.195	75	350767	18.77	ug/L		95
58) Tetrachloroethene	12.207	164	167865	17.43	ug/L		95
59) Ethyl methacrylate	12.248	69	257570	20.60	ug/L		95
60) 1,1,2-Trichloroethane	12.360	97	213632	19.41	ug/L		98
61) Dibromochloromethane	12.554	129	215326	18.21	ug/L		99
62) 1,3-Dichloropropane	12.630	76	369415	18.88	ug/L		95
63) 1,2-Dibromoethane	12.812	107	200110	17.85	ug/L		95
64) 2-Hexanone	12.877	43	438081	104.81	ug/L		97
65) Ethylbenzene	13.212	106	424487	20.29	ug/L		97
66) Chlorobenzene	13.247	112	756915	21.02	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.276	131	235969	19.39	ug/L		94
68) m-xylene & p-xylene	13.323	106	1089453	40.17	ug/L		99
69) o-xylene	13.735	106	545169	21.26	ug/L		94
70) Styrene	13.782	104	876729	21.14	ug/L		98
71) Bromoform	13.876	173	86592	14.57	ug/L	#	85
72) Isopropylbenzene	13.999	105	1345855	20.78	ug/L		100
74) Bromofluorobenzene	14.328	95	1357137	50.49	ug/L	#	78
75) n-Propylbenzene	14.387	91	1731996	20.88	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.469	83	270077	18.25	ug/L		96
77) 1,2,3-Trichloropropane	14.657	61	84089	30.46	ug/L	#	42
78) T-1,4-Dichloro-2-Butene	14.352	53	85208	17.03	ug/L	#	51
80) Bromobenzene	14.469	156	257659	19.55	ug/L		80
81) 1,2,4-Trimethylbenzene	14.957	105	1143104	21.26	ug/L		100
82) 2-Chlorotoluene	14.610	91	1064458	23.99	ug/L		98
83) 4-Chlorotoluene	14.769	91	1056383	23.90	ug/L		98
84) tert-Butylbenzene	14.898	119	933132	22.00	ug/L		98
85) 1,3,5-Trimethylbenzene	14.545	105	1201493	22.97	ug/L		99
86) p-Isopropyltoluene	15.192	119	1143783	19.47	ug/L		99
87) s-Butylbenzene	15.080	105	1367771	20.05	ug/L		97
88) 1,3-Dichlorobenzene	15.415	146	510893	18.48	ug/L		95
89) 1,4-Dichlorobenzene	15.509	146	548559	19.74	ug/L	#	81
90) n-Butylbenzene	15.674	91	1035543	21.59	ug/L		97
91) 1,2-Dichlorobenzene	16.014	146	440041	19.33	ug/L		95
92) DBCP	17.090	157	26925	18.26	ug/L		86
93) Hexachlorobutadiene	17.983	225	41345	16.46	ug/L	#	84
94) 1,2,4-Trichlorobenzene	18.147	180	110108	23.32	ug/L		98
95) Naphthalene	18.782	128	180191	23.71	ug/L	#	92
96) 1,2,3-Trichlorobenzene	19.158	180	41955	23.83	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW008.D
Acq On : 28 Apr 2021 11:12 am
Operator : kkw
Sample : 1D28033-BS1
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 28 12:57:28 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW009.D
Acq On : 28 Apr 2021 11:45 am
Operator : kkw
Sample : AE02766-05RE1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 28 14:49:39 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1126404	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2282085	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1366501	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1261343	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	692285	59.19 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 118.38%		
52) D8-Toluene	11.784	98	3150616	62.95 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 125.90%#		
73) Bromofluorobenzene	14.328	95	1341154	56.25 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 112.50%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.934	85	1778	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.586	62	50967	5.47 ug/L	91
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.438	64	1154	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	6.631	96	1016	N.D.	
10) Trichlorotrifluoroethane	6.549	151	43922	5.98 ug/L #	73
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.554	96	9167	1.02 ug/L #	80
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D. d	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D. d	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	0.000		0	N.D. d	
26) c-1,2-Dichloroethene	8.952	96	849195	65.98 ug/L	91
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.199	56	1389	N.D.	
30) Chloroform	9.199	83	1082	N.D.	
32) Dibromofluoromethane	9.428	113	692285	59.19 ug/L #	86
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D. d	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	9.886	78	7302	N.D.	
42) 1,2-Dichloroethane	10.086	62	2380	N.D.	
43) Trichloroethene	10.456	130	717070	61.37 ug/L	94
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D. d	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D. d	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.631	75	3124	N.D.	

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW009.D
Acq On : 28 Apr 2021 11:45 am
Operator : kkw
Sample : AE02766-05RE1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 28 14:49:39 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

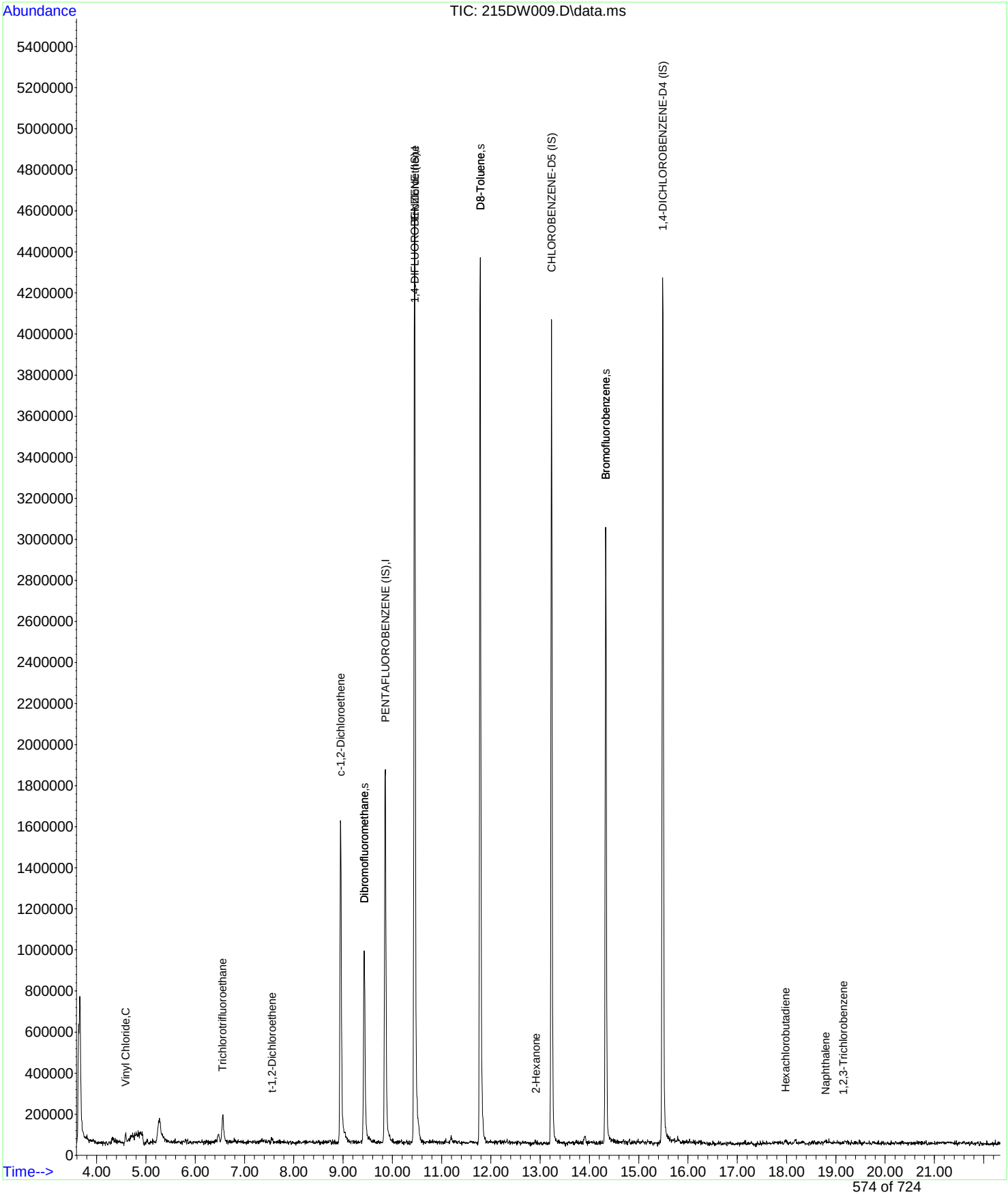
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3146639	62.87 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.825	92	2042	N.D.	
57) T-1,3-Dichloropropene	12.225	75	2162	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.219	69	1014	N.D.	
60) 1,1,2-Trichloroethane	12.313	97	1430	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.571	76	1118	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.912	43	4306	1.28 ug/L #	60
65) Ethylbenzene	13.353	106	1412	N.D.	
66) Chlorobenzene	13.265	112	3497	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.353	106	1412	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.805	104	1203	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.034	105	1993	N.D.	
74) Bromofluorobenzene	14.328	95	1341154	56.25 ug/L #	78
75) n-Propylbenzene	0.000		0	N.D. d	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D. d	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.481	156	1526	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	2838	N.D.	
82) 2-Chlorotoluene	14.634	91	4671	N.D.	
83) 4-Chlorotoluene	14.704	91	1107	N.D.	
84) tert-Butylbenzene	14.904	119	5723	N.D.	
85) 1,3,5-Trimethylbenzene	14.563	105	3788	N.D.	
86) p-Isopropyltoluene	15.186	119	2290	N.D.	
87) s-Butylbenzene	15.086	105	7004	N.D.	
88) 1,3-Dichlorobenzene	15.427	146	4815	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D. d	
90) n-Butylbenzene	15.709	91	9059	N.D.	
91) 1,2-Dichlorobenzene	16.026	146	3846	N.D.	
92) DBCP	0.000		0	N.D. d	
93) Hexachlorobutadiene	17.977	225	2244	0.90 ug/L #	42
94) 1,2,4-Trichlorobenzene	0.000		0	N.D. d	
95) Naphthalene	18.788	128	4129	0.86 ug/L #	17
96) 1,2,3-Trichlorobenzene	19.146	180	1400	1.12 ug/L #	34

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW009.D
Acq On : 28 Apr 2021 11:45 am
Operator : kkw
Sample : AE02766-05RE1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 28 14:49:39 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW010.D
Acq On : 28 Apr 2021 12:13 pm
Operator : kkw
Sample : AE02766-18RE1@10,000X
Misc : 10000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 28 14:52:31 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1098828	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2289725	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1365689	50.00	ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1237123	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	705119	61.80	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 123.60%			
52) D8-Toluene	11.778	98	3037707	60.49	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 120.98%#			
73) Bromofluorobenzene	14.328	95	1310914	55.02	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 110.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.928	85	1810	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D. d		
6) Chloroethane	0.000		0	N.D. d		
7) Trichlorofluoromethane	0.000		0	N.D. d		
8) Diethyl ether	0.000		0	N.D. d		
9) 1,1-Dichloroethene	6.519	96	1087	N.D.		
10) Trichlorotrifluoroethane	6.561	151	76248	10.64	ug/L	97
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	6.784	142	1474	N.D.		
13) Carbon Disulfide	6.631	76	3534	N.D.		
14) 3-chloropropene	7.154	41	1183	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	0.000		0	N.D. d		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	0.000		0	N.D. d		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D. d		
21) Isopropyl ether	8.071	45	1020	N.D.		
22) Chloroprene	8.229	88	1105	N.D.		
23) 1,1-Dichloroethane	8.382	63	1032	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	8.517	43	1741	N.D.		
26) c-1,2-Dichloroethene	8.946	96	13346	1.38	ug/L #	80
27) 2,2-Dichloropropane	9.240	77	1014	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.346	56	1322	N.D.		
30) Chloroform	9.222	83	1448	N.D.		
32) Dibromofluoromethane	9.428	113	705119	61.80	ug/L #	92
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D. d		
37) Methacrylonitrile	0.000		0	N.D. d		
38) Isobutyl Alcohol	0.000		0	N.D. d		
40) Carbon Tetrachloride	9.375	117	1409	N.D.		
41) Benzene	9.904	78	5881	N.D.		
42) 1,2-Dichloroethane	10.168	62	1656	N.D.		
43) Trichloroethene	10.456	130	498686	42.53	ug/L	93
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	11.038	63	1122	N.D.		
47) Bromodichloromethane	11.002	83	1026	N.D.		
48) Methyl Methacrylate	0.000		0	N.D. d		
49) 1,4-Dioxane	0.000		0	N.D. d		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW010.D
Acq On : 28 Apr 2021 12:13 pm
Operator : kkw
Sample : AE02766-18RE1@10,000X
Misc : 10000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 28 14:52:31 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

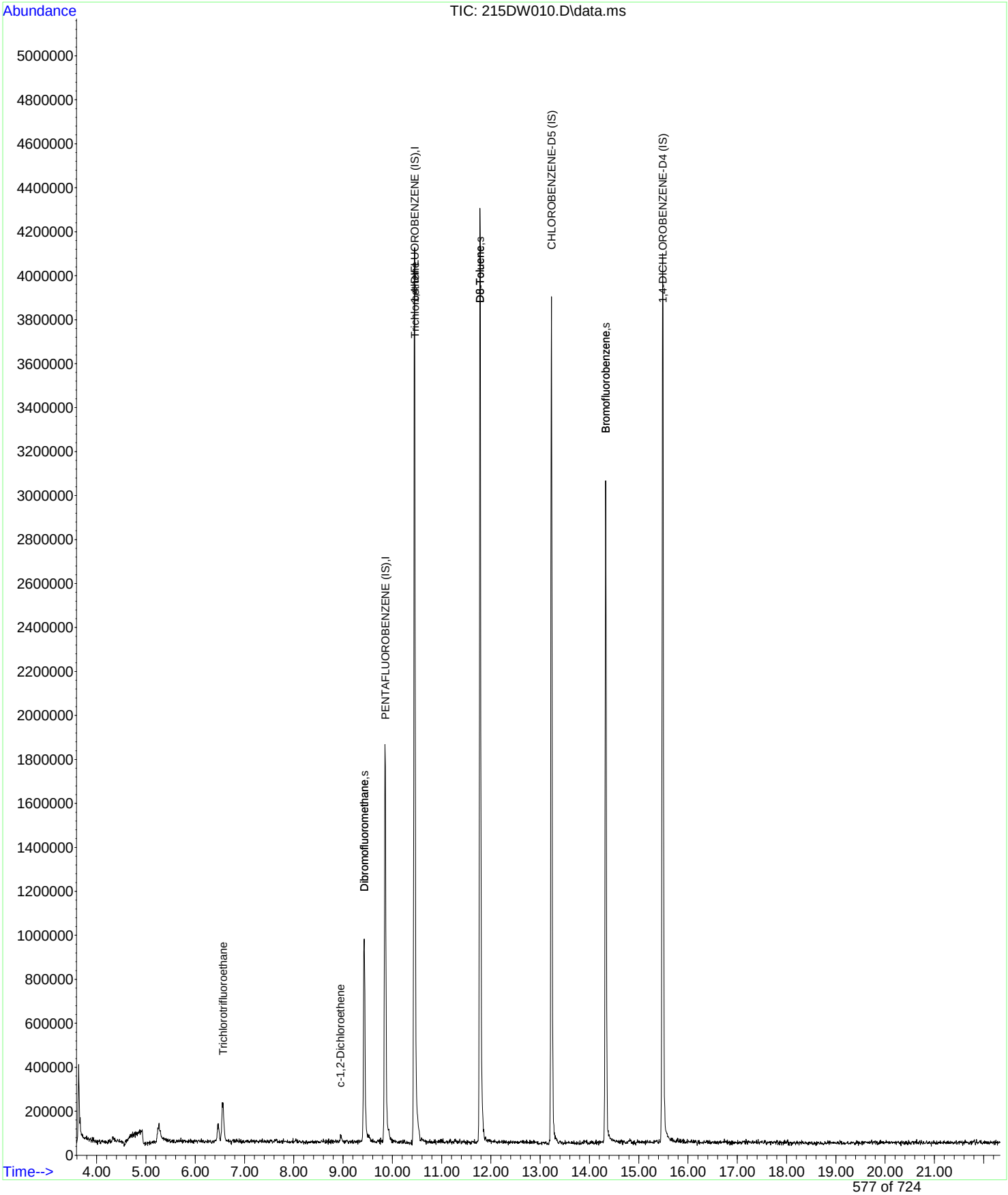
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	3037707	60.49 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.819	92	1294	N.D.	
57) T-1,3-Dichloropropene	12.230	75	1051	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.236	69	1158	N.D.	
60) 1,1,2-Trichloroethane	12.213	97	1057	N.D.	
61) Dibromochloromethane	12.401	129	1129	N.D.	
62) 1,3-Dichloropropane	12.671	76	1202	N.D.	
63) 1,2-Dibromoethane	12.877	107	1104	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.799	106	1566	N.D.	
70) Styrene	13.852	104	1047	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1311038	55.02 ug/L #	79
75) n-Propylbenzene	14.381	91	1045	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	15.086	105	1575	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.863	91	1275	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.575	105	1560	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.086	105	1629	N.D.	
88) 1,3-Dichlorobenzene	15.480	146	4429	N.D.	
89) 1,4-Dichlorobenzene	15.480	146	4429	N.D.	
90) n-Butylbenzene	15.721	91	1103	N.D.	
91) 1,2-Dichlorobenzene	16.038	146	1829	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D. d	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW010.D
Acq On : 28 Apr 2021 12:13 pm
Operator : kkw
Sample : AE02766-18RE1@10,000X
Misc : 10000
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 28 14:52:31 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW011.D
Acq On : 28 Apr 2021 12:41 pm
Operator : kkw
Sample : AE03539-01
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 28 14:53:31 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1089824	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2364178	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1392980	50.00	ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1154924	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	686926	60.70	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 121.40%			
52) D8-Toluene	11.784	98	2954595	56.98	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.96%			
73) Bromofluorobenzene	14.328	95	1230346	50.62	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.24%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.	d	
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	0.000		0	N.D.	d	
14) 3-chloropropene	0.000		0	N.D.	d	
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.	d	
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	0.000		0	N.D.	d	
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.	d	
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	0.000		0	N.D.	d	
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	0.000		0	N.D.	d	
28) Bromochloromethane	0.000		0	N.D.	d	
29) Cyclohexane	9.210	56	1551	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.428	113	687841	60.78	ug/L #	91
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	d	
35) 1,1-Dichloropropene	0.000		0	N.D.	d	
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.457	117	1042	N.D.		
41) Benzene	9.892	78	5453	N.D.		
42) 1,2-Dichloroethane	10.080	62	1039	N.D.		
43) Trichloroethene	10.450	130	1461	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.	d	
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.	d	
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
51) C-1,3-Dichloropropene	11.649	75	1046	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW011.D
Acq On : 28 Apr 2021 12:41 pm
Operator : kkw
Sample : AE03539-01
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 28 14:53:31 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

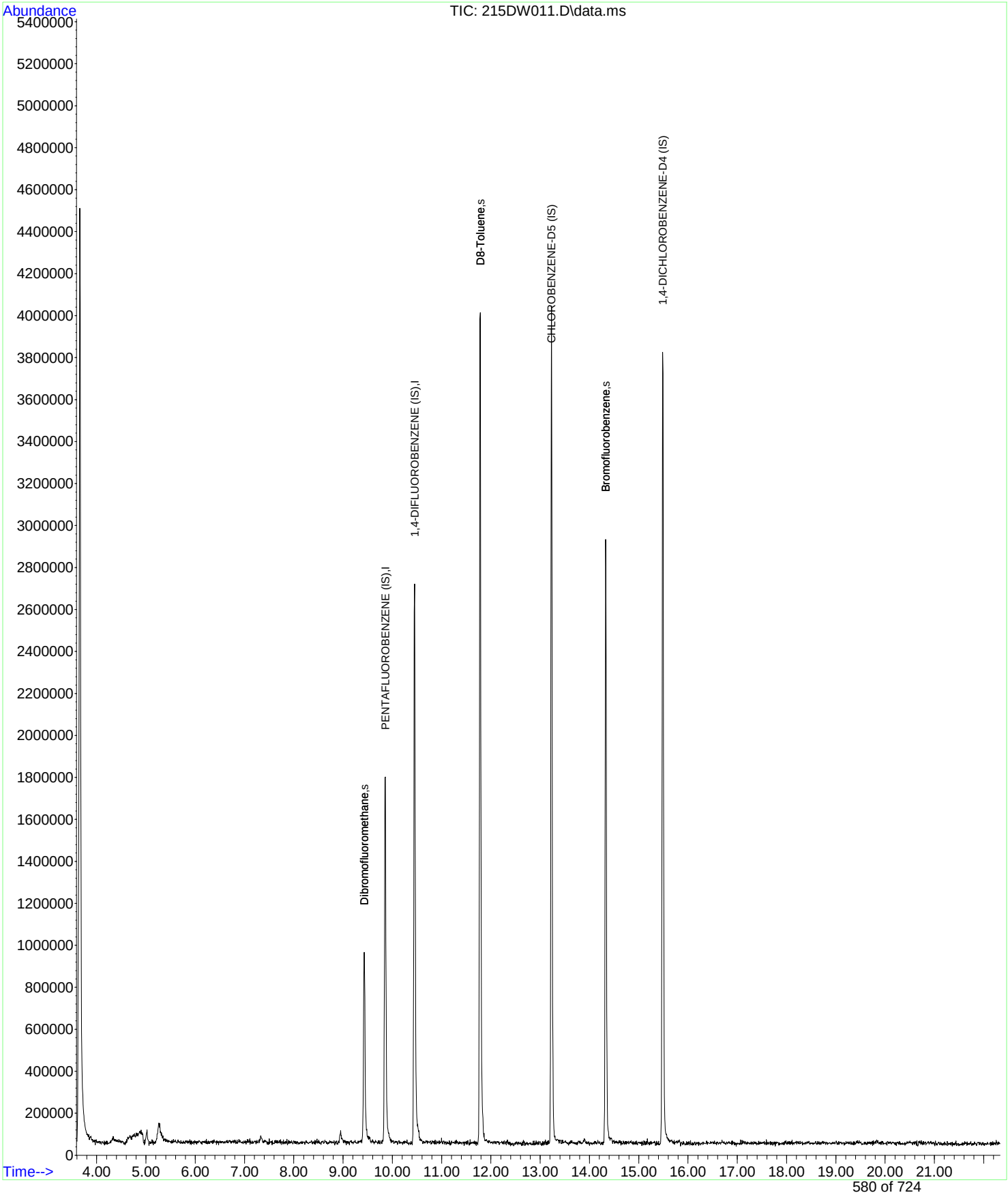
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2954595	56.98 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	1215	N.D.	
57) T-1,3-Dichloropropene	12.119	75	1224	N.D.	
58) Tetrachloroethene	12.295	164	1190	N.D.	
59) Ethyl methacrylate	12.136	69	1048	N.D.	
60) 1,1,2-Trichloroethane	12.324	97	1830	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.506	76	1161	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.241	106	1280	N.D.	
66) Chlorobenzene	13.253	112	4600	N.D.	
67) 1,1,1,2-Tetrachloroethane	13.141	131	1054	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.899	104	1444	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.881	105	1152	N.D.	
74) Bromofluorobenzene	14.328	95	1230346	50.62 ug/L #	79
75) n-Propylbenzene	14.422	91	1728	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.481	83	1821	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.404	156	1089	N.D.	
81) 1,2,4-Trimethylbenzene	15.045	105	1230	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.821	91	1116	N.D.	
84) tert-Butylbenzene	14.892	119	1244	N.D.	
85) 1,3,5-Trimethylbenzene	14.645	105	1135	N.D.	
86) p-Isopropyltoluene	15.192	119	1234	N.D.	
87) s-Butylbenzene	15.045	105	1230	N.D.	
88) 1,3-Dichlorobenzene	15.479	146	1345	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	1582	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	16.049	146	1218	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D. d	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW011.D
Acq On : 28 Apr 2021 12:41 pm
Operator : kkw
Sample : AE03539-01
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Apr 28 14:53:31 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW012.D
Acq On : 28 Apr 2021 1:08 pm
Operator : kkw
Sample : AE03540-01
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 28 14:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1097062	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2345167	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1423218	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1207129	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	635613	55.79 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 111.58%		
52) D8-Toluene	11.784	98	2905874	56.50 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.00%		
73) Bromofluorobenzene	14.334	95	1202409	48.42 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 96.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	4.046	85	1228	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D. d	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	0.000		0	N.D. d	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D. d	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D. d	
22) Chloroprene	0.000		0	N.D. d	
23) 1,1-Dichloroethane	0.000		0	N.D. d	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.364	43	1255	N.D.	
26) c-1,2-Dichloroethene	8.993	96	1024	N.D.	
27) 2,2-Dichloropropane	8.940	77	1481	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.181	56	1536	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	635613	55.79 ug/L #	84
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D. d	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.351	117	2867	N.D.	
41) Benzene	9.868	78	6535	N.D.	
42) 1,2-Dichloroethane	10.180	62	1071	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D. d	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	0.000		0	N.D. d	

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW012.D
Acq On : 28 Apr 2021 1:08 pm
Operator : kkw
Sample : AE03540-01
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 28 14:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

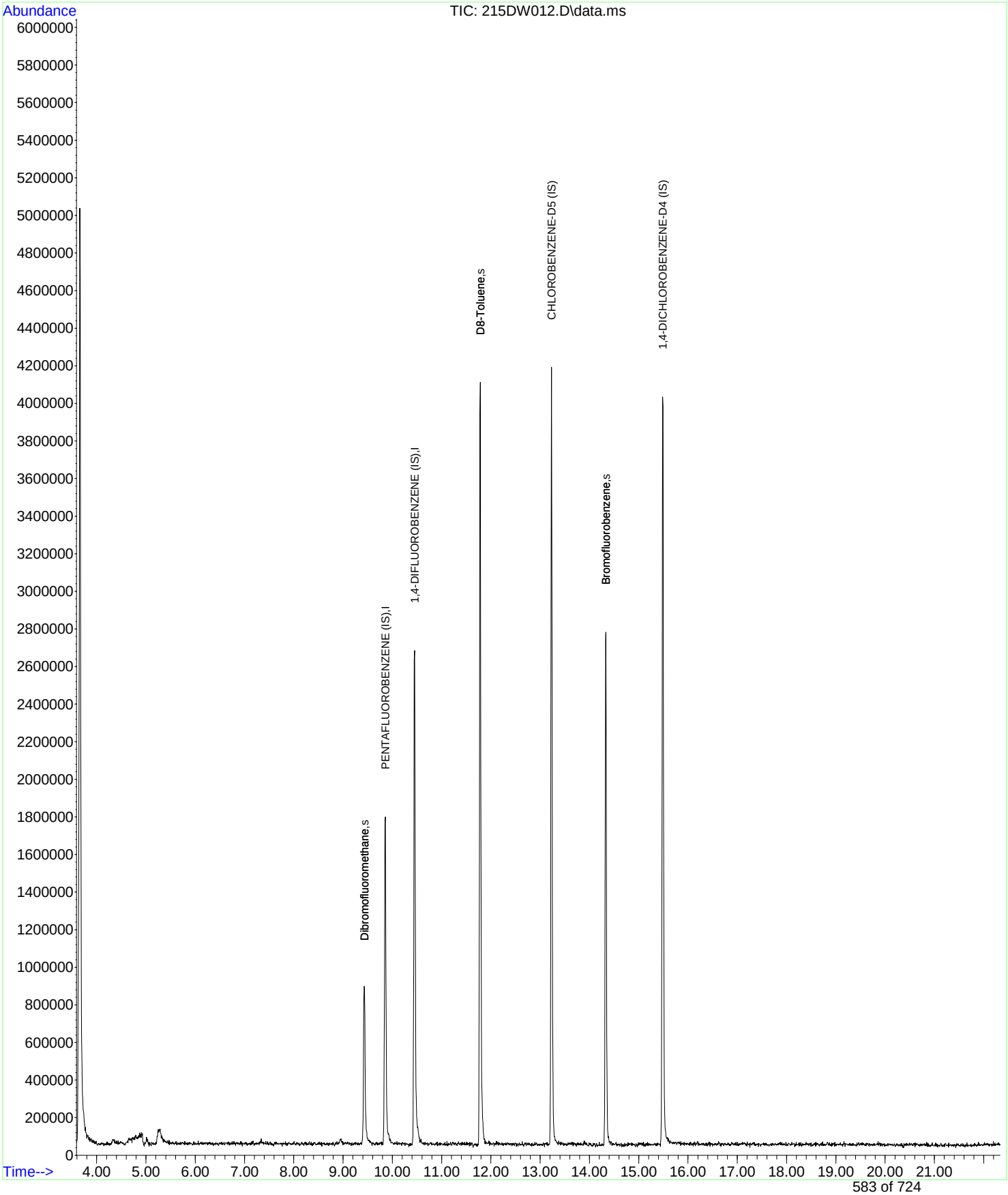
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2905874	56.50 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.849	92	1685	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	12.230	164	1032	N.D.	
59) Ethyl methacrylate	12.418	69	1155	N.D.	
60) 1,1,2-Trichloroethane	12.307	97	1016	N.D.	
61) Dibromochloromethane	0.000		0	N.D. d	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.253	112	2552	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1202409	48.42 ug/L #	80
75) n-Propylbenzene	14.422	91	2127	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.340	156	1118	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	1728	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.974	105	1728	N.D.	
88) 1,3-Dichlorobenzene	15.444	146	2010	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	1551	N.D.	
90) n-Butylbenzene	15.638	91	1209	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW012.D
Acq On : 28 Apr 2021 1:08 pm
Operator : kkw
Sample : AE03540-01
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Apr 28 14:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW013.D
Acq On : 28 Apr 2021 1:36 pm
Operator : kkw
Sample : AE02994-02
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 28 14:55:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1074925	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2306314	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1308063	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1193873	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	652208	58.43 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 116.86%		
52) D8-Toluene	11.784	98	2846490	56.27 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 112.54%		
73) Bromofluorobenzene	14.328	95	1185666	51.95 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 103.90%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.858	85	1076	N.D.	
3) Chloromethane	4.386	50	1023	N.D.	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D. d	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D. d	
22) Chloroprene	0.000		0	N.D. d	
23) 1,1-Dichloroethane	0.000		0	N.D. d	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	0.000		0	N.D. d	
26) c-1,2-Dichloroethene	0.000		0	N.D. d	
27) 2,2-Dichloropropane	0.000		0	N.D. d	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D. d	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.428	113	652208	58.43 ug/L #	87
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.404	117	1085	N.D.	
41) Benzene	9.874	78	2220	N.D.	
42) 1,2-Dichloroethane	10.156	62	1276	N.D.	
43) Trichloroethene	10.556	130	1049	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D. d	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	0.000		0	N.D. d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW013.D
Acq On : 28 Apr 2021 1:36 pm
Operator : kkw
Sample : AE02994-02
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 28 14:55:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

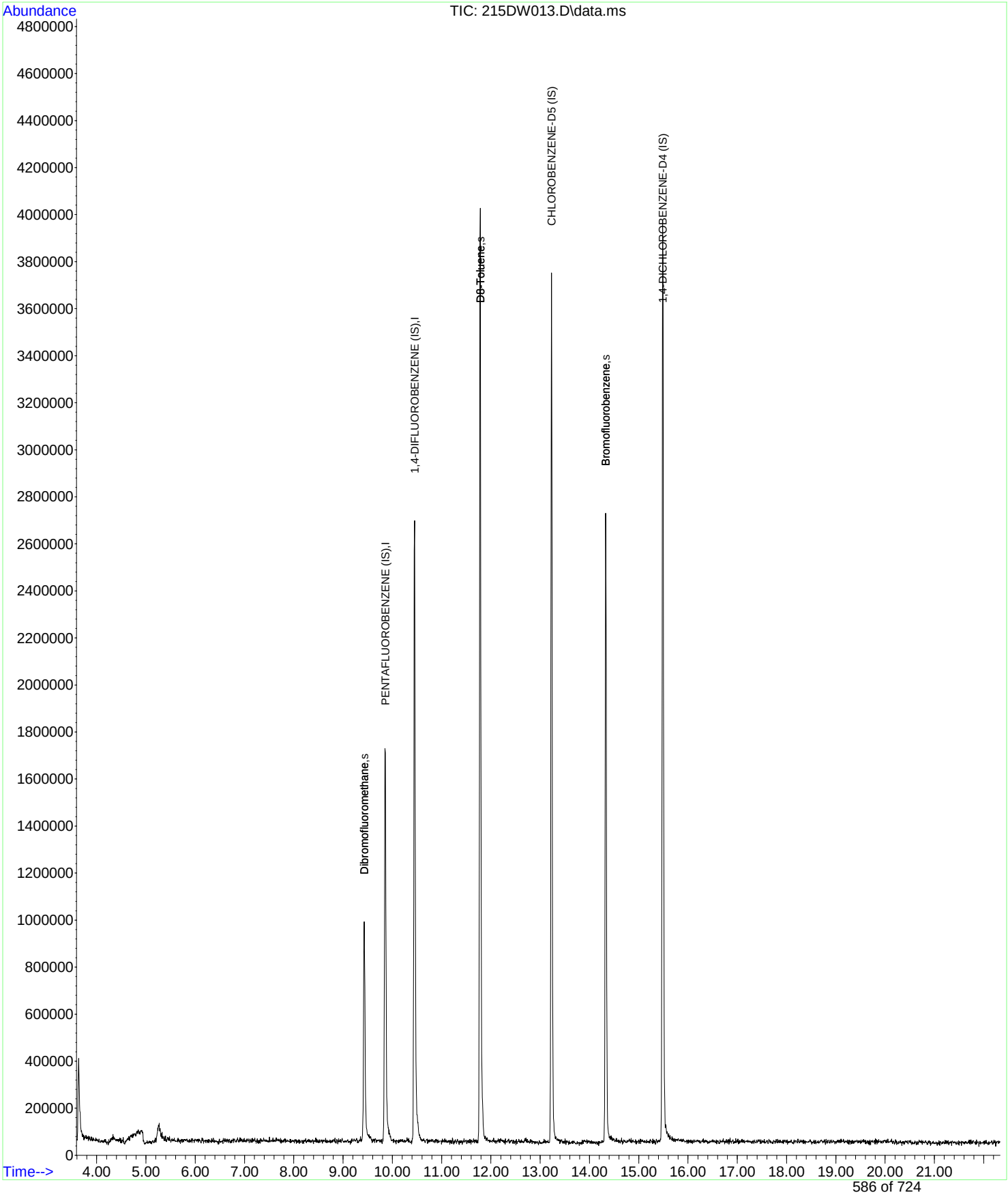
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2846490	56.27 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.784	92	2229	N.D.	
57) T-1,3-Dichloropropene	12.054	75	1951	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.358	106	1336	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.358	106	1336	N.D.	
69) o-xylene	13.658	106	1013	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.005	105	1214	N.D.	
74) Bromofluorobenzene	14.328	95	1185666	51.95 ug/L #	80
75) n-Propylbenzene	14.393	91	1682	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.569	83	1350	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	1542	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.757	91	1108	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.986	105	1542	N.D.	
88) 1,3-Dichlorobenzene	15.415	146	1219	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	3116	N.D.	
90) n-Butylbenzene	15.744	91	1881	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW013.D
Acq On : 28 Apr 2021 1:36 pm
Operator : kkw
Sample : AE02994-02
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Apr 28 14:55:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW014.D
Acq On : 28 Apr 2021 2:04 pm
Operator : kkw
Sample : AE02994-01
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 29 06:50:53 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1064206	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2313236	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1342233	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1097916	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	658020	59.54 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 119.08%		
52) D8-Toluene	11.778	98	2878749	56.74 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.48%		
73) Bromofluorobenzene	14.328	95	1182075	50.48 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.481	62	1240	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	5.791	101	1691	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	6.549	96	1314	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.631	76	23554	0.86 ug/L #	84
14) 3-chloropropene	7.242	41	1207	N.D.	
15) Acetone	7.407	43	12742	12.64 ug/L #	58
16) Methylene Chloride	7.342	84	1431	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.577	96	1674	N.D.	
19) Methyl tert-butyl ether	7.636	73	10349	0.62 ug/L #	73
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.076	45	1130	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.576	43	1112	N.D.	
26) c-1,2-Dichloroethene	8.958	96	2349	0.25 ug/L #	1
27) 2,2-Dichloropropane	9.052	77	1157	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.210	56	2385	0.21 ug/L #	4
30) Chloroform	9.116	83	1195	N.D.	
32) Dibromofluoromethane	9.428	113	658020	59.54 ug/L #	90
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.428	97	1111	N.D.	
35) 1,1-Dichloropropene	9.616	75	1552	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.351	117	2498	N.D.	
41) Benzene	9.874	78	6323	N.D.	
42) 1,2-Dichloroethane	10.015	62	1150	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D. d	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.637	75	1025	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW014.D
Acq On : 28 Apr 2021 2:04 pm
Operator : kkw
Sample : AE02994-01
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 29 06:50:53 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

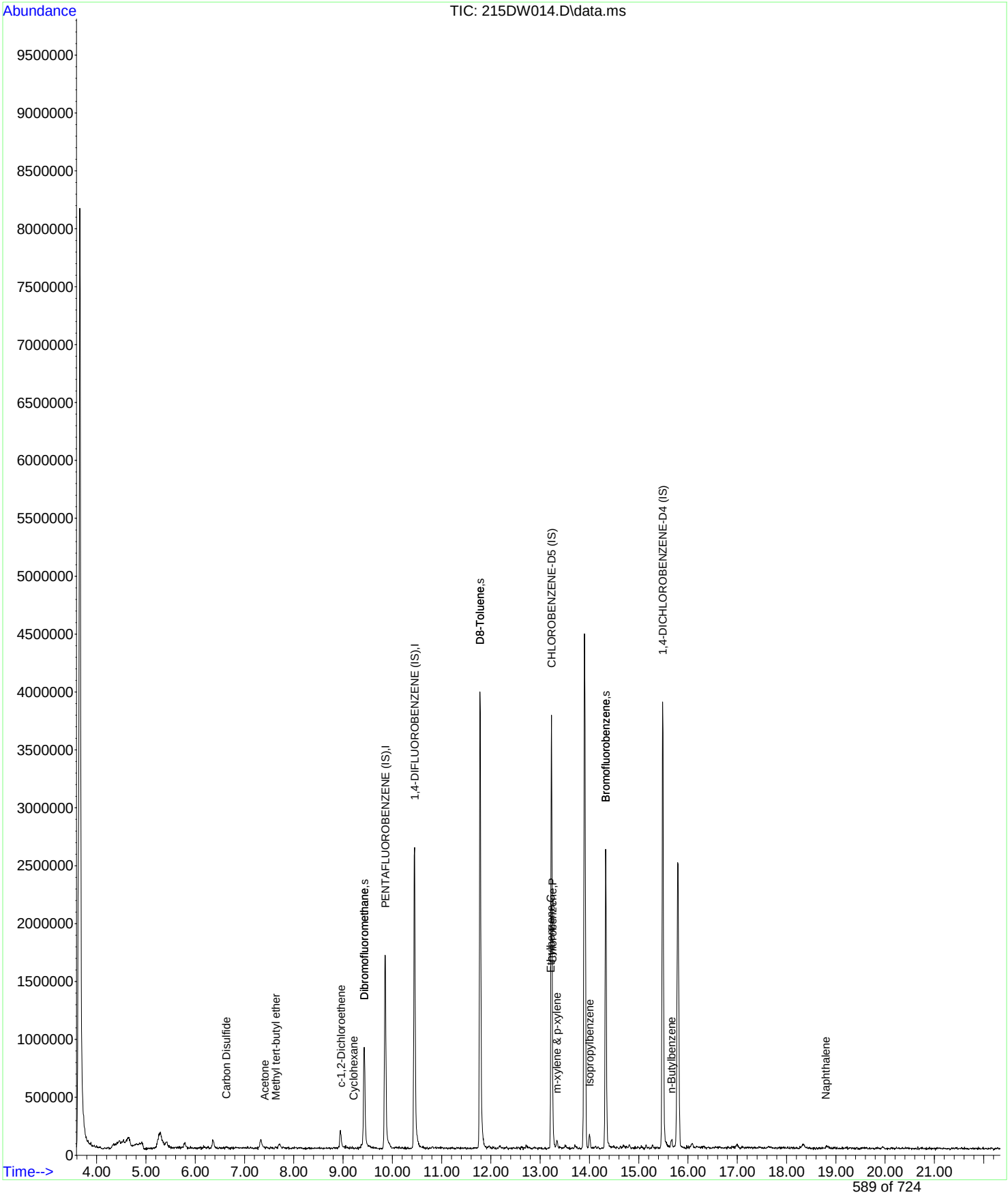
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	2878749	56.74 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.860	92	2453	N.D.	
57) T-1,3-Dichloropropene	12.260	75	1051	N.D.	
58) Tetrachloroethene	12.136	164	1262	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.295	97	1501	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.212	106	4293	0.24 ug/L #	52
66) Chlorobenzene	13.247	112	10719	0.34 ug/L #	40
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	5354	0.23 ug/L #	14
69) o-xylene	13.893	106	2222	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	13.999	105	75005	1.33 ug/L	92
74) Bromofluorobenzene	14.328	95	1182075	50.48 ug/L #	77
75) n-Propylbenzene	14.399	91	7518	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.469	83	1186	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.475	156	1048	N.D.	
81) 1,2,4-Trimethylbenzene	14.963	105	6200	N.D.	
82) 2-Chlorotoluene	14.616	91	1577	N.D.	
83) 4-Chlorotoluene	14.804	91	1960	N.D.	
84) tert-Butylbenzene	14.927	119	1086	N.D.	
85) 1,3,5-Trimethylbenzene	14.522	105	4934	N.D.	
86) p-Isopropyltoluene	15.209	119	1839	N.D.	
87) s-Butylbenzene	15.086	105	1180	N.D.	
88) 1,3-Dichlorobenzene	15.509	146	4264	N.D.	
89) 1,4-Dichlorobenzene	15.509	146	4264	N.D.	
90) n-Butylbenzene	15.662	91	9298	0.23 ug/L #	48
91) 1,2-Dichlorobenzene	16.126	146	1074	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.793	128	23042	4.95 ug/L #	75
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW014.D
Acq On : 28 Apr 2021 2:04 pm
Operator : kkw
Sample : AE02994-01
Misc :
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Apr 29 06:50:53 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW015.D
Acq On : 28 Apr 2021 2:32 pm
Operator : kkw
Sample : AE03534-01
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 29 06:50:58 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1017418	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2321401	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1328062	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1074433	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	657365	62.22 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 124.44%		
52) D8-Toluene	11.784	98	2883332	56.63 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.26%		
73) Bromofluorobenzene	14.334	95	1148065	49.55 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.10%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.869	85	1124	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.427	64	1038	N.D.	
7) Trichlorofluoromethane	5.597	101	1747	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	6.566	96	1077	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.625	76	4921	N.D.	
14) 3-chloropropene	7.260	41	1089	N.D.	
15) Acetone	7.418	43	4732	4.99 ug/L #	42
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	7.630	73	1721	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.994	45	1305	N.D.	
22) Chloroprene	0.000		0	N.D. d	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.388	43	1323	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D.	
27) 2,2-Dichloropropane	8.958	77	1467	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.187	56	2071	N.D.	
30) Chloroform	9.287	83	1069	N.D.	
32) Dibromofluoromethane	9.428	113	658570	62.34 ug/L #	90
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	9.351	97	1164	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.346	117	2078	N.D.	
41) Benzene	9.886	78	4545	N.D.	
42) 1,2-Dichloroethane	10.056	62	1056	N.D.	
43) Trichloroethene	10.568	130	1355	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.661	75	1399	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW015.D
Acq On : 28 Apr 2021 2:32 pm
Operator : kkw
Sample : AE03534-01
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 29 06:50:58 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

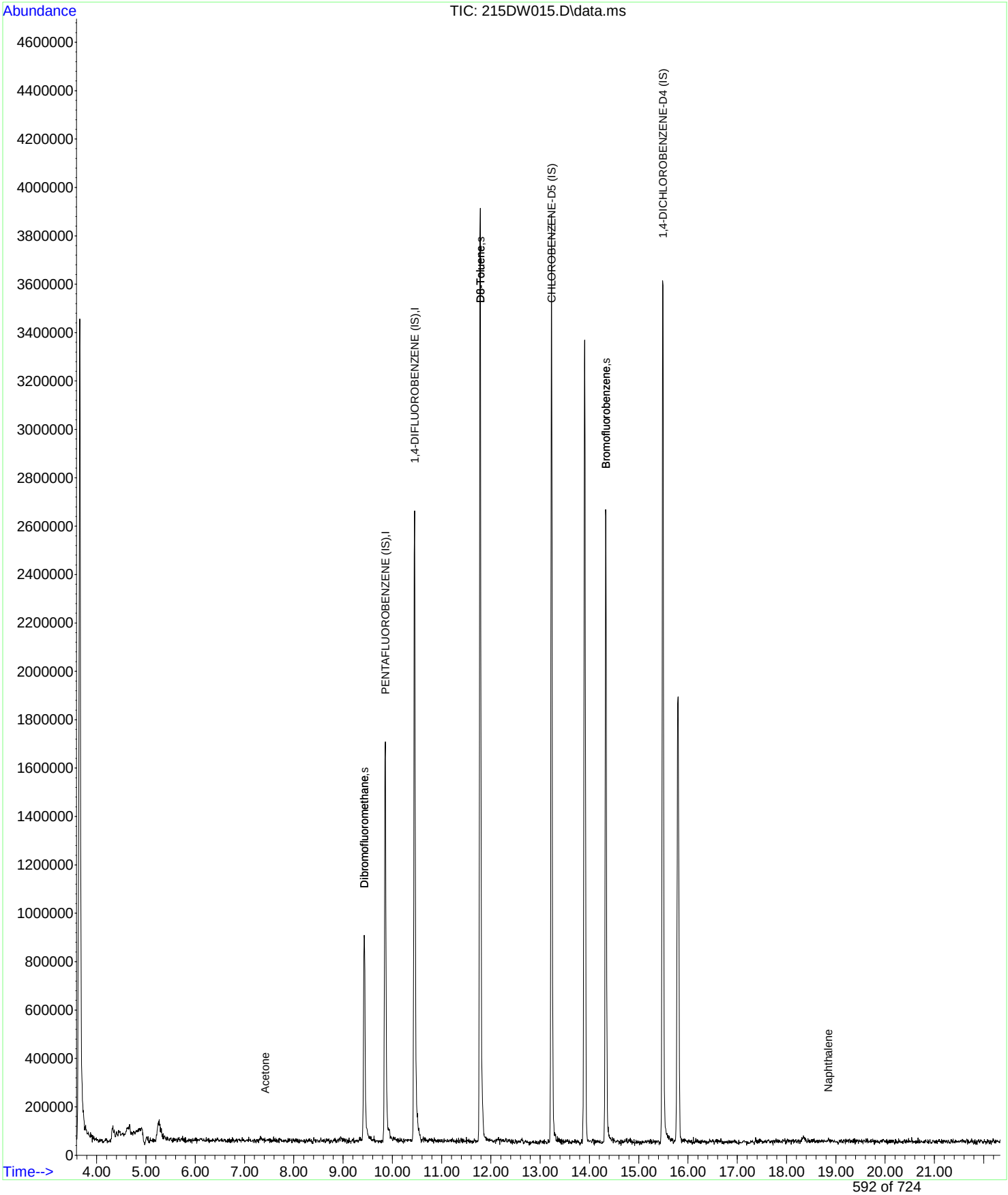
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2883332	56.63 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	2140	N.D.	
57) T-1,3-Dichloropropene	12.260	75	1311	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	12.436	129	1298	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	12.759	107	1310	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.212	106	1309	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.905	106	2830	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D. d	
74) Bromofluorobenzene	14.334	95	1148065	49.55 ug/L #	80
75) n-Propylbenzene	14.434	91	1343	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.322	83	1074	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	1014	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.798	91	1279	N.D.	
84) tert-Butylbenzene	14.904	119	1031	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.974	105	1014	N.D.	
88) 1,3-Dichlorobenzene	15.491	146	3296	N.D.	
89) 1,4-Dichlorobenzene	15.491	146	3296	N.D.	
90) n-Butylbenzene	15.662	91	1294	N.D.	
91) 1,2-Dichlorobenzene	15.985	146	1304	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	18.846	128	2963	0.72 ug/L #	69
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW015.D
Acq On : 28 Apr 2021 2:32 pm
Operator : kkw
Sample : AE03534-01
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Apr 29 06:50:58 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW016.D
Acq On : 28 Apr 2021 2:59 pm
Operator : kkw
Sample : AE03534-02
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 29 06:51:02 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1070065	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2232327	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1316899	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1175341	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	638327	57.45 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 114.90%		
52) D8-Toluene	11.784	98	2811617	57.43 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 114.86%		
73) Bromofluorobenzene	14.328	95	1128977	49.14 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	4.539	62	1020	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	5.550	64	1118	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	6.778	142	1190	N.D.	
13) Carbon Disulfide	6.660	76	3361	N.D.	
14) 3-chloropropene	7.189	41	1008	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	7.354	84	1086	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.700	96	1354	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.100	45	1040	N.D.	
22) Chloroprene	0.000		0	N.D. d	
23) 1,1-Dichloroethane	8.394	63	1141	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.517	43	1050	N.D.	
26) c-1,2-Dichloroethene	8.828	96	1278	N.D.	
27) 2,2-Dichloropropane	9.093	77	1024	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.234	56	1018	N.D.	
30) Chloroform	9.187	83	1673	N.D.	
32) Dibromofluoromethane	9.434	113	638327	57.45 ug/L #	86
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.369	117	2053	N.D.	
41) Benzene	9.898	78	1800	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	10.979	63	1294	N.D.	
47) Bromodichloromethane	11.108	83	1017	N.D.	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.519	75	1537	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW016.D
Acq On : 28 Apr 2021 2:59 pm
Operator : kkw
Sample : AE03534-02
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 29 06:51:02 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

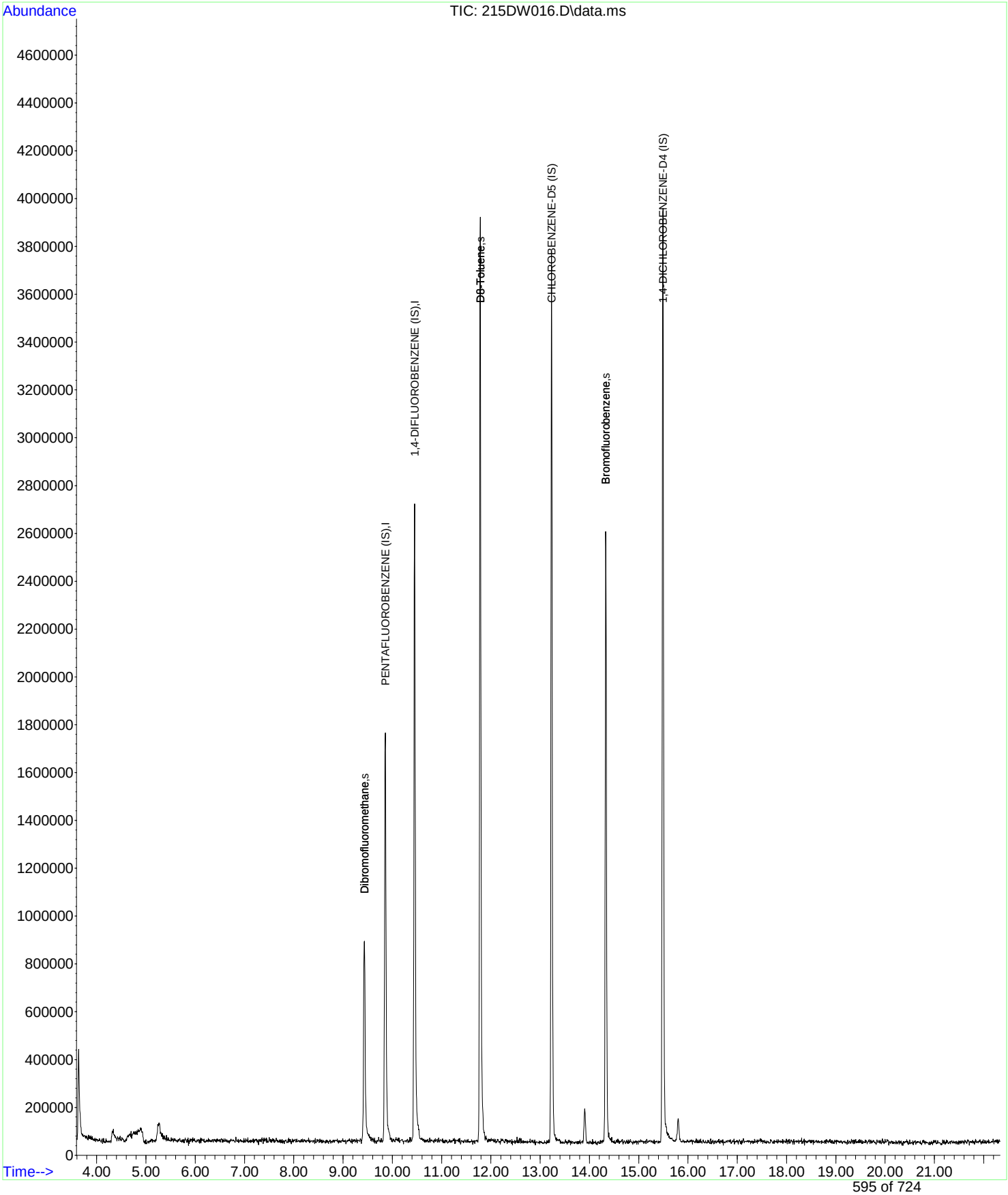
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2811617	57.43 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	1210	N.D.	
57) T-1,3-Dichloropropene	12.230	75	1257	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.289	97	1358	N.D.	
61) Dibromochloromethane	12.589	129	1004	N.D.	
62) 1,3-Dichloropropane	12.542	76	1202	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.353	112	1180	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.658	106	1090	N.D.	
70) Styrene	13.905	104	1164	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.899	105	1424	N.D.	
74) Bromofluorobenzene	14.328	95	1128977	49.14 ug/L #	79
75) n-Propylbenzene	14.410	91	1257	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.328	156	2018	N.D.	
81) 1,2,4-Trimethylbenzene	15.098	105	1279	N.D.	
82) 2-Chlorotoluene	14.763	91	1226	N.D.	
83) 4-Chlorotoluene	14.763	91	1226	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.434	105	1340	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.098	105	1279	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D. d	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW016.D
Acq On : 28 Apr 2021 2:59 pm
Operator : kkw
Sample : AE03534-02
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Apr 29 06:51:02 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW017.D
Acq On : 28 Apr 2021 3:27 pm
Operator : kkw
Sample : AE02995-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 29 06:51:06 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1063882	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2268952	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1288189	50.00	ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1221194	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.428	113	665304	60.22	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 120.44%			
52) D8-Toluene	11.784	98	2682722	53.91	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 107.82%			
73) Bromofluorobenzene	14.334	95	1169021	52.01	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	4.069	85	1759	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	0.000		0	N.D.	d	
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.	d	
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	0.000		0	N.D.	d	
14) 3-chloropropene	0.000		0	N.D.	d	
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.	d	
22) Chloroprene	0.000		0	N.D.	d	
23) 1,1-Dichloroethane	0.000		0	N.D.	d	
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.447	43	1554	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	9.234	83	1426	N.D.		
32) Dibromofluoromethane	9.428	113	665304	60.22	ug/L #	89
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	d	
35) 1,1-Dichloropropene	0.000		0	N.D.	d	
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.445	117	1070	N.D.		
41) Benzene	9.886	78	1690	N.D.		
42) 1,2-Dichloroethane	10.009	62	1178	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.	d	
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.	d	
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
51) C-1,3-Dichloropropene	11.537	75	1091	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW017.D
Acq On : 28 Apr 2021 3:27 pm
Operator : kkw
Sample : AE02995-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 29 06:51:06 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

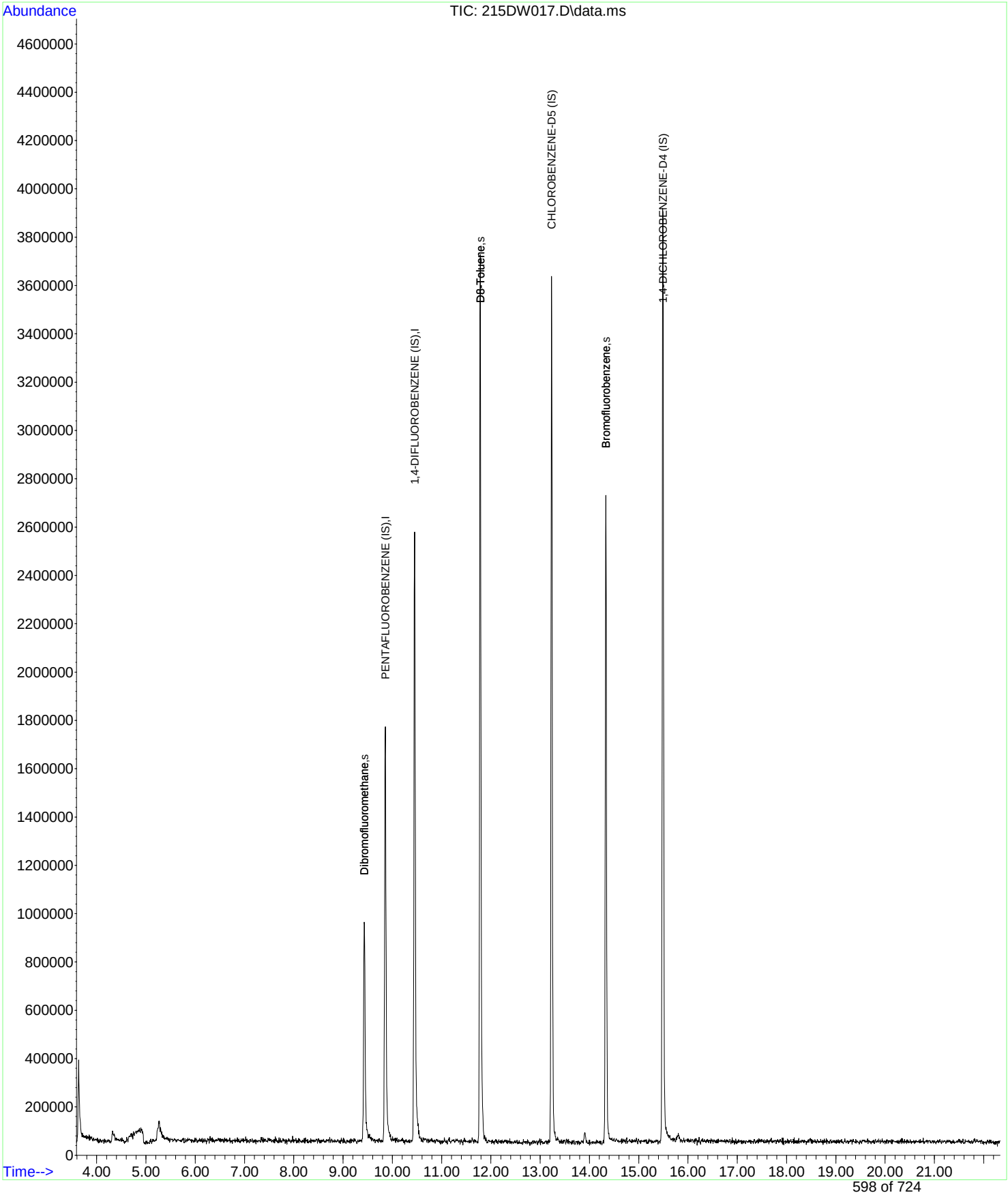
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2682722	53.91 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	1204	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.154	69	1140	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	12.589	129	1647	N.D.	
62) 1,3-Dichloropropane	12.683	76	1052	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	13.288	131	1113	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.887	104	1683	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1169021	52.01 ug/L #	79
75) n-Propylbenzene	14.334	91	5370	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.404	83	1142	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	14.328	156	1105	N.D.	
81) 1,2,4-Trimethylbenzene	14.921	105	1373	N.D.	
82) 2-Chlorotoluene	14.516	91	1212	N.D.	
83) 4-Chlorotoluene	14.822	91	1061	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.493	105	1192	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.921	105	1373	N.D.	
88) 1,3-Dichlorobenzene	15.427	146	1225	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	2903	N.D.	
90) n-Butylbenzene	15.679	91	1314	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW017.D
Acq On : 28 Apr 2021 3:27 pm
Operator : kkw
Sample : AE02995-02
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Apr 29 06:51:06 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW018.D
Acq On : 28 Apr 2021 3:55 pm
Operator : kkw
Sample : AE02995-01
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Apr 29 06:51:10 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1076472	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2111892	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1289062	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1266654	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	654492	58.55 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 117.10%		
52) D8-Toluene	11.784	98	2666575	57.57 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 115.14%		
73) Bromofluorobenzene	14.328	95	1166395	51.86 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 103.72%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.969	85	1275	N.D.	
3) Chloromethane	4.398	50	1020	N.D.	
4) Vinyl Chloride	4.439	62	1397	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D. d	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D. d	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.458	43	1040	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D.	
27) 2,2-Dichloropropane	9.110	77	1104	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.187	56	1331	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	654492	58.55 ug/L #	90
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.369	117	2253	N.D.	
41) Benzene	9.886	78	3329	N.D.	
42) 1,2-Dichloroethane	9.921	62	2081	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D. d	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D. d	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.760	75	2975	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW018.D
Acq On : 28 Apr 2021 3:55 pm
Operator : kkw
Sample : AE02995-01
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Apr 29 06:51:10 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

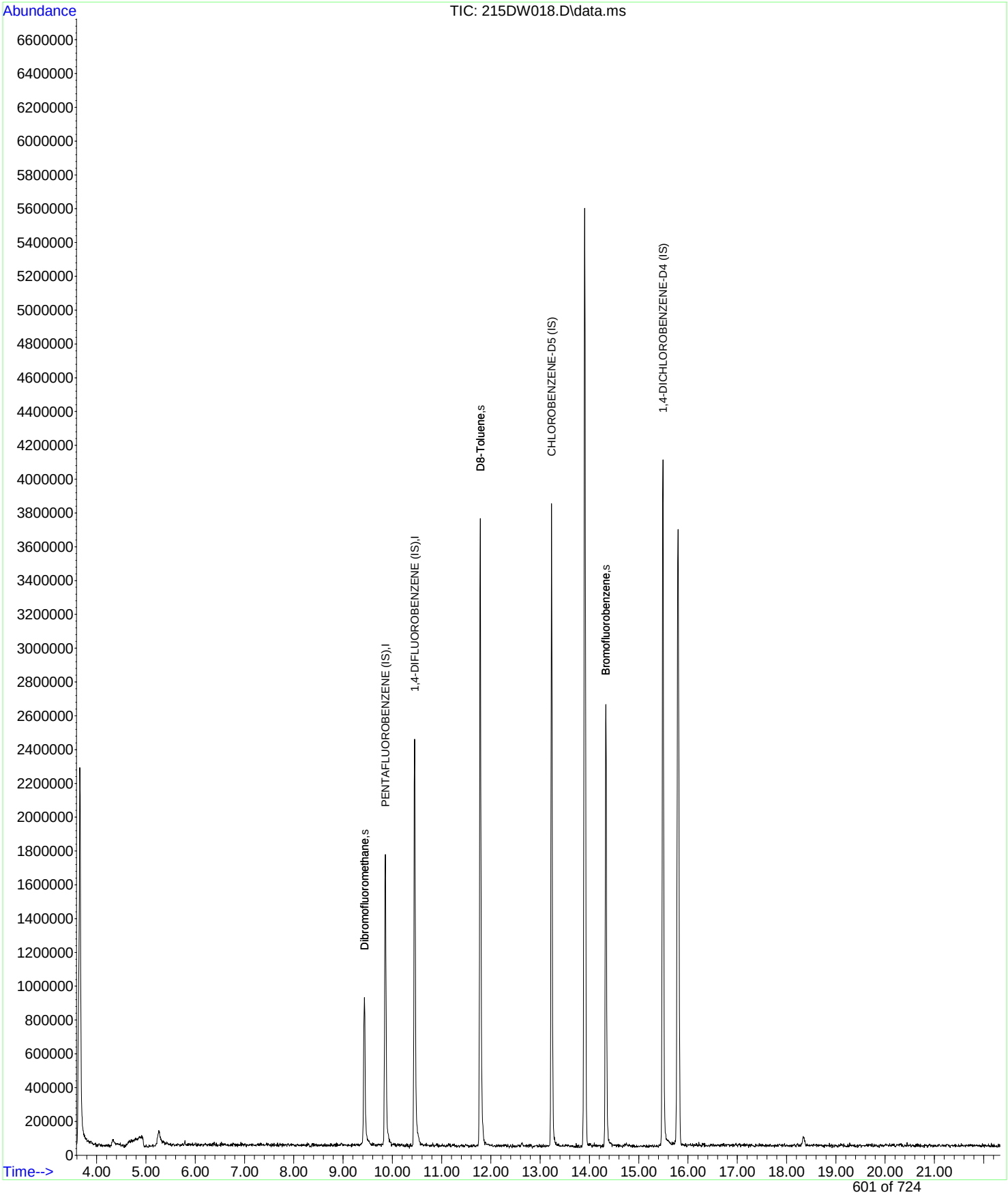
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2666575	57.57 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.825	92	1272	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.277	97	1196	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.806	76	1231	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.259	112	1901	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.893	106	3075	N.D.	
70) Styrene	13.817	104	1071	N.D.	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	14.022	105	4765	N.D.	
74) Bromofluorobenzene	14.328	95	1166395	51.86 ug/L #	79
75) n-Propylbenzene	14.428	91	1072	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.404	83	1185	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	14.351	156	1268	N.D.	
81) 1,2,4-Trimethylbenzene	14.974	105	2116	N.D.	
82) 2-Chlorotoluene	14.628	91	1458	N.D.	
83) 4-Chlorotoluene	14.628	91	1458	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.492	105	1028	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.974	105	2116	N.D.	
88) 1,3-Dichlorobenzene	15.479	146	1548	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	1971	N.D.	
90) n-Butylbenzene	15.615	91	1343	N.D.	
91) 1,2-Dichlorobenzene	16.138	146	1076	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW018.D
Acq On : 28 Apr 2021 3:55 pm
Operator : kkw
Sample : AE02995-01
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Apr 29 06:51:10 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW019.D
Acq On : 28 Apr 2021 4:22 pm
Operator : kkw
Sample : AE03537-01
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 29 06:51:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1068723	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2270410	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1392400	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1111676	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	668285	60.22 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 120.44%		
52) D8-Toluene	11.784	98	2815072	56.53 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 113.06%		
73) Bromofluorobenzene	14.334	95	1140309	46.94 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 93.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D. d	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	7.436	43	11803	11.69 ug/L #	88
16) Methylene Chloride	7.354	84	1328	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.583	96	1164	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	7.924	45	1153	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D. d	
25) Vinyl Acetate	8.423	43	1021	N.D.	
26) c-1,2-Dichloroethene	8.805	96	1121	N.D.	
27) 2,2-Dichloropropane	8.958	77	1810	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	669136	60.29 ug/L #	94
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D. d	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	0.000		0	N.D. d	
41) Benzene	0.000		0	N.D. d	
42) 1,2-Dichloroethane	0.000		0	N.D. d	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D. d	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	11.649	75	1084	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW019.D
Acq On : 28 Apr 2021 4:22 pm
Operator : kkw
Sample : AE03537-01
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 29 06:51:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

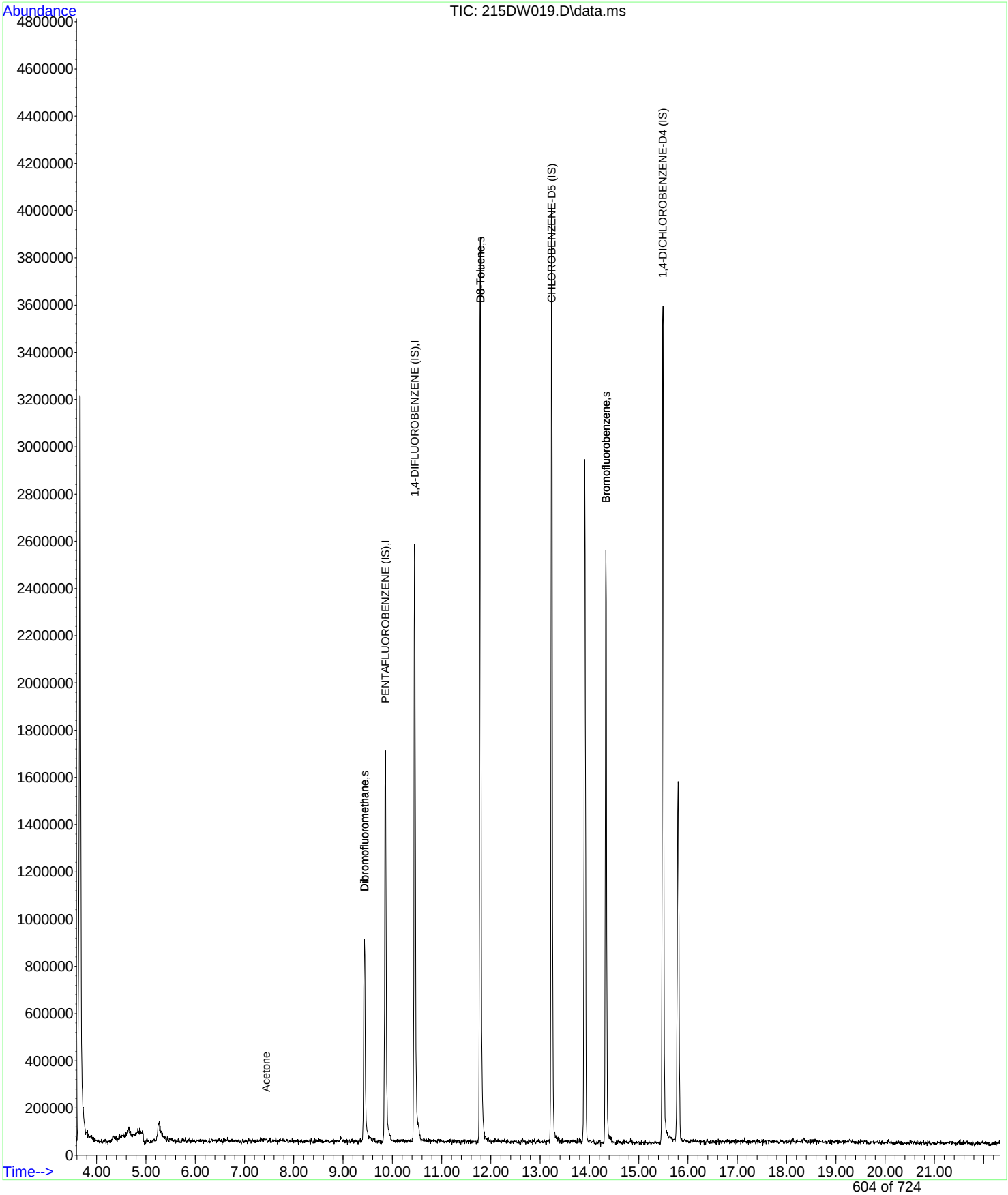
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2815072	56.53 ug/L	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.825	92	2066	N.D.	
57) T-1,3-Dichloropropene	12.160	75	1225	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	12.189	69	1541	N.D.	
60) 1,1,2-Trichloroethane	12.307	97	1022	N.D.	
61) Dibromochloromethane	12.559	129	1002	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	13.817	106	1743	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D. d	
74) Bromofluorobenzene	14.334	95	1140309	46.94 ug/L #	81
75) n-Propylbenzene	14.404	91	1182	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	1141	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	14.822	119	1317	N.D.	
85) 1,3,5-Trimethylbenzene	14.498	105	1227	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.980	105	1141	N.D.	
88) 1,3-Dichlorobenzene	15.485	146	2301	N.D.	
89) 1,4-Dichlorobenzene	15.485	146	2301	N.D.	
90) n-Butylbenzene	15.626	91	1065	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D. d	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW019.D
Acq On : 28 Apr 2021 4:22 pm
Operator : kkw
Sample : AE03537-01
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Apr 29 06:51:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW020.D
Acq On : 28 Apr 2021 4:50 pm
Operator : kkw
Sample : AE03537-02
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 29 06:51:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	1043442	50.00 ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2251680	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1348761	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1116872	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	640124	59.08 ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 118.16%		
52) D8-Toluene	11.784	98	2611792	52.89 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.78%		
73) Bromofluorobenzene	14.334	95	1145593	48.68 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D. d	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D. d	
10) Trichlorotrifluoroethane	0.000		0	N.D. d	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D. d	
19) Methyl tert-butyl ether	0.000		0	N.D. d	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	8.035	45	1033	N.D.	
22) Chloroprene	8.135	88	1260	N.D.	
23) 1,1-Dichloroethane	8.165	63	1016	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.535	43	1233	N.D.	
26) c-1,2-Dichloroethene	8.928	96	1112	N.D.	
27) 2,2-Dichloropropane	9.034	77	1249	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	9.269	56	1503	N.D.	
30) Chloroform	9.257	83	1054	N.D.	
32) Dibromofluoromethane	9.434	113	640124	59.08 ug/L #	88
33) 2-Butanone	0.000		0	N.D. d	
34) 1,1,1-Trichloroethane	0.000		0	N.D. d	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.351	117	2909	N.D.	
41) Benzene	9.886	78	3152	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D. d	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	11.778	75	1639	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW020.D
Acq On : 28 Apr 2021 4:50 pm
Operator : kkw
Sample : AE03537-02
Misc :
ALS Vial : 19 Sample Multiplier: 1

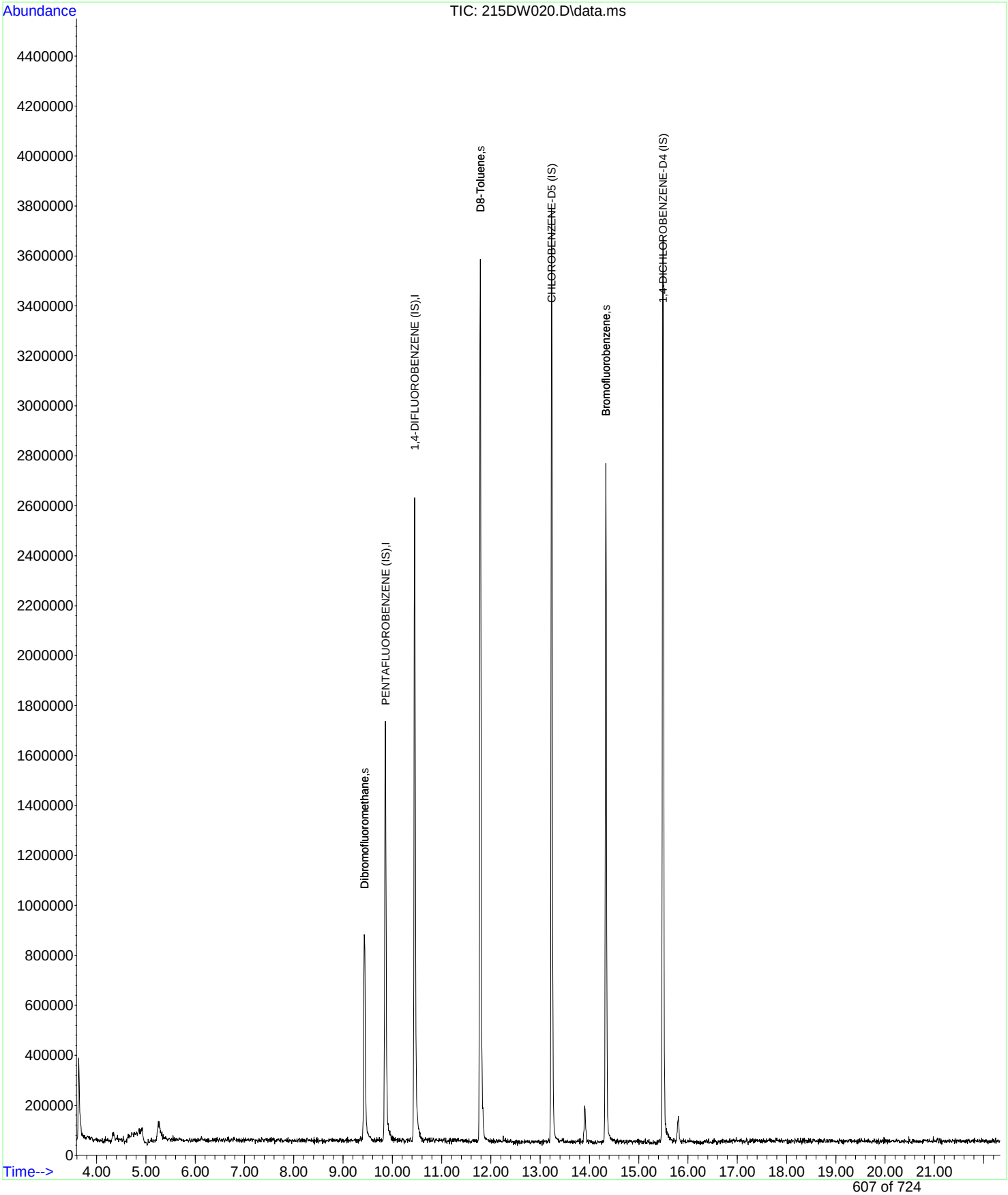
Quant Time: Apr 29 06:51:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2611792	52.89 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	1064	N.D.	
57) T-1,3-Dichloropropene	12.160	75	1052	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.225	97	1169	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.507	76	1072	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	13.805	104	1072	N.D.	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	13.881	105	1652	N.D.	
74) Bromofluorobenzene	14.334	95	1145593	48.68 ug/L #	80
75) n-Propylbenzene	14.328	91	4357	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.322	83	1409	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	15.051	105	1007	N.D.	
82) 2-Chlorotoluene	14.575	91	1298	N.D.	
83) 4-Chlorotoluene	14.816	91	1357	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	15.227	119	1468	N.D.	
87) s-Butylbenzene	15.051	105	1007	N.D.	
88) 1,3-Dichlorobenzene	15.474	146	2899	N.D.	
89) 1,4-Dichlorobenzene	15.474	146	2899	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW020.D
Acq On : 28 Apr 2021 4:50 pm
Operator : kkw
Sample : AE03537-02
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Apr 29 06:51:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW021.D
Acq On : 28 Apr 2021 5:18 pm
Operator : kkw
Sample : AE03542-01
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 29 06:51:22 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	1056766	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2178308	50.00 ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1210633	50.00 ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1127522	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.428	113	648706	59.12 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 118.24%		
52) D8-Toluene	11.784	98	2607592	54.58 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 109.16%		
73) Bromofluorobenzene	14.334	95	1147215	54.31 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.62%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.846	85	1143	N.D.	
3) Chloromethane	0.000		0	N.D. d	
4) Vinyl Chloride	0.000		0	N.D. d	
5) Bromomethane	0.000		0	N.D.	
6) Chloroethane	0.000		0	N.D. d	
7) Trichlorofluoromethane	0.000		0	N.D. d	
8) Diethyl ether	0.000		0	N.D. d	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D. d	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D. d	
14) 3-chloropropene	0.000		0	N.D. d	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D. d	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D. d	
20) Acetonitrile	0.000		0	N.D. d	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	8.311	63	1337	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	8.540	43	1205	N.D.	
26) c-1,2-Dichloroethene	9.028	96	1405	N.D.	
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	9.316	128	1040	N.D.	
29) Cyclohexane	9.263	56	1769	N.D.	
30) Chloroform	9.181	83	1292	N.D.	
32) Dibromofluoromethane	9.428	113	648706	59.12 ug/L #	87
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	9.392	97	1050	N.D.	
35) 1,1-Dichloropropene	9.651	75	1039	N.D.	
36) Propionitrile	0.000		0	N.D. d	
37) Methacrylonitrile	0.000		0	N.D. d	
38) Isobutyl Alcohol	0.000		0	N.D. d	
40) Carbon Tetrachloride	9.481	117	1190	N.D.	
41) Benzene	9.886	78	4223	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	0.000		0	N.D.	
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D. d	
47) Bromodichloromethane	0.000		0	N.D. d	
48) Methyl Methacrylate	0.000		0	N.D. d	
49) 1,4-Dioxane	0.000		0	N.D. d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D. d	
51) C-1,3-Dichloropropene	0.000		0	N.D. d	

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW021.D
Acq On : 28 Apr 2021 5:18 pm
Operator : kkw
Sample : AE03542-01
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 29 06:51:22 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

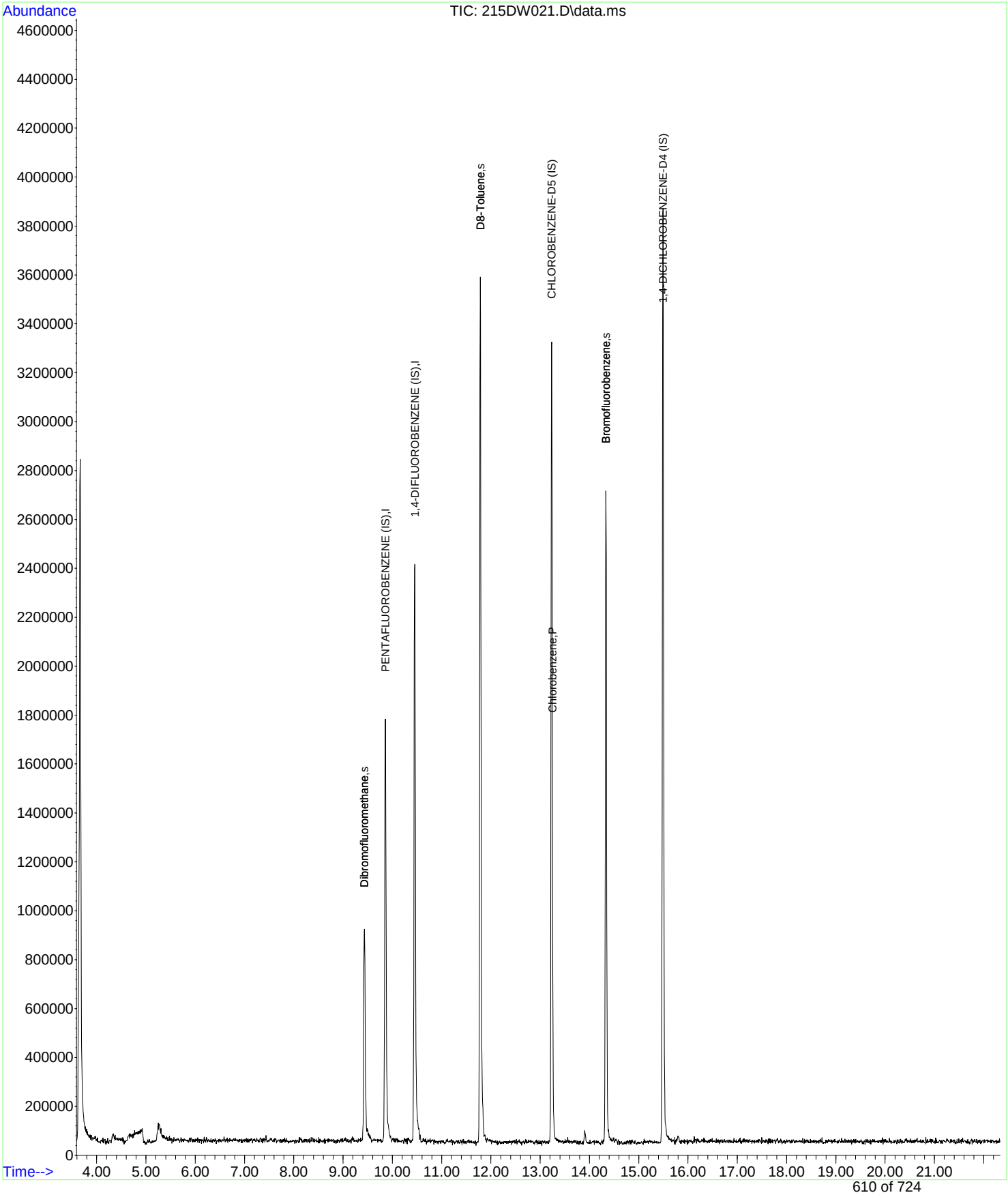
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2607592	54.58 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.848	92	3598	N.D.	
57) T-1,3-Dichloropropene	12.236	75	1102	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.260	97	1038	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.247	112	24535	0.87 ug/L #	72
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.022	105	1342	N.D.	
74) Bromofluorobenzene	14.334	95	1147215	54.31 ug/L #	81
75) n-Propylbenzene	14.345	91	5906	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.334	83	1480	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D. d	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	14.663	91	1231	N.D.	
83) 4-Chlorotoluene	14.733	91	1087	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.486	105	1633	N.D.	
86) p-Isopropyltoluene	15.268	119	1332	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.503	146	2058	N.D.	
89) 1,4-Dichlorobenzene	15.503	146	2058	N.D.	
90) n-Butylbenzene	15.726	91	1207	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW021.D
Acq On : 28 Apr 2021 5:18 pm
Operator : kkw
Sample : AE03542-01
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Apr 29 06:51:22 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW022.D
Acq On : 28 Apr 2021 5:46 pm
Operator : kkw
Sample : AE03549-01
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 29 06:51:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.856	168	1041202	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2257386	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1300641	50.00	ug/L	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1026327	50.00	ug/L	0.01
System Monitoring Compounds						
31) Dibromofluoromethane	9.433	113	635779	58.80	ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 117.60%			
52) D8-Toluene	11.784	98	2601119	52.54	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.08%			
73) Bromofluorobenzene	14.334	95	1066608	47.00	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 94.00%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	0.000		0	N.D.	d	
5) Bromomethane	0.000		0	N.D.	d	
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.	d	
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.	d	
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.	d	
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	0.000		0	N.D.	d	
14) 3-chloropropene	0.000		0	N.D.	d	
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	d	
19) Methyl tert-butyl ether	0.000		0	N.D.	d	
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	0.000		0	N.D.	d	
22) Chloroprene	0.000		0	N.D.	d	
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.	d	
25) Vinyl Acetate	8.505	43	1323	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	9.157	77	1602	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	9.204	56	1503	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.433	113	635798	58.80	ug/L #	87
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.	d	
37) Methacrylonitrile	0.000		0	N.D.	d	
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	9.386	117	1033	N.D.		
41) Benzene	9.892	78	4755	N.D.		
42) 1,2-Dichloroethane	10.050	62	1129	N.D.		
43) Trichloroethene	10.444	130	1094	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.	d	
46) 1,2-Dichloropropane	0.000		0	N.D.	d	
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.	d	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d	
51) C-1,3-Dichloropropene	11.607	75	1277	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW022.D
Acq On : 28 Apr 2021 5:46 pm
Operator : kkw
Sample : AE03549-01
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 29 06:51:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

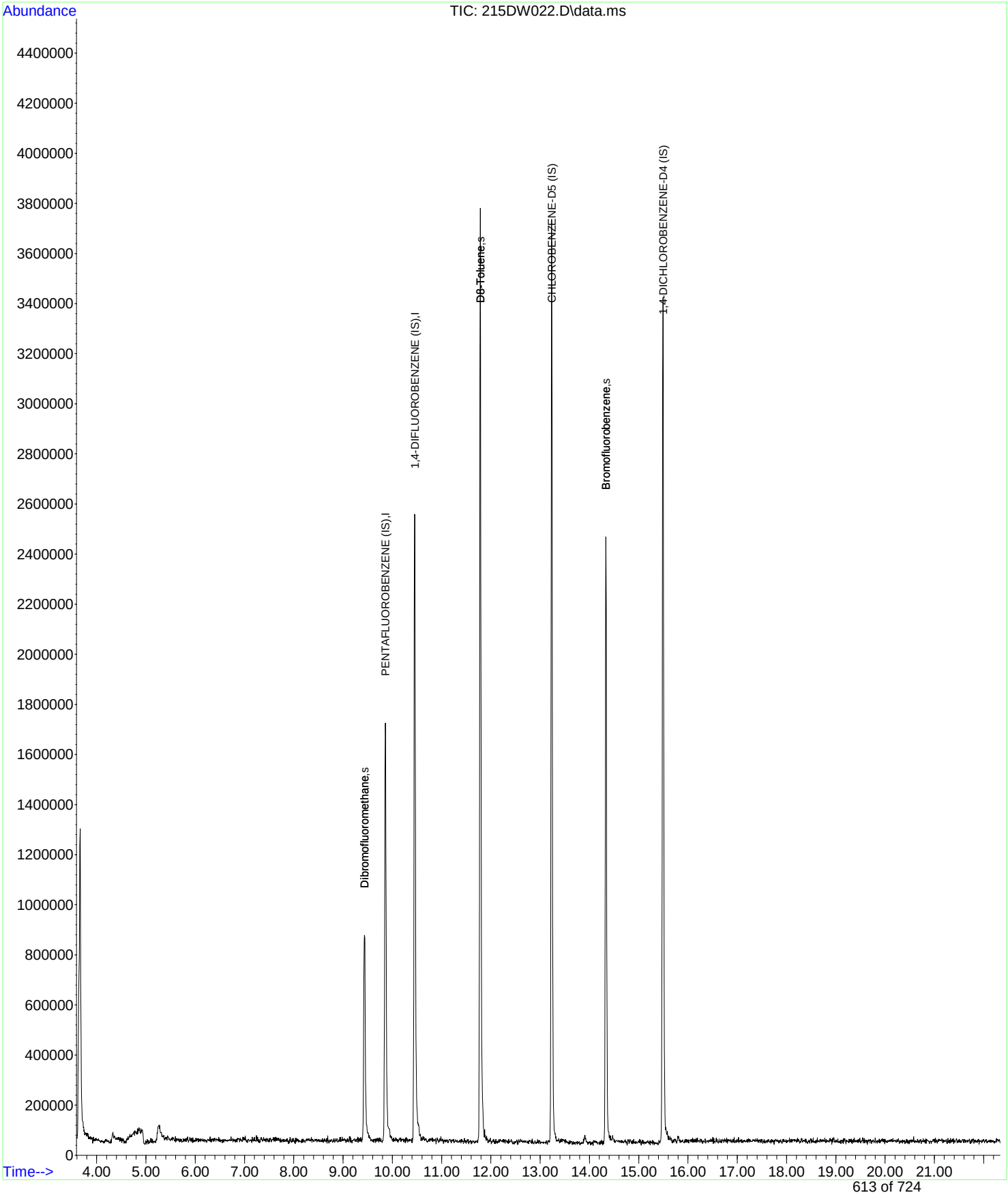
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2601119	52.54 ug/L #	93
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	1039	N.D.	
57) T-1,3-Dichloropropene	12.248	75	1289	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	12.430	97	1091	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	12.600	76	1035	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	13.235	112	1709	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	13.911	105	1608	N.D.	
74) Bromofluorobenzene	14.334	95	1066608	47.00 ug/L #	79
75) n-Propylbenzene	14.428	91	1093	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.445	83	1127	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D. d	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.921	91	1100	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.479	146	2376	N.D.	
89) 1,4-Dichlorobenzene	15.479	146	2376	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW022.D
Acq On : 28 Apr 2021 5:46 pm
Operator : kkw
Sample : AE03549-01
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Apr 29 06:51:26 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW023.D
Acq On : 28 Apr 2021 6:13 pm
Operator : kkw
Sample : 1D28033-MS1
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 29 06:51:30 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1069446	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2297951	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1443786	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1181144	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	672454	60.55	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 121.10%				
52) D8-Toluene	11.784	98	2887196	57.29	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 114.58%				
73) Bromofluorobenzene	14.334	95	1155816	45.88	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 91.76%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	263258	20.50	ug/L		97
3) Chloromethane	4.410	50	214456	29.58	ug/L		98
4) Vinyl Chloride	4.586	62	227784	23.82	ug/L		94
5) Bromomethane	5.238	94	92031	24.17	ug/L	#	88
6) Chloroethane	5.468	64	162068	26.87	ug/L	#	93
7) Trichlorofluoromethane	5.708	101	367890	23.86	ug/L		96
8) Diethyl ether	6.178	59	152375	27.89	ug/L		96
9) 1,1-Dichloroethene	6.543	96	231872	26.68	ug/L		96
10) Trichlorotrifluoroethane	6.560	151	152072	21.80	ug/L		97
11) Acrolein	7.030	56	99625	104.08	ug/L		99
12) Iodomethane	6.784	142	220963	19.42	ug/L		96
13) Carbon Disulfide	6.631	76	800948	29.25	ug/L		98
14) 3-chloropropene	7.195	41	290789	32.38	ug/L		89
15) Acetone	7.401	43	154017	123.91	ug/L		93
16) Methylene Chloride	7.342	84	261570	28.85	ug/L		86
17) Methyl Acetate	7.530	43	85402	29.51	ug/L	#	89
18) t-1,2-Dichloroethene	7.547	96	240368	25.61	ug/L		89
19) Methyl tert-butyl ether	7.630	73	533867	26.73	ug/L		98
20) Acetonitrile	8.059	41	121400	157.27	ug/L	#	75
21) Isopropyl ether	8.053	45	568632	29.81	ug/L		96
22) Chloroprene	8.282	88	234195	28.51	ug/L		99
23) 1,1-Dichloroethane	8.317	63	484059	31.34	ug/L		98
24) Acrylonitrile	8.399	53	62244	34.38	ug/L	#	86
25) Vinyl Acetate	8.552	43	237747	22.56	ug/L		98
26) c-1,2-Dichloroethene	8.952	96	269248	25.67	ug/L		95
27) 2,2-Dichloropropane	9.081	77	372777	23.83	ug/L	#	95
28) Bromochloromethane	9.187	128	105761	19.62	ug/L		84
29) Cyclohexane	9.193	56	430564	30.41	ug/L		91
30) Chloroform	9.228	83	499722	23.85	ug/L		98
32) Dibromofluoromethane	9.434	113	672454	60.55	ug/L	#	91
33) 2-Butanone	9.551	72	100840	126.38	ug/L		93
34) 1,1,1-Trichloroethane	9.492	97	410448	22.98	ug/L		98
35) 1,1-Dichloropropene	9.616	75	366209	25.83	ug/L		98
36) Propionitrile	9.898	54	19754	30.26	ug/L	#	1
37) Methacrylonitrile	9.915	41	156634	45.22	ug/L	#	67
38) Isobutyl Alcohol	9.904	43	171273	396.04	ug/L	#	42
40) Carbon Tetrachloride	9.416	117	387198	25.72	ug/L	#	74
41) Benzene	9.880	78	1098162	23.35	ug/L		99
42) 1,2-Dichloroethane	10.092	62	325592	20.20	ug/L		97
43) Trichloroethene	10.456	130	266368	22.64	ug/L		88
44) Methyl cyclohexane	10.456	83	523973	22.62	ug/L		98
45) Dibromomethane	10.908	93	138515	20.37	ug/L		95
46) 1,2-Dichloropropane	10.991	63	249323	25.13	ug/L		94
47) Bromodichloromethane	11.020	83	339529	22.40	ug/L		98
48) Methyl Methacrylate	11.085	69	115761	22.23	ug/L		92
49) 1,4-Dioxane	11.220	88	19683	389.05	ug/L	#	51
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.619	75	394468	20.78	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW023.D
Acq On : 28 Apr 2021 6:13 pm
Operator : kkw
Sample : 1D28033-MS1
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 29 06:51:30 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

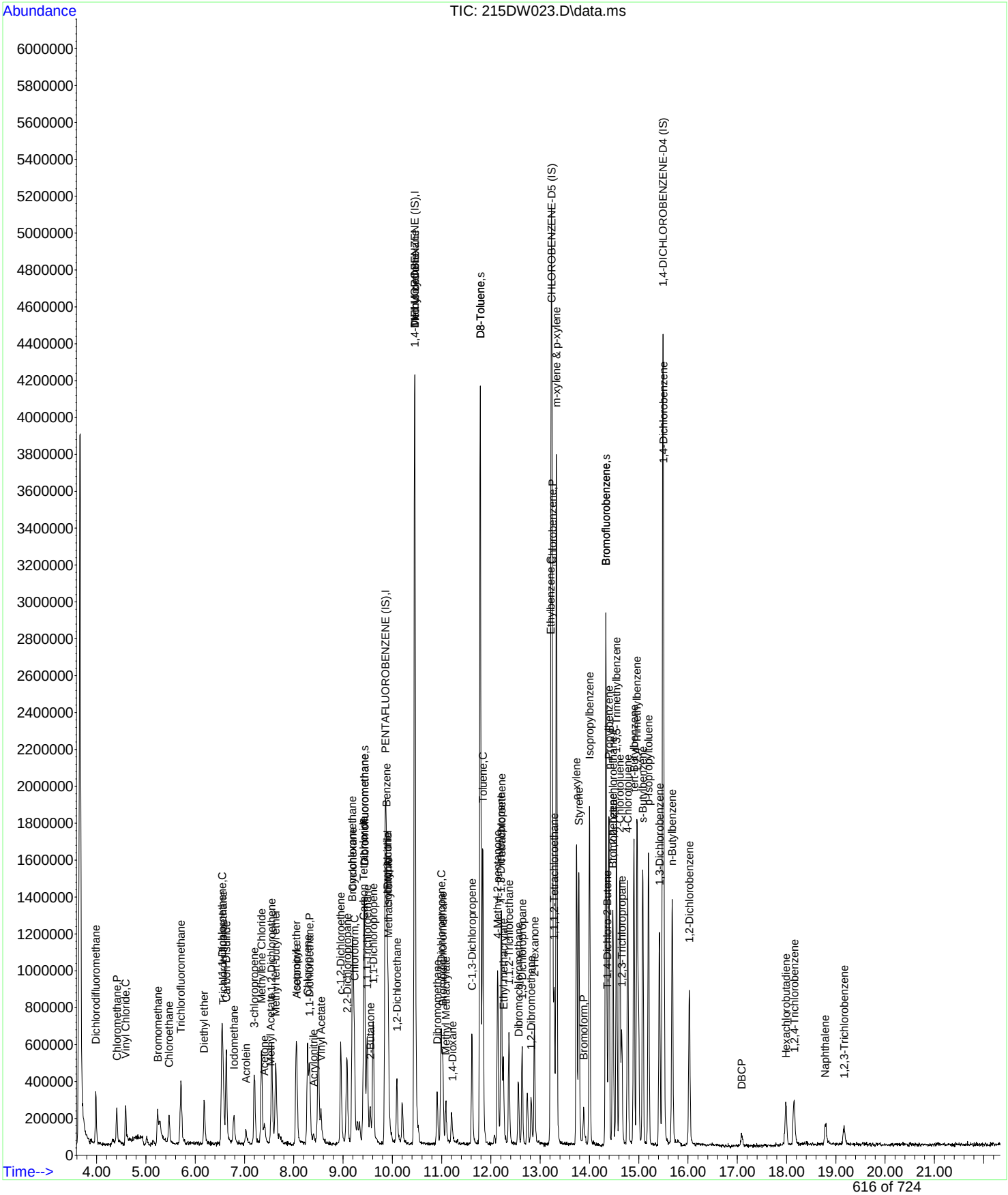
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	2887196	57.29	ug/L		94
54) 4-Methyl-2-pentanone	12.130	100	115400	86.07	ug/L	#	84
56) Toluene	11.837	92	749376	23.69	ug/L		99
57) T-1,3-Dichloropropene	12.201	75	359071	20.50	ug/L		98
58) Tetrachloroethene	12.213	164	189154	20.96	ug/L		97
59) Ethyl methacrylate	12.254	69	238119	20.34	ug/L		96
60) 1,1,2-Trichloroethane	12.365	97	213480	20.70	ug/L		96
61) Dibromochloromethane	12.559	129	193824	17.49	ug/L	#	96
62) 1,3-Dichloropropane	12.636	76	341865	18.64	ug/L		96
63) 1,2-Dibromoethane	12.812	107	194826	18.55	ug/L		100
64) 2-Hexanone	12.883	43	395645	101.32	ug/L		96
65) Ethylbenzene	13.212	106	434570	22.17	ug/L		99
66) Chlorobenzene	13.247	112	739985	21.93	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.282	131	226245	19.84	ug/L		98
68) m-xylene & p-xylene	13.329	106	1148164	45.17	ug/L		95
69) o-xylene	13.734	106	468497	19.49	ug/L		96
70) Styrene	13.781	104	863242	22.21	ug/L		96
71) Bromoform	13.881	173	77470	13.91	ug/L		94
72) Isopropylbenzene	13.999	105	1278619	21.07	ug/L		98
74) Bromofluorobenzene	14.334	95	1155816	45.88	ug/L	#	79
75) n-Propylbenzene	14.393	91	1596922	20.54	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.475	83	241855	17.44	ug/L		96
77) 1,2,3-Trichloropropane	14.657	61	56479	21.83	ug/L	#	69
78) T-1,4-Dichloro-2-Butene	14.357	53	73413	15.65	ug/L	#	20
80) Bromobenzene	14.469	156	244980	19.45	ug/L		88
81) 1,2,4-Trimethylbenzene	14.962	105	1107978	21.55	ug/L		96
82) 2-Chlorotoluene	14.616	91	951180	22.43	ug/L		98
83) 4-Chlorotoluene	14.774	91	973430	23.09	ug/L		99
84) tert-Butylbenzene	14.904	119	923890	22.76	ug/L		96
85) 1,3,5-Trimethylbenzene	14.545	105	1095717	21.95	ug/L		99
86) p-Isopropyltoluene	15.197	119	1039438	18.52	ug/L		99
87) s-Butylbenzene	15.080	105	1231532	18.89	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	513062	19.42	ug/L		96
89) 1,4-Dichlorobenzene	15.503	146	518375	19.52	ug/L	#	78
90) n-Butylbenzene	15.673	91	1014725	22.10	ug/L		97
91) 1,2-Dichlorobenzene	16.026	146	418706	19.24	ug/L		99
92) DBCP	17.089	157	15139	11.05	ug/L		83
93) Hexachlorobutadiene	17.988	225	44443	18.44	ug/L		94
94) 1,2,4-Trichlorobenzene	18.153	180	116729	25.40	ug/L	#	89
95) Naphthalene	18.782	128	169445	23.43	ug/L		100
96) 1,2,3-Trichlorobenzene	19.169	180	50049	28.11	ug/L	#	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW023.D
Acq On : 28 Apr 2021 6:13 pm
Operator : kkw
Sample : 1D28033-MS1
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 29 06:51:30 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW024.D
Acq On : 28 Apr 2021 6:41 pm
Operator : kkw
Sample : 1D28033-MSD1
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 29 06:51:34 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1128632	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2396073	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1431927	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1112373	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	689169	58.80	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 117.60%				
52) D8-Toluene	11.784	98	3033812	57.73	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 115.46%				
73) Bromofluorobenzene	14.334	95	1082393	43.32	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 86.64%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	281659	20.78	ug/L		99
3) Chloromethane	4.404	50	237387	30.70	ug/L		96
4) Vinyl Chloride	4.586	62	213741	21.39	ug/L	#	57
5) Bromomethane	5.232	94	101438	25.15	ug/L		94
6) Chloroethane	5.462	64	170956	26.86	ug/L		95
7) Trichlorofluoromethane	5.708	101	382636	23.51	ug/L		99
8) Diethyl ether	6.178	59	150143	26.34	ug/L		90
9) 1,1-Dichloroethene	6.537	96	232357	25.33	ug/L		97
10) Trichlorotrifluoroethane	6.560	151	154221	20.95	ug/L		98
11) Acrolein	7.030	56	93913	94.03	ug/L	#	80
12) Iodomethane	6.784	142	246864	20.56	ug/L		97
13) Carbon Disulfide	6.631	76	830915	28.75	ug/L		96
14) 3-chloropropene	7.201	41	319700	33.43	ug/L	#	86
15) Acetone	7.401	43	169657	128.38	ug/L		93
16) Methylene Chloride	7.342	84	268120	28.10	ug/L		91
17) Methyl Acetate	7.524	43	83322	27.88	ug/L	#	92
18) t-1,2-Dichloroethene	7.547	96	268813	27.01	ug/L		94
19) Methyl tert-butyl ether	7.630	73	545547	26.00	ug/L		94
20) Acetonitrile	8.053	41	109385	137.03	ug/L	#	65
21) Isopropyl ether	8.059	45	610012	30.20	ug/L		98
22) Chloroprene	8.282	88	235697	27.36	ug/L		95
23) 1,1-Dichloroethane	8.323	63	482045	29.80	ug/L	#	96
24) Acrylonitrile	8.399	53	45898	24.22	ug/L	#	96
25) Vinyl Acetate	8.546	43	283618	25.37	ug/L		100
26) c-1,2-Dichloroethene	8.952	96	274676	24.89	ug/L		93
27) 2,2-Dichloropropane	9.075	77	410127	24.76	ug/L		97
28) Bromochloromethane	9.193	128	125358	22.04	ug/L		100
29) Cyclohexane	9.193	56	447091	30.00	ug/L		95
30) Chloroform	9.222	83	505003	22.84	ug/L		98
32) Dibromofluoromethane	9.428	113	689169	58.80	ug/L	#	92
33) 2-Butanone	9.557	72	103532	123.43	ug/L		95
34) 1,1,1-Trichloroethane	9.486	97	428979	22.76	ug/L		95
35) 1,1-Dichloropropene	9.610	75	385053	25.74	ug/L		95
36) Propionitrile	9.904	54	22078	31.99	ug/L	#	5
37) Methacrylonitrile	9.915	41	150572	41.30	ug/L	#	76
38) Isobutyl Alcohol	9.909	43	170577	376.57	ug/L	#	41
40) Carbon Tetrachloride	9.416	117	404573	25.77	ug/L	#	81
41) Benzene	9.886	78	1139061	23.22	ug/L		100
42) 1,2-Dichloroethane	10.092	62	322108	19.17	ug/L		95
43) Trichloroethene	10.456	130	253432	20.66	ug/L	#	80
44) Methyl cyclohexane	10.456	83	537409	22.25	ug/L		97
45) Dibromomethane	10.902	93	139132	19.62	ug/L		96
46) 1,2-Dichloropropane	10.991	63	258234	24.97	ug/L		93
47) Bromodichloromethane	11.020	83	341487	21.60	ug/L		96
48) Methyl Methacrylate	11.090	69	112433	20.87	ug/L		99
49) 1,4-Dioxane	11.214	88	24389	453.50	ug/L	#	48
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.619	75	397731	20.13	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW024.D
Acq On : 28 Apr 2021 6:41 pm
Operator : kkw
Sample : 1D28033-MSD1
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 29 06:51:34 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

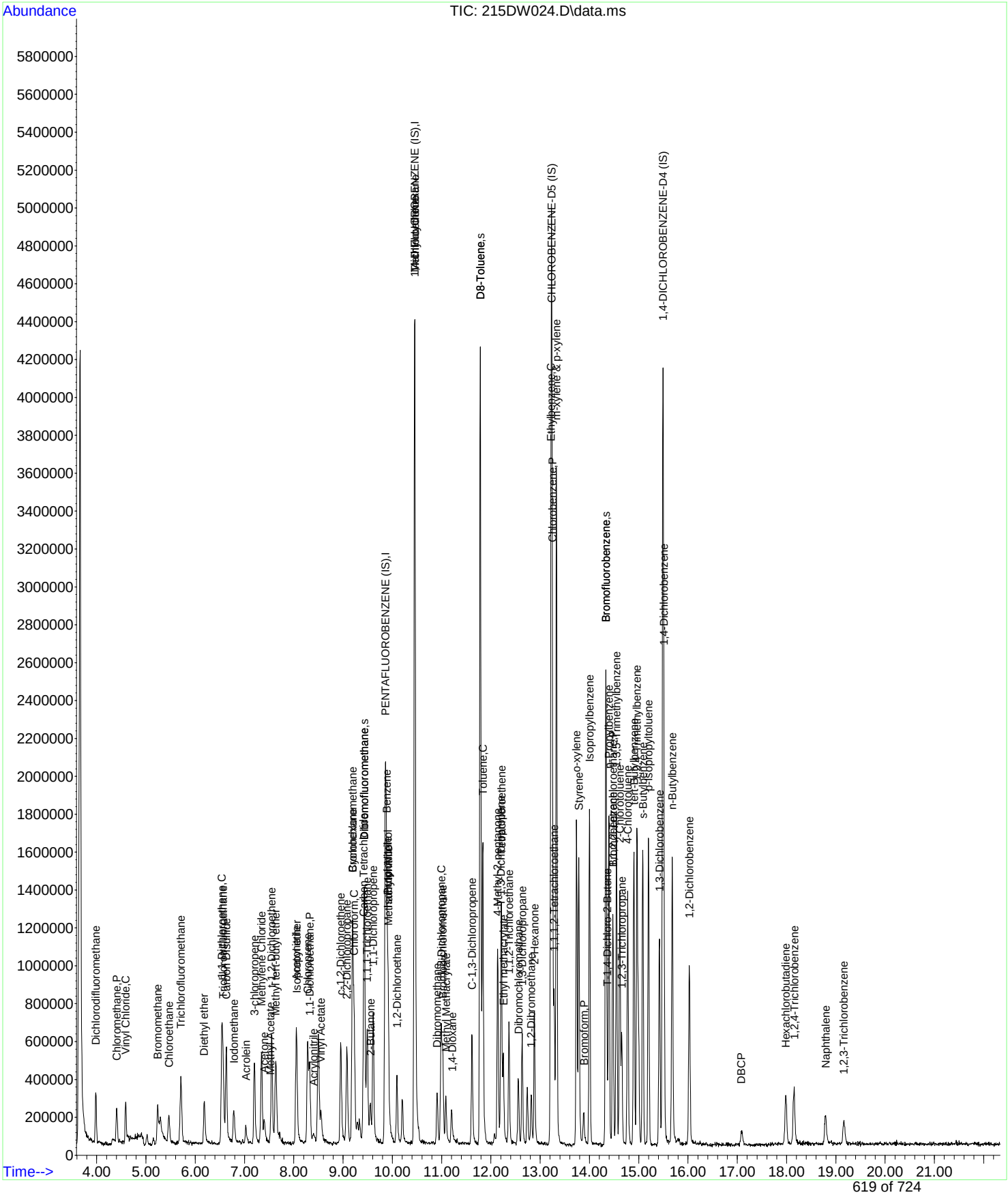
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3033812	57.73	ug/L		96
54) 4-Methyl-2-pentanone	12.130	100	147480	105.49	ug/L		94
56) Toluene	11.837	92	756795	24.12	ug/L		98
57) T-1,3-Dichloropropene	12.201	75	358894	20.66	ug/L		98
58) Tetrachloroethene	12.213	164	178733	19.97	ug/L		91
59) Ethyl methacrylate	12.254	69	247358	21.24	ug/L		97
60) 1,1,2-Trichloroethane	12.365	97	223163	21.81	ug/L		94
61) Dibromochloromethane	12.559	129	203286	18.50	ug/L		98
62) 1,3-Dichloropropane	12.636	76	367287	20.19	ug/L		95
63) 1,2-Dibromoethane	12.818	107	189309	18.17	ug/L	#	93
64) 2-Hexanone	12.883	43	440680	112.66	ug/L		96
65) Ethylbenzene	13.217	106	419261	21.57	ug/L		98
66) Chlorobenzene	13.247	112	724232	21.64	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.282	131	203707	18.01	ug/L		97
68) m-xylene & p-xylene	13.329	106	1059513	42.03	ug/L		98
69) o-xylene	13.734	106	508276	21.32	ug/L		96
70) Styrene	13.781	104	849017	22.03	ug/L		98
71) Bromoform	13.887	173	79542	14.40	ug/L		96
72) Isopropylbenzene	13.999	105	1266578	21.04	ug/L		99
74) Bromofluorobenzene	14.334	95	1082393	43.32	ug/L	#	78
75) n-Propylbenzene	14.393	91	1477763	19.17	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.475	83	219785	15.98	ug/L		98
77) 1,2,3-Trichloropropane	14.657	61	43072	16.79	ug/L		87
78) T-1,4-Dichloro-2-Butene	14.357	53	68610	14.75	ug/L	#	53
80) Bromobenzene	14.475	156	217029	18.30	ug/L		86
81) 1,2,4-Trimethylbenzene	14.962	105	1067701	22.04	ug/L		100
82) 2-Chlorotoluene	14.616	91	876029	21.93	ug/L		97
83) 4-Chlorotoluene	14.774	91	887725	22.40	ug/L		99
84) tert-Butylbenzene	14.904	119	822322	21.55	ug/L		96
85) 1,3,5-Trimethylbenzene	14.545	105	1038058	22.08	ug/L		98
86) p-Isopropyltoluene	15.197	119	1052339	19.91	ug/L		97
87) s-Butylbenzene	15.086	105	1289632	21.00	ug/L		98
88) 1,3-Dichlorobenzene	15.421	146	497645	20.00	ug/L		97
89) 1,4-Dichlorobenzene	15.509	146	493263	19.72	ug/L	#	79
90) n-Butylbenzene	15.679	91	1102839	25.30	ug/L		97
91) 1,2-Dichlorobenzene	16.026	146	473564	22.97	ug/L		99
92) DBCP	17.078	157	22134	16.78	ug/L		84
93) Hexachlorobutadiene	17.983	225	49511	21.67	ug/L		90
94) 1,2,4-Trichlorobenzene	18.153	180	123196	27.86	ug/L		92
95) Naphthalene	18.793	128	227480	30.08	ug/L		98
96) 1,2,3-Trichlorobenzene	19.158	180	53790	30.96	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\042821\
Data File : 215DW024.D
Acq On : 28 Apr 2021 6:41 pm
Operator : kkw
Sample : 1D28033-MSD1
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Apr 29 06:51:34 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2103052
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA65289

Instrument: OVGCMS2

Calibration ID: UNASSIGNED = 2103054

Printed: 3/9/2021 1:53:16PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA65289-TUN1	QC		1		A0I0903			
AA65289-CAL1	QC		2		A1C0778	A1B0764		
AA65289-CAL2	QC		3		A1C0779	A1B0764		
AA65289-CAL3	QC		4		A1C0780	A1B0764		
AA65289-CAL4	QC		5		A1C0781	A1B0764		
AA65289-CAL5	QC		6		A1C0782	A1B0764		
AA65289-CAL6	QC		7		A1C0783	A1B0764		
AA65289-CAL7	QC		8		A1C0784	A1B0764		
AA65289-CAL8	QC		9		A1C0785	A1B0764		
AA65289-SCV1	QC		10		A1C0786	A1B0764		

Samples Loaded By — 03/09/21 Date

Data Processed By — 3/10/21 Date

Sequence Name: C:\HPCHEM\1\SEQUENCE\212CD.S
Comment:
Operator: KG
Data Path: C:\HPchem\1\DATA\030921\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212CD001	8260S	AA65289-TUN1
2	Sample	2	212CD002	8260S	AA65289-CAL1
3	Sample	3	212CD003	8260S	AA65289-CAL2
4	Sample	4	212CD004	8260S	AA65289-CAL3
5	Sample	5	212CD005	8260S	AA65289-CAL4
6	Sample	6	212CD006	8260S	AA65289-CAL5
7	Sample	7	212CD007	8260S	AA65289-CAL6
8	Sample	8	212CD008	8260S	AA65289-CAL7
9	Sample	9	212CD009	8260S	AA65289-CAL8
10	Sample	10	212CD010	8260S	rinse
11	Sample	11	212CD011	8260S	rinse
12	Sample	12	212CD012	8260S	rinse
13	Sample	13	212CD013	8260S	AA65289-SCV1
14	Sample	14	212CD014	8260S	1C09037-BS1
15	Sample	15	212CD015	8260S	1C09037-MS1
16	Sample	15	212CD016	8260S	1C09037-MSD1
17	Sample	16	212CD017	8260S	RINSE
18	Sample	17	212CD018	8260S	RINSE
19	Sample	18	212CD019	8260S	RINSE
20	Sample	19	212CD020	8260S	1C09037-BLK1
21	Sample	20	212CD021	8260S	AE01878-01
22	Sample	21	212CD022	8260S	AE01528-01RE1
23	Sample	22	212CD023	8260S	AE01808-04
24	Sample	23	212CD024	8260S	AE01808-05
25	Sample	24	212CD025	8260S	AE01808-06
26	Sample	25	212CD026	8260S	AE01808-07
27	Sample	26	212CD027	8260S	AE01808-08
28	Sample	27	212CD028	8260S	AE01808-09
29	Sample	28	212CD029	8260S	AE01808-10
30	Sample	29	212CD030	8260S	AE01808-11
31	Sample	30	212CD031	8260S	AE01808-12
32	Sample	31	212CD032	8260S	AE01808-13
33	Sample	32	212CD033	8260S	AE01808-14
34	Sample	33	212CD034	8260S	AE01808-15
35	Sample	34	212CD035	8260S	AE01808-16
36	Sample	35	212CD036	8260S	AE01808-17

Compound List Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Initial Calibration
Total Cpnds : 96

PK#	Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1 I	Pentafluorobenzene(IS)	168	11.44	1.000	A	2	A	B
2	Dichlorodifluoromethane	85	5.88	0.514	A	3	A	B
3 **	Chloromethane	50	6.35	0.555	A	2	A	B
4 *	Vinyl Chloride	62	6.54	0.572	A	2	A	B
5	Bromomethane	96	7.18	0.627	QO	2	A	B
6	Chloroethane	64	7.41	0.648	A	2	A	R
7	Trichlorofluoromethane	101	7.68	0.671	A	2	A	B
8	Trichlorotrifluoroethane	101	8.51	0.743	A	1	A	B
9	acrolein	56	8.87	0.775	A	1	A	B
10	Acetone	43	9.22	0.806	LO	1	A	B
11 *m	1,1-Dichloroethene	96	8.46	0.740	A	2	A	B
12	3-Chloropropene	76	9.06	0.791	A	1	A	B
13	Acetonitrile	41	9.76	0.853	A	2	A	B
14	Iodomethane	142	8.69	0.759	LO	2	A	B
15	Carbon disulfide	76	8.58	0.750	A	1	A	B
16	Methylene Chloride	84	9.18	0.803	A	3	A	B
17	Methyl tert-butyl ether	73	9.50	0.830	A	2	A	B
18	Acrylonitrile	53	10.09	0.882	A	2	A	B
19	T-1,2-Dichloroethene	96	9.41	0.822	A	2	A	B
20	Isopropyl Ether	45	9.88	0.863	A	1	A	B
21	C-1,2-Dichloroethene	96	10.65	0.930	A	2	A	B
22 **	1,1-Dichloroethane	63	10.09	0.882	A	3	A	B
23	Vinyl Acetate	43	10.27	0.898	A	1	A	B
24	Chloroprene	88	10.07	0.880	A	2	A	B
25	2-Butanone	72	11.15	0.974	LO	2	A	B
26	Propionitrile	54	11.43	0.999	A	0	A	B
27	2,2-Dichloropropane	77	10.77	0.941	A	1	A	B
28	Methacrylonitrile	67	11.47	1.002	A	1	A	B
29 *	Chloroform	83	10.87	0.949	A	2	A	B
30 S	Dibromofluoromethane	113	11.05	0.965	A	0	A	B
31	Dibromofluoromethane	113	11.10	0.970	A	0	A	B
32	Bromochloromethane	128	10.84	0.948	A	2	A	B
33	1,1,1-Trichloroethane	97	11.16	0.975	A	2	A	B
34	1,1-Dichloropropene	75	11.26	0.984	A	2	A	B
35	Diethyl Ether	59	8.10	0.708	A	2	A	B
36	Methyl Acetate	74	9.36	0.818	A	2	A	B
37	Cyclohexane	56	10.93	0.955	A	2	A	B
38 I	1,4-Difluorobenzene(IS)	114	11.99	1.000	A	2	A	B
39	Methyl Cyclohexane	55	12.05	1.005	A	2	A	B
40	Carbon Tetrachloride	117	11.13	0.928	A	2	A	B
41	1,2-Dichloroethane	62	11.64	0.971	A	2	A	B
42 m	Benzene	78	11.50	0.959	LO	2	A	B
43	Isobutyl Alcohol	43	11.52	0.961	A	2	A	B
44 m	Trichloroethene	130	12.02	1.002	A	3	A	B
45 *	1,2-Dichloropropane	63	12.47	1.039	A	2	A	B
46	Methyl Methacrylate	100	12.55	1.046	A	1	A	B
47	1,4-Dioxane	88	12.68	1.057	A	1	A	B
48	Bromodichloromethane	83	12.48	1.041	A	2	A	B
49	Dibromomethane	93	12.39	1.033	A	2	A	B
50	4-Methyl-2-Pentanone	100	13.48	1.124	LO	3	A	B
51	2-Chloroethyl vinyl ether	63	12.90	1.075	LO	2	A	B
52	2-Hexanone	43	14.18	1.182	A	3	A	B
53	C-1,3-Dichloropropene	75	13.03	1.086	A	2	A	B
54 S	D8-Toluene	98	13.21	1.101	A	2	A	B
55	D8-Toluene	98	13.27	1.106	A	2	A	B
56 I	Chlorobenzene-d5(IS)	82	14.59	1.000	A	2	A	B
57 m*	Toluene	92	13.26	0.909	A	2	A	B
58	Ethyl Methacrylate	69	13.60	0.933	A	3	A	B
59	T-1,3-Dichloropropene	75	13.55	0.929	A	2	A	B
60	1,1,2-Trichloroethane	97	13.70	0.939	A	3	A	B
61	1,3-Dichloropropane	76	13.96	0.957	A	1	A	B
62	Tetrachloroethene	164	13.63	0.935	A	3	A	B
63	Dibromochloromethane	129	13.90	0.953	A	2	A	B
64	1,2-Dibromoethane	107	14.16	0.970	A	2	A	B
65 **m	Chlorobenzene	112	14.61	1.001	A	2	A	B

66		1,1,1,2-Tetrachloroethane	131	14.63	1.003	A	2	A	B
67	*	Ethylbenzene	106	14.56	0.999	A	1	A	B
68		m-xylene & p-xylene	106	14.68	1.006	A	1	A	B
69		O-Xylene	106	15.09	1.035	A	1	A	B
70	**	Bromoform	173	15.23	1.044	A	3	A	B
71		Styrene	104	15.14	1.038	A	2	A	B
72		Isopropylbenzene	105	15.36	1.053	A	1	A	B
73		1,2,3-Trichloropropane	75	15.99	1.096	A	1	A	B
74	**	1,1,2,2-Tetrachloroethane	83	15.80	1.083	A	3	A	B
75	S	Bromofluorobenzene	95	15.71	1.077	A	2	A	B
76		Bromofluorobenzene	95	15.71	1.077	A	2	A	B
77		T-1,4-dichloro-2-butene	53	15.98	1.096	A	2	A	B
78		N-Propylbenzene	91	15.77	1.081	A	1	A	B
79	I	1,4-Dichlorobenzene-d4(IS)	152	16.94	1.000	A	2	A	B
80		Bromobenzene	156	15.86	0.936	A	2	A	B
81		1,3,5-Trimethylbenzene	105	15.93	0.940	A	1	A	B
82		2-Chlorotoluene	91	16.01	0.945	A	1	A	B
83		4-Chlorotoluene	91	16.17	0.955	A	1	A	B
84		1,2,4-Trimethylbenzene	105	16.37	0.966	A	1	A	B
85		s-Butylbenzene	105	16.51	0.974	A	1	A	B
86		tert-Butylbenzene	119	16.31	0.962	A	2	A	B
87		p-Isopropyltoluene	119	16.62	0.981	A	2	A	B
88		1,3-Dichlorobenzene	146	16.87	0.996	A	2	A	B
89		1,4-Dichlorobenzene	146	16.97	1.002	A	2	A	B
90		1,2-Dichlorobenzene	146	17.54	1.035	A	2	A	B
91		N-Butylbenzene	91	17.14	1.012	A	2	A	B
92		DBCP	75	18.65	1.101	LO	2	A	B
93		Naphthalene	128	20.63	1.217	QO	0	A	B
94		1,2,4-Trichlorobenzene	180	19.92	1.176	A	2	A	B
95		Hexachlorobutadiene	225	19.78	1.168	A	2	A	B
96		1,2,3-Trichlorobenzene	180	21.07	1.244	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

030921.M Wed Mar 10 11:37:57 2021

Compound Name Duplication Report

Quant Method: C:\HPCHEM\1\METHODS\030921.M
Number of Compounds: 96

30 Dibromofluoromethane = 31 Dibromofluoromethane
54 D8-Toluene = 55 D8-Toluene
75 Bromofluorobenzene = 76 Bromofluorobenzene

3 Duplicate Names Detected!!!

Response Factor Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Initial Calibration

Calibration Files
1 =212CD002.D 5 =212CD004.D 20 =212CD006.D
50 =212CD007.D 100 =212CD009.D 10 =212CD005.D

		Compound	1	5	20	50	100	10	Avg	%RSD
1)	i	Pentafluorobenzene(IS	----------	ISTD	----------					
2)		Dichlorodifluoromet	0.963	0.913	1.144	1.135	1.257	0.935	1.073	12.71
3)	**	Chloromethane	1.218	1.021	1.141	1.094	1.222	0.977	1.125	7.91
4)	*	Vinyl Chloride	0.783	0.768	0.925	0.908	0.999	0.780	0.872	10.68
5)		Bromomethane	0.486	0.478	0.440	0.330		0.469	0.422	25.19
6)		Chloroethane	0.528	0.409	0.464	0.442	0.460	0.431	0.459	7.64
7)		Trichlorofluorometh	0.757	0.757	0.911	0.888	0.949	0.773	0.844	10.49
8)		Trichlorotrifluoroe	0.510	0.496	0.538	0.557	0.579	0.495	0.535	6.63
9)		acrolein	0.160	0.145	0.143	0.147	0.147	0.131	0.147	5.75
10)		Acetone	0.287	0.210	0.191	0.190	0.191	0.175	0.210	17.57
11)	*m	1,1-Dichloroethene	0.505	0.447	0.474	0.513	0.529	0.426	0.492	7.99
12)		3-Chloropropene	0.398	0.285	0.309	0.307	0.317	0.282	0.319	11.40
13)		Acetonitrile	0.063	0.073	0.080	0.089	0.095	0.074	0.081#	14.86
14)		Iodomethane	0.309	0.376	0.576	0.665	0.721	0.459	0.523	32.97
15)		Carbon disulfide	1.605	1.435	1.767	1.784	1.798	1.685	1.675	9.26
16)		Methylene Chloride	0.731	0.570	0.646	0.625	0.608	0.630	0.637	7.37
17)		Methyl tert-butyl e	1.692	1.519	1.606	1.652	1.665	1.451	1.629	6.09
18)		Acrylonitrile	0.355	0.355	0.340	0.343	0.342	0.325	0.344	2.94
19)		T-1,2-Dichloroethen	0.555	0.483	0.510	0.533	0.573	0.460	0.529	7.83
20)		Isopropyl Ether	2.997	2.591	2.646	2.746	2.743	2.451	2.742	6.57
21)		C-1,2-Dichloroethen	0.549	0.534	0.558	0.594	0.623	0.503	0.573	7.81
22)	**	1,1-Dichloroethane	1.281	1.086	1.078	1.088	1.096	0.990	1.120	8.06
23)		Vinyl Acetate	2.086	1.887	1.753	1.718	1.670	1.693	1.819	8.67
24)		Chloroprene	0.438	0.465	0.463	0.476	0.484	0.442	0.469	4.51
25)		2-Butanone	0.077	0.069	0.058	0.059	0.061	0.055	0.067#	18.60
26)		Propionitrile	0.099	0.091	0.088	0.091	0.094	0.079	0.092#	6.63
27)		2,2-Dichloropropane	0.930	0.770	0.826	0.863	0.918	0.766	0.855	7.69
28)		Methacrylonitrile	0.295	0.252	0.237	0.238	0.239	0.229	0.252	9.86
29)	*	Chloroform	1.055	0.976	1.014	1.018	1.075	0.919	1.034	6.51
30)	s	Dibromofluoromethan	0.549	0.554	0.554	0.553	0.577	0.550	0.559	1.88
31)		Dibromofluoromethan	0.549	0.554	0.554	0.553	0.577	0.550	0.559	1.88
32)		Bromochloromethane	0.381	0.315	0.325	0.340	0.354	0.304	0.343	7.76
33)		1,1,1-Trichloroetha	0.821	0.773	0.797	0.828	0.864	0.726	0.817	6.16
34)		1,1-Dichloropropene	0.792	0.719	0.789	0.817	0.853	0.711	0.800	7.52
35)		Diethyl Ether	0.625	0.535	0.553	0.578	0.602	0.503	0.580	7.95
36)		Methyl Acetate	0.127	0.105	0.099	0.102	0.105	0.098	0.110	12.50
37)		Cyclohexane	0.972	0.914	0.944	0.967	0.992	0.861	0.957	5.28
38)	i	1,4-Difluorobenzene(I	----------	ISTD	----------					
39)		Methyl Cyclohexane	0.419	0.455	0.400	0.416	0.416	0.371	0.411	6.10
40)		Carbon Tetrachlorid	0.469	0.446	0.448	0.471	0.480	0.429	0.464	4.34
41)		1,2-Dichloroethane	0.496	0.463	0.460	0.470	0.478	0.432	0.478	6.83
42)	m	Benzene	1.574	1.149	1.058	1.065	1.064	1.024	1.177	16.98
43)		Isobutyl Alcohol	0.031	0.029	0.028	0.028	0.027	0.026	0.029#	6.14
44)	m	Trichloroethene	0.316	0.305	0.309	0.327	0.342	0.290	0.321	5.93
45)	*	1,2-Dichloropropane	0.465	0.354	0.337	0.352	0.352	0.321	0.367	12.37
46)		Methyl Methacrylate	0.082	0.097	0.090	0.095	0.098	0.085	0.093#	7.38
47)		1,4-Dioxane	0.002	0.003	0.003	0.003	0.003	0.002	0.003#	10.92
48)		Bromodichloromethan	0.458	0.403	0.419	0.428	0.440	0.387	0.428	5.57
49)		Dibromomethane	0.225	0.196	0.212	0.217	0.230	0.191	0.216	6.93
50)		4-Methyl-2-Pentanon	0.061	0.045	0.041	0.044	0.044	0.042	0.047#	15.53
51)		2-Chloroethyl vinyl	0.071	0.062	0.073	0.087	0.097	0.062	0.077#	18.49
52)		2-Hexanone	0.272	0.266	0.253	0.263	0.261	0.251	0.268	7.34
53)		C-1,3-Dichloroprope	0.605	0.543	0.571	0.601	0.606	0.524	0.586	6.15
54)	s	D8-Toluene	0.935	0.942	0.934	0.939	0.946	0.955	0.942	0.75
55)		D8-Toluene	0.935	0.942	0.934	0.939	0.946	0.955	0.942	0.75
56)	i	Chlorobenzene-d5(IS)	----------	ISTD	----------					

(#) = Out of Range ### Number of calibration levels exceeded format ###

Response Factor Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Initial Calibration

Calibration Files
1 =212CD002.D 5 =212CD004.D 20 =212CD006.D
50 =212CD007.D 100 =212CD009.D 10 =212CD005.D

		Compound	1	5	20	50	100	10	Avg	%RSD
57)	m*	Toluene	1.403	1.337	1.334	1.418	1.433	1.220	1.383	5.91
58)		Ethyl Methacrylate	1.090	1.034	0.940	0.948	0.937	0.883	0.976	6.72
59)		T-1,3-Dichloroprope	0.973	0.954	0.993	1.018	1.027	0.892	0.995	5.52
60)		1,1,2-Trichloroetha	0.563	0.504	0.523	0.547	0.541	0.492	0.538	5.89
61)		1,3-Dichloropropane	1.226	1.080	1.109	1.133	1.137	1.006	1.141	7.28
62)		Tetrachloroethene	0.399	0.397	0.421	0.428	0.441	0.394	0.420	4.92
63)		Dibromochloromethan	0.680	0.722	0.730	0.775	0.793	0.637	0.741	7.98
64)		1,2-Dibromoethane	0.661	0.616	0.650	0.678	0.694	0.582	0.661	6.57
65)	**m	Chlorobenzene	1.637	1.466	1.511	1.545	1.569	1.384	1.550	6.30
66)		1,1,1,2-Tetrachloro	0.665	0.562	0.599	0.628	0.640	0.568	0.619	6.17
67)	*	Ethylbenzene	0.780	0.756	0.780	0.810	0.837	0.707	0.794	5.97
68)		m-xylene & p-xylene	0.985	0.941	0.940	0.981	1.004	0.877	0.971	5.01
69)		O-Xylene	0.862	0.909	0.950	0.996	1.034	0.864	0.956	7.46
70)	**	Bromoform	0.367	0.360	0.385	0.402	0.418	0.345	0.385	7.37
71)		Styrene	1.655	1.520	1.618	1.683	1.742	1.434	1.637	6.74
72)		Isopropylbenzene	2.362	2.266	2.352	2.476	2.541	2.135	2.395	6.11
73)		1,2,3-Trichloroprop	0.944	0.818	0.809	0.848	0.870	0.755	0.858	7.39
74)	**	1,1,2,2-Tetrachloro	0.737	0.640	0.666	0.703	0.703	0.617	0.692	6.78
75)	s	Bromofluorobenzene	0.853	0.849	0.857	0.886	0.872	0.865	0.863	1.34
76)		Bromofluorobenzene	0.853	0.849	0.857	0.886	0.872	0.865	0.863	1.34
77)		T-1,4-dichloro-2-bu	0.259	0.228	0.192	0.206	0.221	0.196	0.224	12.39
78)		N-Propylbenzene	2.800	2.556	2.623	2.801	2.906	2.371	2.719	6.98
79)	i	1,4-Dichlorobenzene-d	----------	ISTD	----------					
80)		Bromobenzene	0.788	0.761	0.785	0.821	0.828	0.747	0.806	5.37
81)		1,3,5-Trimethylbenz	2.515	2.341	2.460	2.526	2.557	2.281	2.482	4.61
82)		2-Chlorotoluene	2.403	2.261	2.181	2.238	2.255	2.056	2.269	5.55
83)		4-Chlorotoluene	2.473	2.270	2.246	2.362	2.415	2.092	2.350	5.88
84)		1,2,4-Trimethylbenz	2.525	2.392	2.483	2.551	2.593	2.293	2.509	4.62
85)		s-Butylbenzene	2.907	2.749	2.892	3.010	3.097	2.638	2.939	6.03
86)		tert-Butylbenzene	2.191	2.112	2.154	2.268	2.339	1.989	2.203	5.45
87)		p-Isopropyltoluene	2.697	2.469	2.550	2.679	2.764	2.349	2.617	5.77
88)		1,3-Dichlorobenzene	1.413	1.271	1.356	1.436	1.502	1.262	1.398	6.81
89)		1,4-Dichlorobenzene	1.568	1.406	1.371	1.446	1.514	1.289	1.454	6.46
90)		1,2-Dichlorobenzene	1.303	1.212	1.299	1.387	1.455	1.177	1.333	7.78
91)		N-Butylbenzene	2.167	2.080	2.162	2.311	2.414	1.993	2.210	7.61
92)		DBCP	0.212	0.154	0.145	0.153	0.167	0.137	0.168	16.48
93)		Naphthalene	1.148	1.132	1.263	1.482	1.762	1.113	1.338	19.92
94)		1,2,4-Trichlorobenz	0.676	0.626	0.683	0.726	0.804	0.605	0.693	10.51
95)		Hexachlorobutadiene	0.281	0.274	0.293	0.327	0.363	0.279	0.306	13.09
96)		1,2,3-Trichlorobenz	0.463	0.516	0.533	0.576	0.643	0.487	0.545	11.74

(#) = Out of Range ### Number of calibration levels exceeded format ###

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☑ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

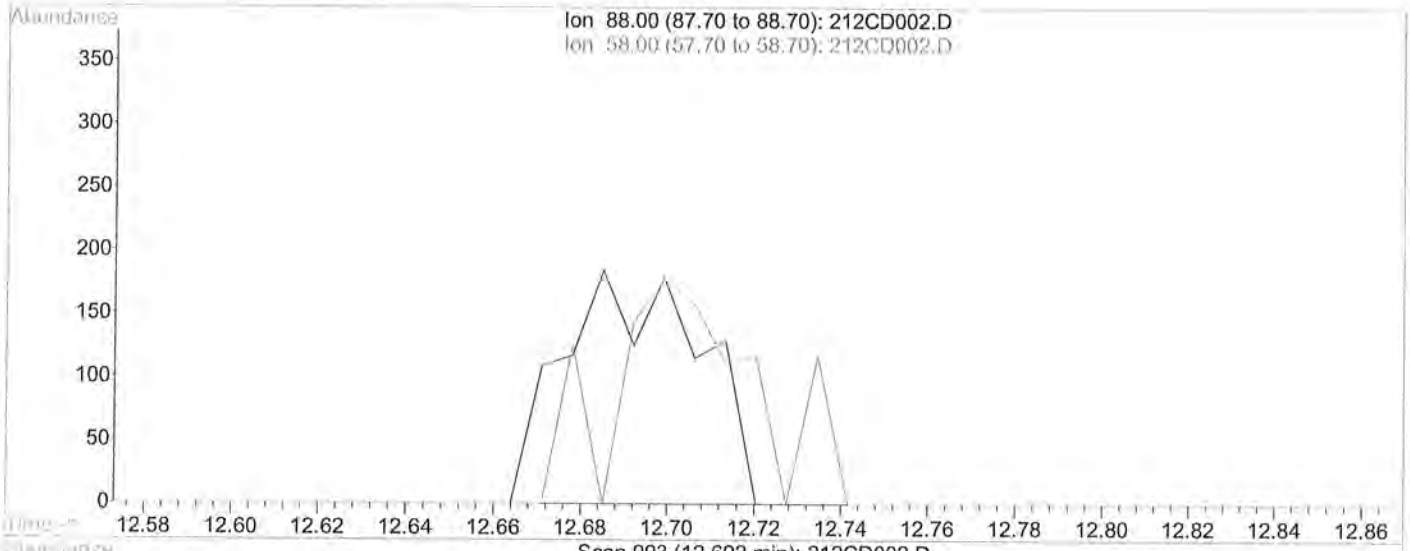
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

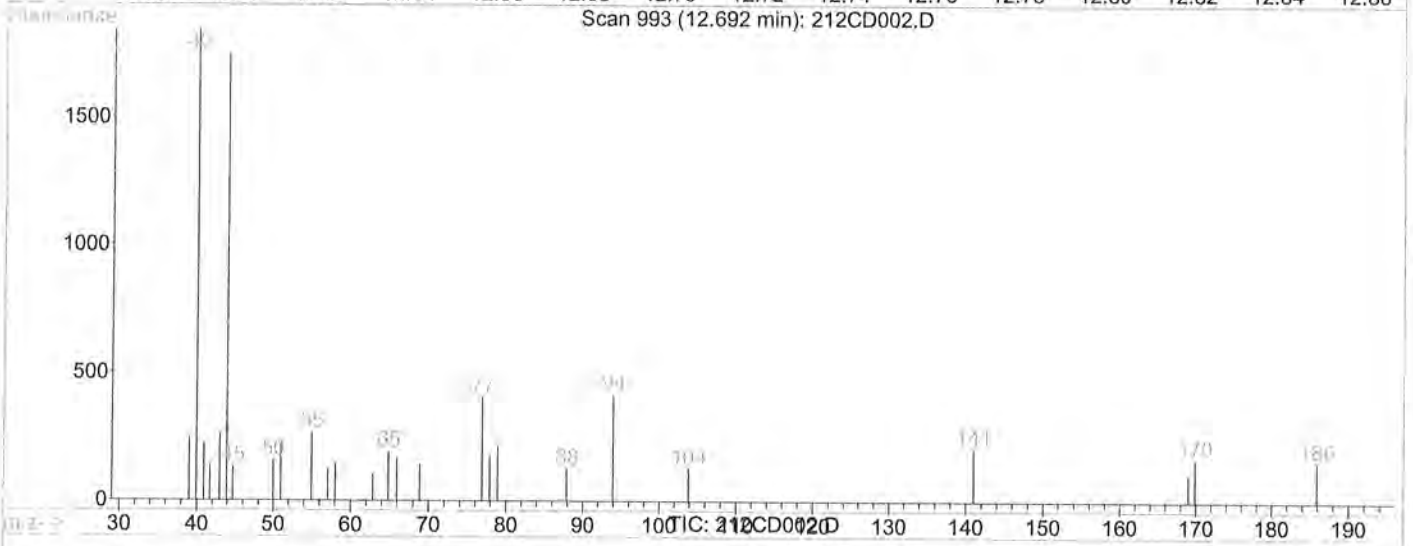
Instrument ID:	ONGCMS2
Sequence/Batch ID:	AA6S289
Data File Prefix:	212CD
Date and Time Range of MIs:	3/9/21 10:03 -10:04 3/10/21 11:48-11:49
Reviewer Print Name:	Kara Watson
Reviewer Signature:	KW 05/10/21
Date of Review:	KW 05/10/21 05/10/21

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:53 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Multiple Level Calibration





(47) 1,4-Dioxane

12.70min 0.00ug/kg

response 0

Ion	Exp%	Act%
88.00	100	0.00
58.00	83.90	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

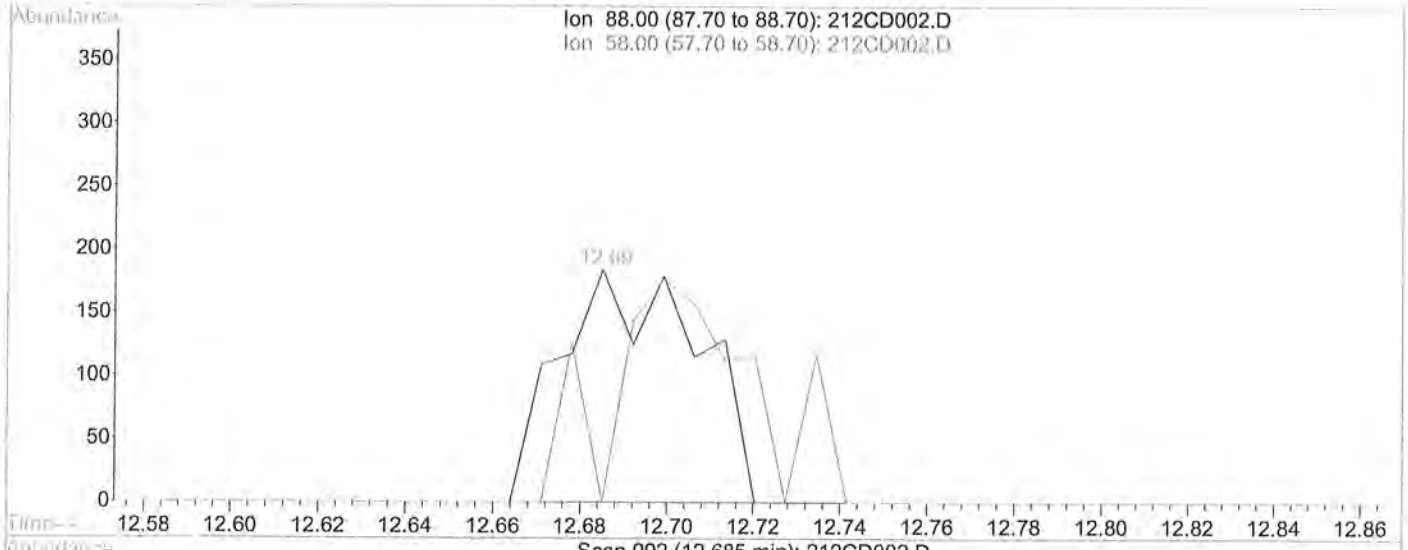
[ ] Other:

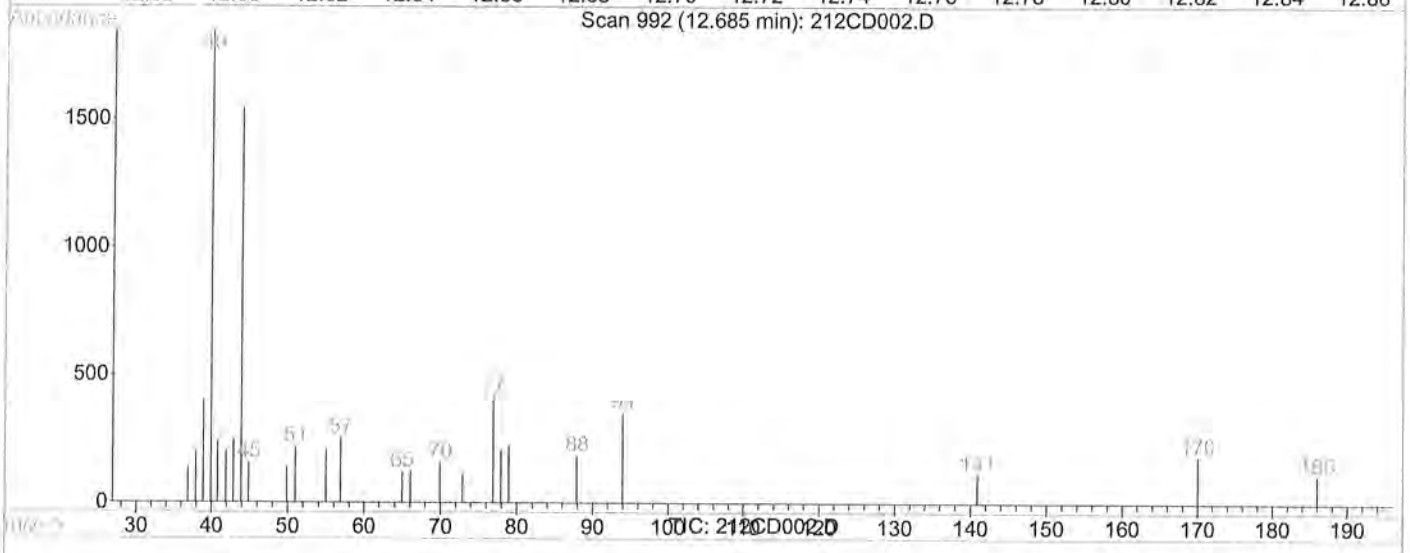
Review by/Date KS 3/10/21

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:03 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Multiple Level Calibration





(47) 1,4-Dioxane

12.69min 39.14ug/kg m

response 406

Ion	Exp%	Act%
88.00	100	100
58.00	83.90	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

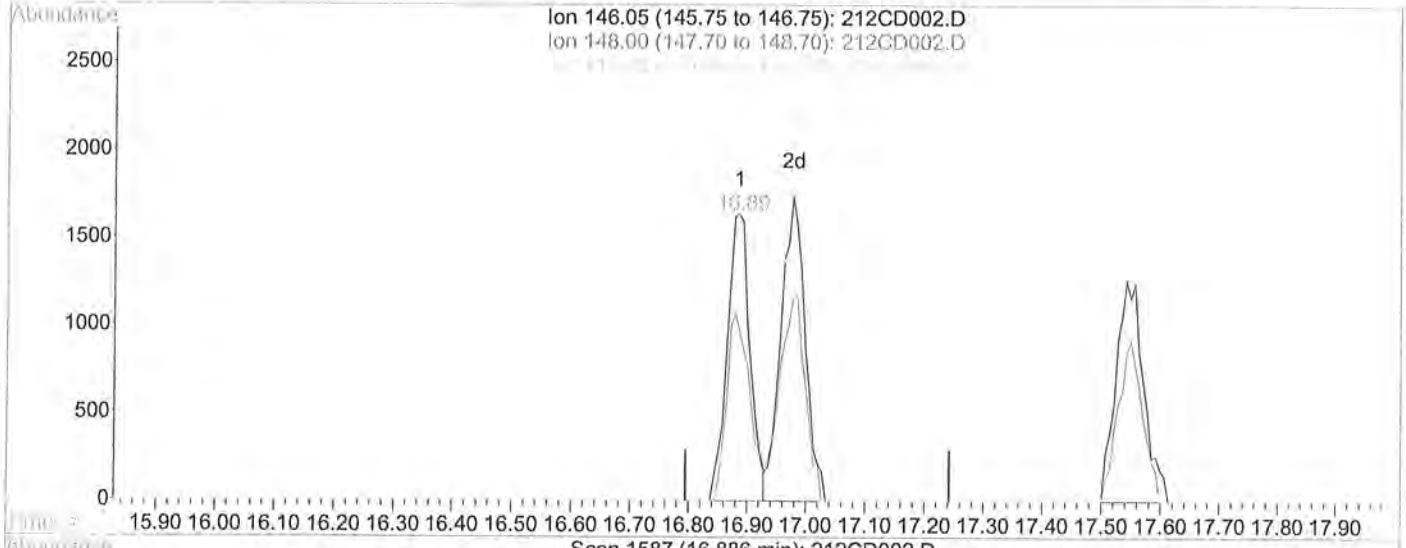
Review by/Date MT 3/10/21

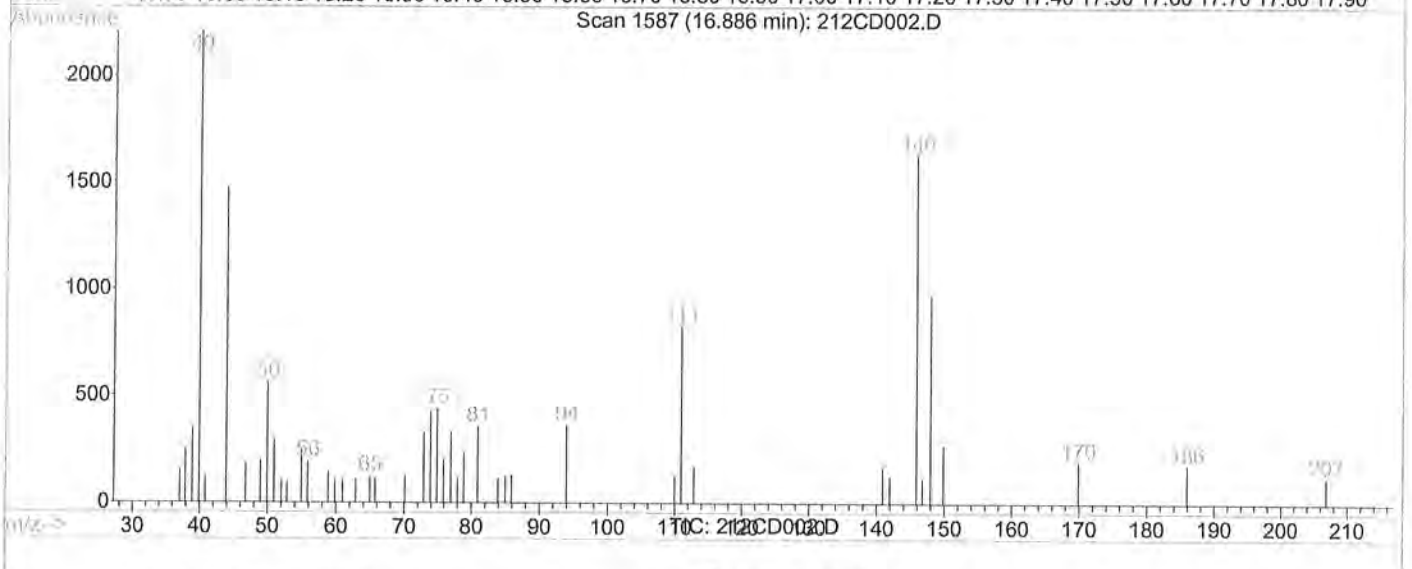
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:03 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Multiple Level Calibration





(89) 1,4-Dichlorobenzene

16.89min 0.95ug/kg

response 4464

Ion	Exp%	Act%
146.05	100	100
148.00	63.90	67.34
111.00	40.00	48.30
0.00	0.00	0.00

Select One:

[✓] Original Integration [ ] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

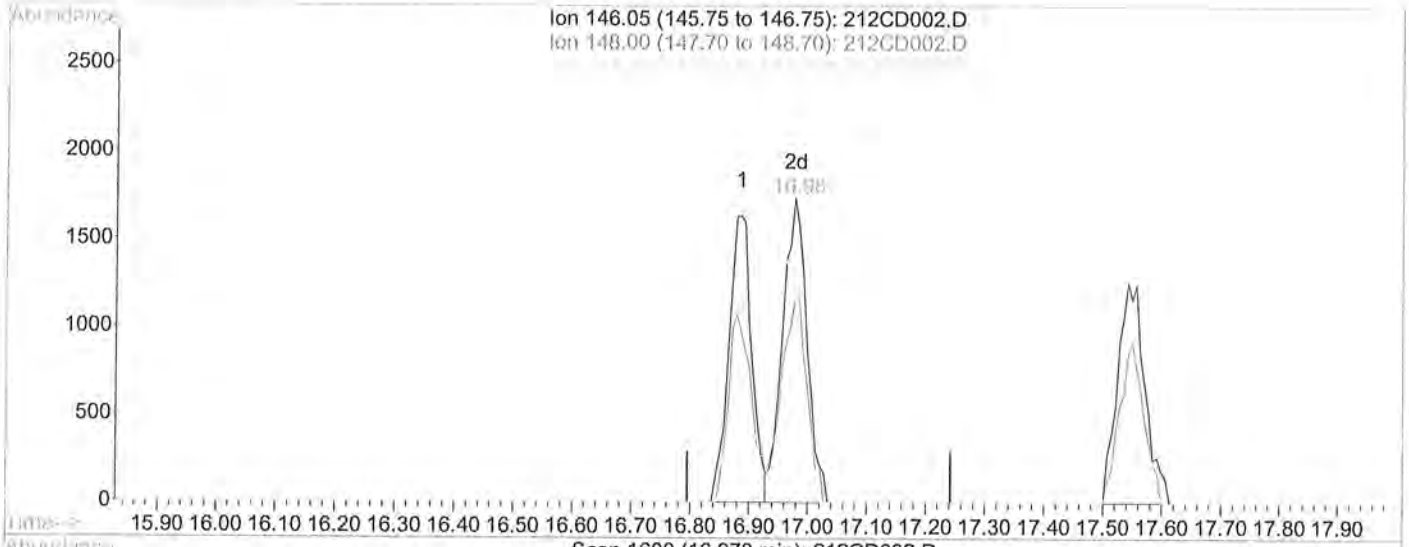
Reviewed by/Date KH 3/10/21

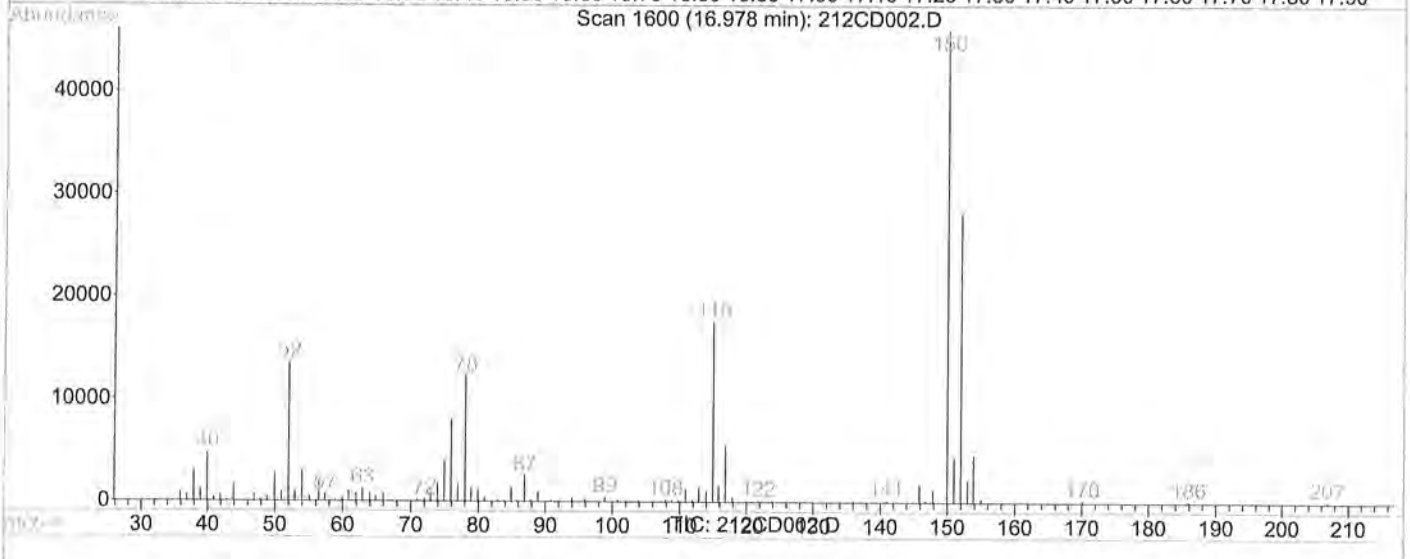
Approved by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:04 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Multiple Level Calibration





(89) 1,4-Dichlorobenzene

16.98min 1.05ug/kg m

response 4953

Ion	Exp%	Act%
146.05	100	100
148.00	63.90	60.69
111.00	40.00	43.53
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

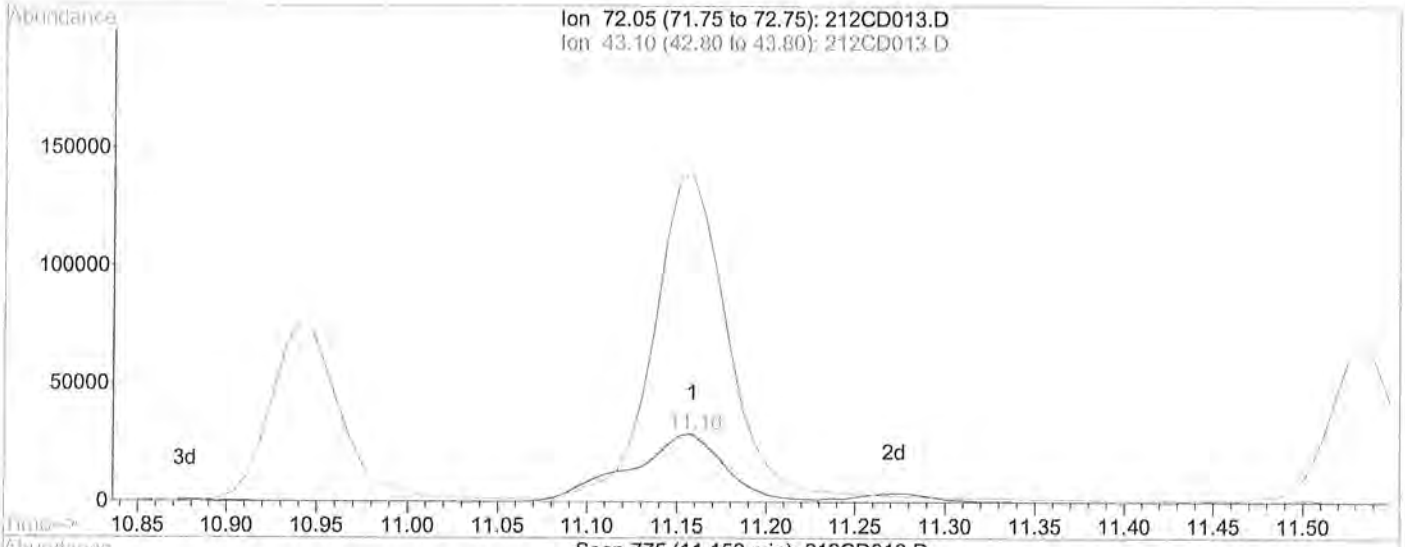
Review by/Date KH 3/10/21

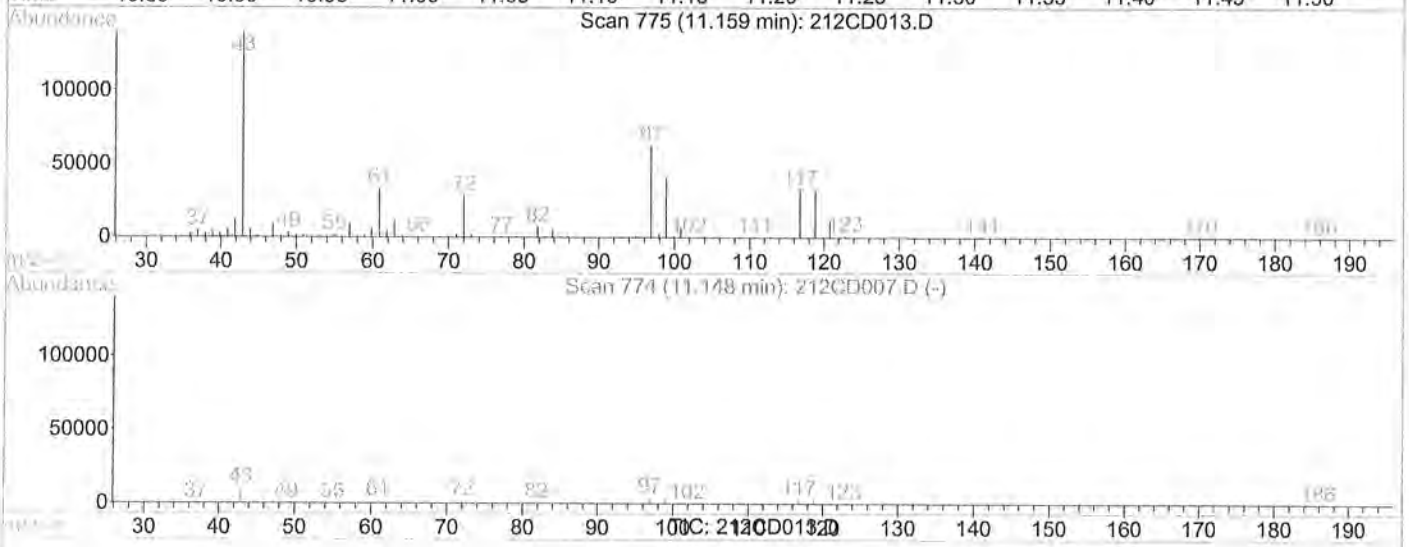
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\030921\212CD013.D Vial: 13
Acq On : 9 Mar 2021 2:04 pm Operator: KG
Sample : AA65289-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 11:40 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Multiple Level Calibration





(25) 2-Butanone

11.16min 362.68ug/kg

response 106558

Ion	Exp%	Act%
72.05	100	100
43.10	535.50	380.24
57.00	36.00	24.20#
0.00	0.00	0.00

Select One:

[✓] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

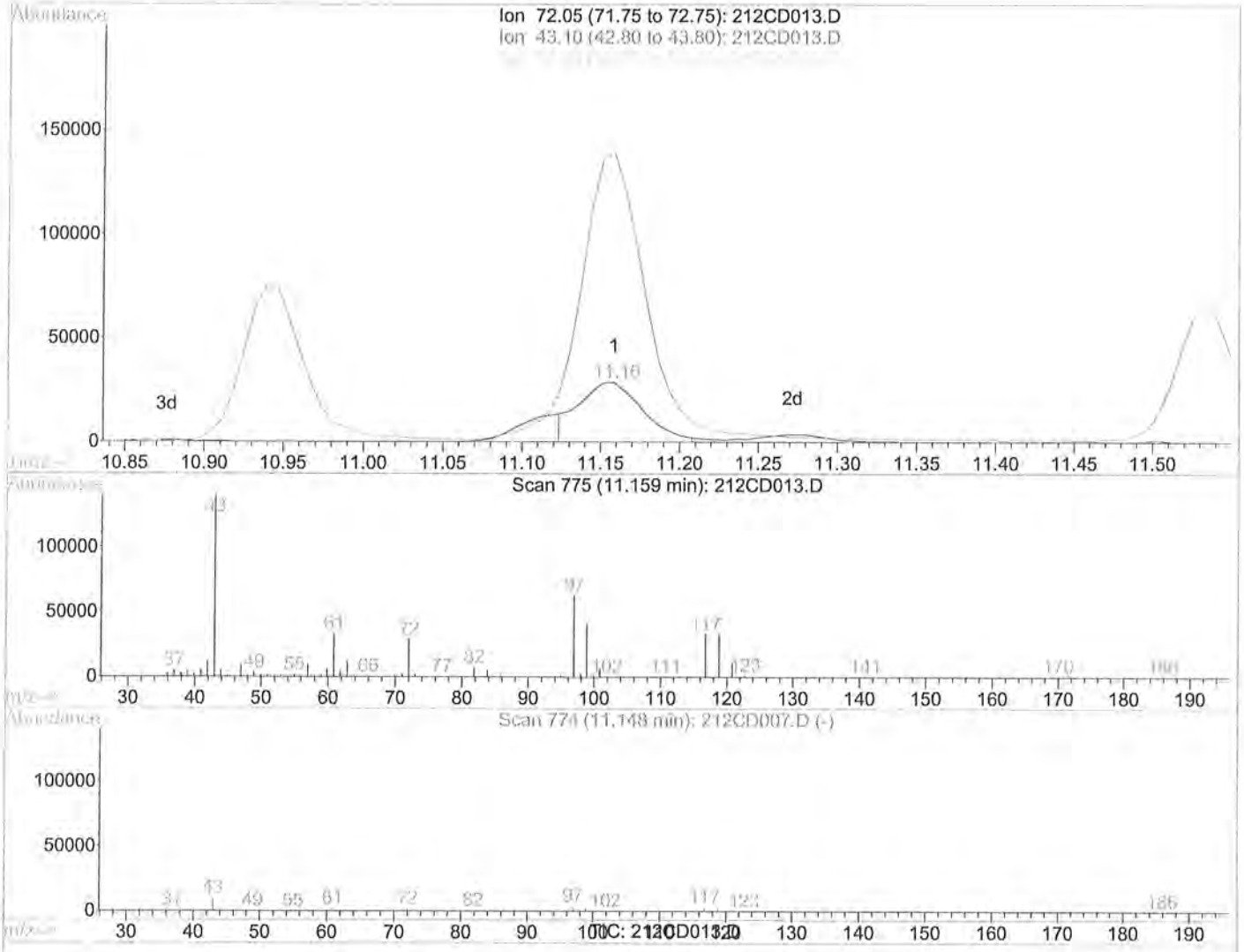
Review by/Date KH 3/10/21

Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\030921\212CD013.D Vial: 13
Acq On : 9 Mar 2021 2:04 pm Operator: KG
Sample : AA65289-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 11:48 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Multiple Level Calibration



(25) 2-Butanone

11.16min 271.47ug/kg m

response 79759

Ion	Exp%	Act%
72.05	100	100
43.10	535.50	508.01
57.00	36.00	32.33
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date KH 3/10/21

Review by/Date:

Quantitation Report (Not Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD001.D Vial: 1
Acq On : 9 Mar 2021 7:55 am Operator: KG
Sample : AA65289-TUN1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:17 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.45	168	226215	50.00	ug/kg	-0.02
38) 1,4-Difluorobenzene(IS)	12.00	114	425525	50.00	ug/kg	-0.02
56) Chlorobenzene-d5(IS)	14.60	82	225186	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.96	152	168003	50.00	ug/kg	-0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	139067	59.52	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 119.04%			
54) D8-Toluene	13.22	98	422902	56.30	ug/kg	-0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 112.60%			
75) Bromofluorobenzene	15.71	95	187125	57.47	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 114.94%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.		
3) Chloromethane	6.36	50	1900	0.42	ug/kg#	50
4) Vinyl Chloride	0.00	62	0	N.D.		
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	7.39	64	735	0.36	ug/kg#	45
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	9.24	43	2534	5.07	ug/kg#	46
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	9.64	41	610	2.74	ug/kg#	1
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	8.60	76	9521	1.05	ug/kg#	75
16) Methylene Chloride	9.19	84	4950	1.83	ug/kg	98
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	9.76	45	620	0.05	ug/kg#	60
21) C-1,2-Dichloroethene	0.00	96	0	N.D.		
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	11.12	72	1398	7.96	ug/kg#	1
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	11.45	67	757	0.93	ug/kg#	22
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.05	113	139067	59.52	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	12.00	55	1949	0.56	ug/kg#	1
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	11.51	78	4954	0.48	ug/kg#	61
43) Isobutyl Alcohol	11.45	43	663	3.51	ug/kg#	1
44) Trichloroethene	0.00	130	0	N.D.		
45) 1,2-Dichloropropane	12.27	63	824	0.26	ug/kg#	40
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	13.41	100	1243	5.08	ug/kg#	1
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	14.02	43	634	0.47	ug/kg#	40

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD001.D Vial: 1
Acq On : 9 Mar 2021 7:55 am Operator: KG
Sample : AA65289-TUN1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:17 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

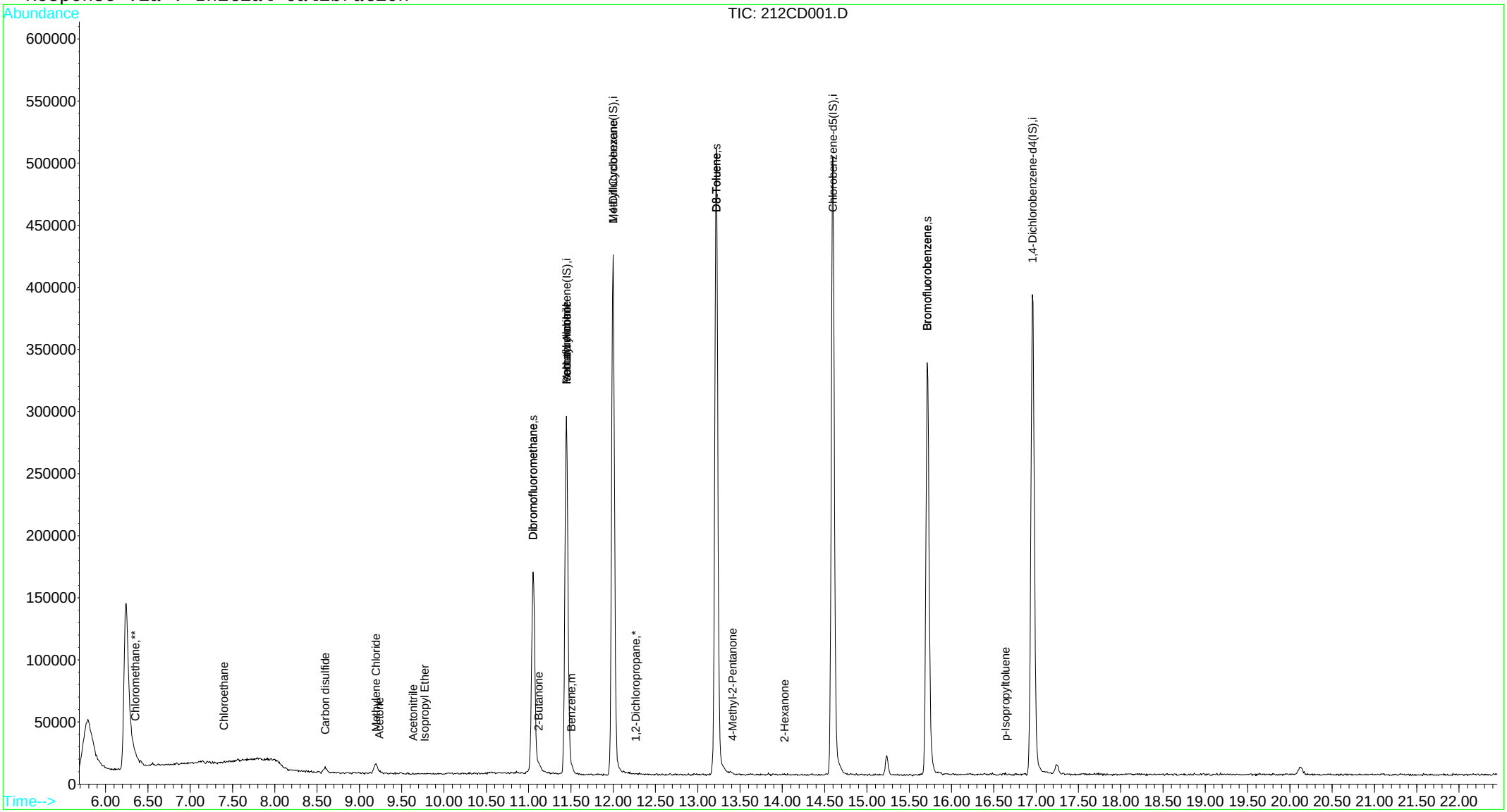
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.22	98	422902	56.30 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.71	95	187125	57.47 ug/kg#	78
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.	
85) s-Butylbenzene	0.00	105	0	N.D.	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.64	119	665	0.07 ug/kg#	51
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD001.D Vial: 1
Acq On : 9 Mar 2021 7:55 am Operator: KG
Sample : AA65289-TUN1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:17 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:04 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	258684	50.00	ug/kg	-0.02
38) 1,4-Difluorobenzene(IS)	12.00	114	456563	50.00	ug/kg	-0.02
56) Chlorobenzene-d5(IS)	14.59	82	220295	50.00	ug/kg	-0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.96	152	157950	50.00	ug/kg	-0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	141980	53.14	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 106.28%			
54) D8-Toluene	13.21	98	426708	52.95	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 105.90%			
75) Bromofluorobenzene	15.71	95	188020	59.02	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 118.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	4982	0.93	ug/kg#	90
3) Chloromethane	6.35	50	6304	1.21	ug/kg	76
4) Vinyl Chloride	6.55	62	4052	0.86	ug/kg#	1
5) Bromomethane	7.21	96	2512	1.49	ug/kg	82
6) Chloroethane	7.43	64	2734	1.19	ug/kg	93
7) Trichlorofluoromethane	7.69	101	3917	0.83	ug/kg	88
8) Trichlorotrifluoroethane	8.51	101	2636	0.97	ug/kg	95
9) acrolein	8.89	56	8281	19.26	ug/kg	98
10) Acetone	9.23	43	7413	12.97	ug/kg	81
11) 1,1-Dichloroethene	8.48	96	2614	0.96	ug/kg	98
12) 3-Chloropropene	9.08	76	2061	1.08	ug/kg	91
13) Acetonitrile	9.89	41	3248	12.74	ug/kg	54
14) Iodomethane	8.70	142	7988	2.64	ug/kg	95
15) Carbon disulfide	8.59	76	41507	4.00	ug/kg	99
16) Methylene Chloride	9.19	84	3784	1.22	ug/kg	93
17) Methyl tert-butyl ether	9.52	73	8755	1.29	ug/kg	83
18) Acrylonitrile	10.12	53	18345	13.25	ug/kg#	71
19) T-1,2-Dichloroethene	9.43	96	2871	0.94	ug/kg	96
20) Isopropyl Ether	9.89	45	15506	1.12	ug/kg	95
21) C-1,2-Dichloroethene	10.65	96	2841	0.86	ug/kg	93
22) 1,1-Dichloroethane	10.10	63	6626	1.12	ug/kg#	86
23) Vinyl Acetate	10.29	43	53961	7.24	ug/kg	97
24) Chloroprene	10.09	88	2266	0.81	ug/kg	1
25) 2-Butanone	11.16	72	1982	9.87	ug/kg	90
26) Propionitrile	11.44	54	5113	18.28	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	4810	1.01	ug/kg	58
28) Methacrylonitrile	11.48	67	15254	16.42	ug/kg	96
29) Chloroform	10.87	83	5460	0.97	ug/kg	90
31) Dibromofluoromethane	11.05	113	141980	53.14	ug/kg	100
32) Bromochloromethane	10.86	128	1973	1.25	ug/kg	83
33) 1,1,1-Trichloroethane	11.17	97	4246	1.01	ug/kg	96
34) 1,1-Dichloropropene	11.27	75	4098	0.94	ug/kg	70
35) Diethyl Ether	8.11	59	3233	1.26	ug/kg	97
36) Methyl Acetate	9.37	74	655	1.81	ug/kg#	69
37) Cyclohexane	10.94	56	5028	1.01	ug/kg	95
39) Methyl Cyclohexane	12.06	55	3823	1.03	ug/kg	86
40) Carbon Tetrachloride	11.12	117	4286	1.04	ug/kg	96
41) 1,2-Dichloroethane	11.65	62	4526	1.17	ug/kg#	82
42) Benzene	11.51	78	14374	1.29	ug/kg	82
43) Isobutyl Alcohol	11.53	43	5603	27.67	ug/kg#	67
44) Trichloroethene	12.02	130	2884	0.96	ug/kg#	1
45) 1,2-Dichloropropane	12.47	63	4250	1.24	ug/kg	94
46) Methyl Methacrylate	12.55	100	751	1.26	ug/kg	59
47) 1,4-Dioxane	12.69	88	406m	39.14	ug/kg	
48) Bromodichloromethane	12.49	83	4185	1.01	ug/kg#	90
49) Dibromomethane	12.40	93	2058	1.18	ug/kg	92
50) 4-Methyl-2-Pentanone	13.50	100	2796	10.65	ug/kg	66
51) 2-Chloroethyl vinyl ether	12.91	63	3248	31.06	ug/kg#	100
52) 2-Hexanone	14.21	43	12397	8.50	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:04 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

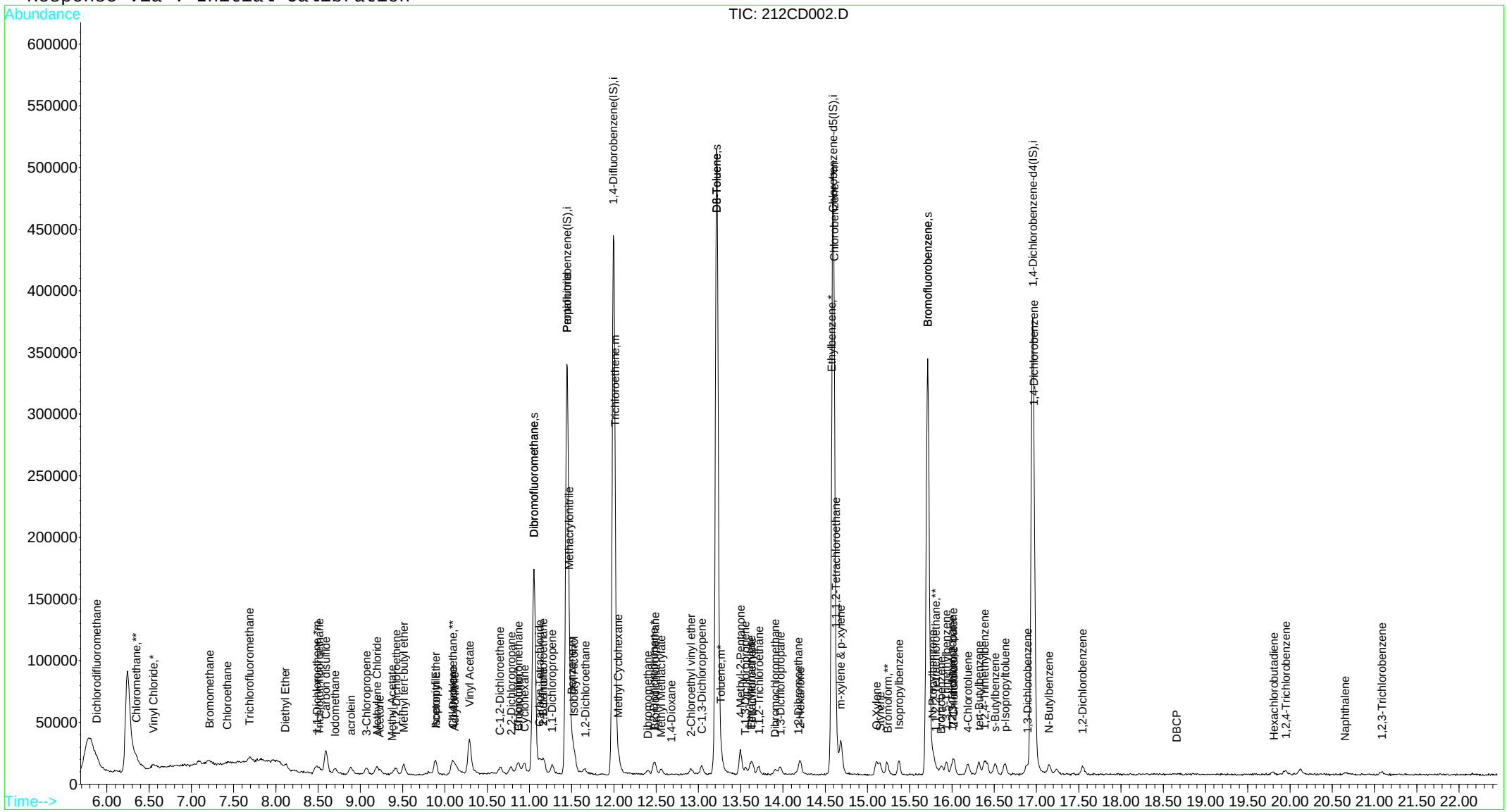
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.04	75	5522	1.00	ug/kg	96
55) D8-Toluene	13.21	98	426708	52.95	ug/kg	93
57) Toluene	13.27	92	6181	0.97	ug/kg	97
58) Ethyl Methacrylate	13.62	69	4803	1.55	ug/kg#	79
59) T-1,3-Dichloropropene	13.56	75	4285	1.04	ug/kg	92
60) 1,1,2-Trichloroethane	13.71	97	2481	1.20	ug/kg	98
61) 1,3-Dichloropropane	13.96	76	5400	1.27	ug/kg	97
62) Tetrachloroethene	13.64	164	1759	0.92	ug/kg#	77
63) Dibromochloromethane	13.91	129	2995	1.05	ug/kg#	85
64) 1,2-Dibromoethane	14.17	107	2911	1.35	ug/kg#	99
65) Chlorobenzene	14.61	112	7212	1.04	ug/kg#	51
66) 1,1,1,2-Tetrachloroethane	14.63	131	2929	1.09	ug/kg#	1
67) Ethylbenzene	14.57	106	3437	0.96	ug/kg	91
68) m-xylene & p-xylene	14.68	106	8684	2.04	ug/kg	97
69) O-Xylene	15.10	106	3800	0.87	ug/kg	88
70) Bromoform	15.25	173	1615	1.19	ug/kg#	97
71) Styrene	15.14	104	7293	1.01	ug/kg	91
72) Isopropylbenzene	15.37	105	10406	0.97	ug/kg	99
73) 1,2,3-Trichloropropane	16.00	75	4161	1.64	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.81	83	3249	1.53	ug/kg#	93
76) Bromofluorobenzene	15.71	95	188020	59.02	ug/kg#	77
77) T-1,4-dichloro-2-butene	16.00	53	1141	2.00	ug/kg#	66
78) N-Propylbenzene	15.78	91	12338	1.01	ug/kg	100
80) Bromobenzene	15.88	156	2489	0.93	ug/kg	90
81) 1,3,5-Trimethylbenzene	15.94	105	7944	0.96	ug/kg	99
82) 2-Chlorotoluene	16.02	91	7592	1.01	ug/kg	98
83) 4-Chlorotoluene	16.18	91	7812	0.99	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.38	105	7977	0.95	ug/kg	100
85) s-Butylbenzene	16.51	105	9183	0.91	ug/kg	98
86) tert-Butylbenzene	16.32	119	6921	0.96	ug/kg	92
87) p-Isopropyltoluene	16.63	119	8520	0.97	ug/kg	99
88) 1,3-Dichlorobenzene	16.89	146	4464	0.95	ug/kg	92
89) 1,4-Dichlorobenzene	16.98	146	4953m	1.05	ug/kg	
90) 1,2-Dichlorobenzene	17.54	146	4117	1.02	ug/kg	98
91) N-Butylbenzene	17.15	91	6844	0.91	ug/kg	93
92) DBCP	18.66	75	671	2.47	ug/kg#	1
93) Naphthalene	20.66	128	3626	2.05	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.95	180	2134	1.23	ug/kg	100
95) Hexachlorobutadiene	19.81	225	888	0.86	ug/kg#	19
96) 1,2,3-Trichlorobenzene	21.09	180	1463	1.30	ug/kg#	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD002.D Vial: 2
Acq On : 9 Mar 2021 8:30 am Operator: KG
Sample : AA65289-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:04 2021 Quant Results File: 020421.RES

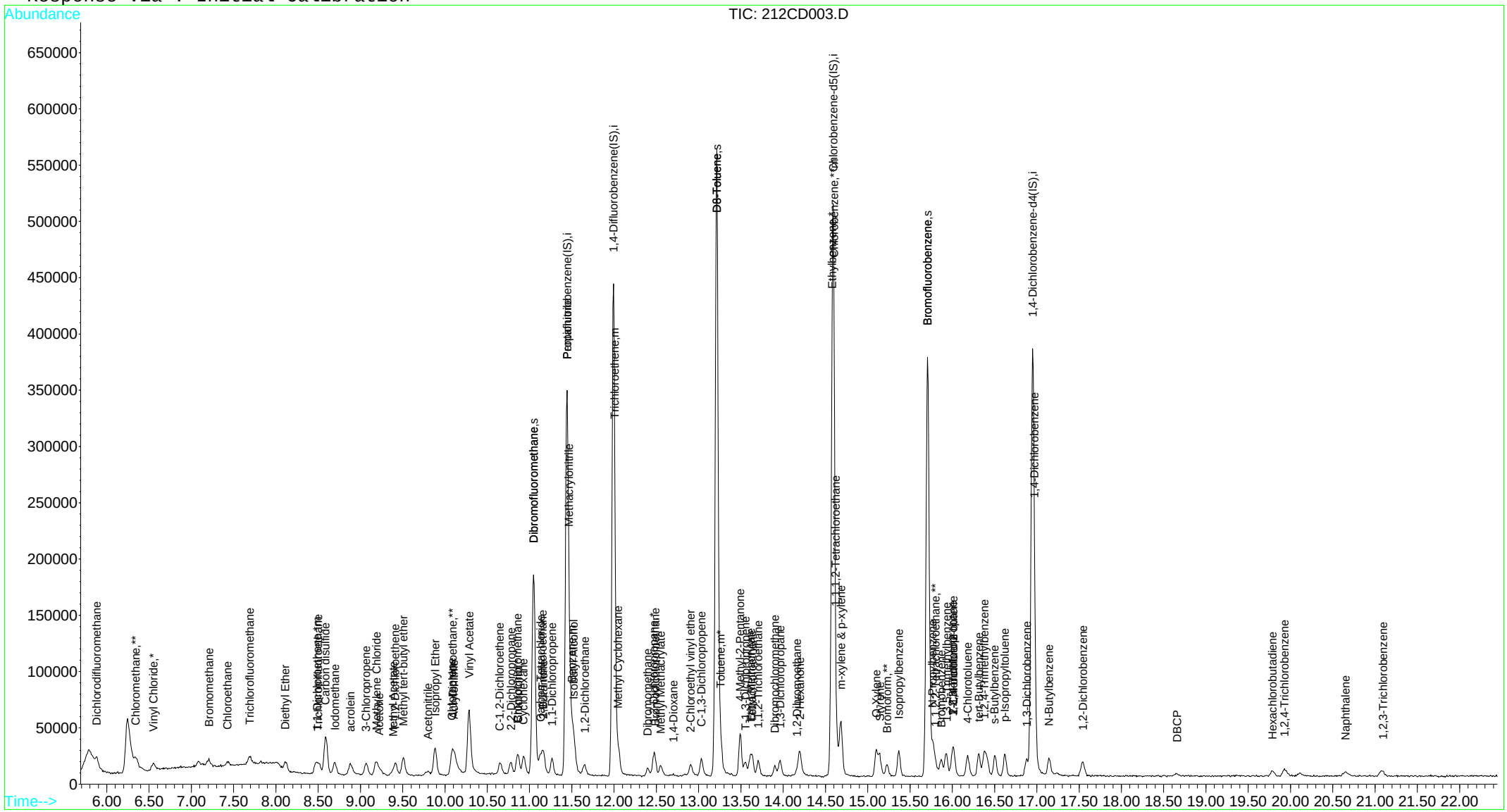
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD003.D Vial: 3
Acq On : 9 Mar 2021 8:59 am Operator: KG
Sample : AA65289-CAL2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 9:21 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD003.D Vial: 3
Acq On : 9 Mar 2021 8:59 am Operator: KG
Sample : AA65289-CAL2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 9:21 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	252984	50.00	ug/kg	-0.02
38) 1,4-Difluorobenzene(IS)	11.99	114	447138	50.00	ug/kg	-0.02
56) Chlorobenzene-d5(IS)	14.59	82	219862	50.00	ug/kg	-0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	160130	50.00	ug/kg	-0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	156083	59.73	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 119.46%			
54) D8-Toluene	13.22	98	465547	58.99	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 117.98%			
75) Bromofluorobenzene	15.71	95	207276	65.20	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 130.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.89	85	10131	1.94	ug/kg	83
3) Chloromethane	6.35	50	11803	2.33	ug/kg	95
4) Vinyl Chloride	6.55	62	8410	1.82	ug/kg	59
5) Bromomethane	7.21	96	5310	3.22	ug/kg	94
6) Chloroethane	7.42	64	4793	2.13	ug/kg	78
7) Trichlorofluoromethane	7.69	101	7774	1.68	ug/kg	95
8) Trichlorotrifluoroethane	8.51	101	5301	1.99	ug/kg	100
9) acrolein	8.88	56	15280	36.34	ug/kg	90
10) Acetone	9.23	43	12248	21.92	ug/kg	88
11) 1,1-Dichloroethene	8.48	96	5127	1.92	ug/kg	96
12) 3-Chloropropene	9.07	76	3383	1.82	ug/kg	95
13) Acetonitrile	9.80	41	7495	30.07	ug/kg	88
14) Iodomethane	8.70	142	17478	5.90	ug/kg	98
15) Carbon disulfide	8.59	76	74787	7.37	ug/kg	100
16) Methylene Chloride	9.19	84	6719	2.22	ug/kg	88
17) Methyl tert-butyl ether	9.51	73	17644	2.66	ug/kg	96
18) Acrylonitrile	10.11	53	34029	25.13	ug/kg	91
19) T-1,2-Dichloroethene	9.42	96	5612	1.87	ug/kg	96
20) Isopropyl Ether	9.88	45	29745	2.20	ug/kg	98
21) C-1,2-Dichloroethene	10.65	96	5963	1.84	ug/kg	96
22) 1,1-Dichloroethane	10.09	63	12327	2.12	ug/kg#	68
23) Vinyl Acetate	10.29	43	101871	13.97	ug/kg	98
24) Chloroprene	10.07	88	4941	1.80	ug/kg	28
25) 2-Butanone	11.17	72	4663	23.74	ug/kg	65
26) Propionitrile	11.44	54	9751	35.66	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	8523	1.82	ug/kg	98
28) Methacrylonitrile	11.47	67	29107	32.04	ug/kg	96
29) Chloroform	10.87	83	11472	2.09	ug/kg	95
31) Dibromofluoromethane	11.05	113	156083	59.73	ug/kg	100
32) Bromochloromethane	10.85	128	3692	2.39	ug/kg	87
33) 1,1,1-Trichloroethane	11.16	97	8633	2.10	ug/kg	96
34) 1,1-Dichloropropene	11.27	75	8643	2.02	ug/kg	98
35) Diethyl Ether	8.11	59	6393	2.55	ug/kg	95
36) Methyl Acetate	9.38	74	1373	3.88	ug/kg#	85
37) Cyclohexane	10.93	56	9983	2.06	ug/kg	97
39) Methyl Cyclohexane	12.05	55	6957	1.92	ug/kg	98
40) Carbon Tetrachloride	11.13	117	8627	2.13	ug/kg	98
41) 1,2-Dichloroethane	11.66	62	9736	2.57	ug/kg	92
42) Benzene	11.51	78	25037	2.30	ug/kg	80
43) Isobutyl Alcohol	11.53	43	11348	57.22	ug/kg#	1
44) Trichloroethene	12.02	130	6020	2.04	ug/kg#	20
45) 1,2-Dichloropropane	12.46	63	7117	2.11	ug/kg	97
46) Methyl Methacrylate	12.56	100	1831	3.14	ug/kg	96
47) 1,4-Dioxane	12.69	88	1024	100.79	ug/kg	86
48) Bromodichloromethane	12.50	83	7991	1.97	ug/kg	100
49) Dibromomethane	12.40	93	4044	2.37	ug/kg	93
50) 4-Methyl-2-Pentanone	13.49	100	5010	19.48	ug/kg	86
51) 2-Chloroethyl vinyl ether	12.91	63	6013	58.72	ug/kg#	100
52) 2-Hexanone	14.20	43	28059	19.64	ug/kg	94

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD003.D Vial: 3
Acq On : 9 Mar 2021 8:59 am Operator: KG
Sample : AA65289-CAL2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 9:21 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

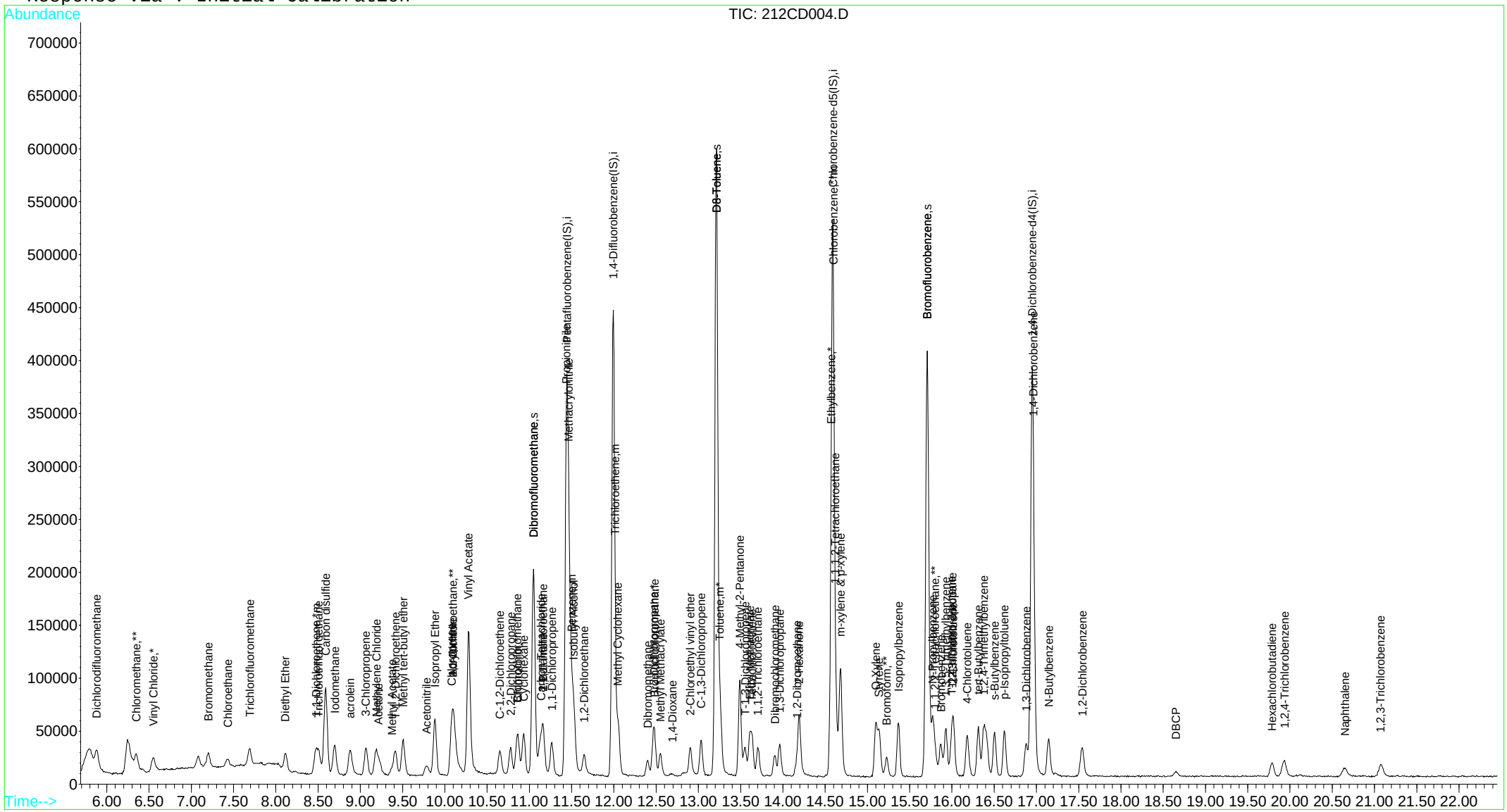
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.03	75	11158	2.06	ug/kg	91
55) D8-Toluene	13.22	98	465547	58.99	ug/kg	93
57) Toluene	13.26	92	12843	2.02	ug/kg	97
58) Ethyl Methacrylate	13.61	69	8903	2.88	ug/kg#	88
59) T-1,3-Dichloropropene	13.55	75	9354	2.27	ug/kg	89
60) 1,1,2-Trichloroethane	13.70	97	5191	2.52	ug/kg	96
61) 1,3-Dichloropropane	13.96	76	11199	2.65	ug/kg	97
62) Tetrachloroethene	13.64	164	3846	2.02	ug/kg	88
63) Dibromochloromethane	13.90	129	6975	2.45	ug/kg#	85
64) 1,2-Dibromoethane	14.15	107	6164	2.87	ug/kg#	94
65) Chlorobenzene	14.61	112	14890	2.16	ug/kg	83
66) 1,1,1,2-Tetrachloroethane	14.63	131	5660	2.11	ug/kg#	1
67) Ethylbenzene	14.57	106	7285	2.04	ug/kg	100
68) m-xylene & p-xylene	14.68	106	17730	4.17	ug/kg	98
69) O-Xylene	15.10	106	8702	2.00	ug/kg	94
70) Bromoform	15.23	173	3315	2.45	ug/kg#	93
71) Styrene	15.14	104	14852	2.05	ug/kg	98
72) Isopropylbenzene	15.37	105	21626	2.01	ug/kg	99
73) 1,2,3-Trichloropropane	16.00	75	8175	3.24	ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.81	83	6600	3.12	ug/kg	99
76) Bromofluorobenzene	15.71	95	207276	65.20	ug/kg#	77
77) T-1,4-dichloro-2-butene	16.00	53	2359	4.14	ug/kg#	65
78) N-Propylbenzene	15.77	91	24284	1.99	ug/kg	99
80) Bromobenzene	15.87	156	5612	2.07	ug/kg	96
81) 1,3,5-Trimethylbenzene	15.93	105	16473	1.97	ug/kg	96
82) 2-Chlorotoluene	16.01	91	15788	2.07	ug/kg	99
83) 4-Chlorotoluene	16.18	91	16035	2.01	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.38	105	16717	1.97	ug/kg	97
85) s-Butylbenzene	16.51	105	19727	1.92	ug/kg	98
86) tert-Butylbenzene	16.31	119	14215	1.94	ug/kg	99
87) p-Isopropyltoluene	16.62	119	16939	1.90	ug/kg	99
88) 1,3-Dichlorobenzene	16.88	146	9192	1.93	ug/kg	98
89) 1,4-Dichlorobenzene	16.98	146	9722	2.03	ug/kg	81
90) 1,2-Dichlorobenzene	17.55	146	8785	2.15	ug/kg	98
91) N-Butylbenzene	17.14	91	13409	1.76	ug/kg	99
92) DBCP	18.67	75	1323	4.79	ug/kg	67
93) Naphthalene	20.66	128	7202	3.97	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.94	180	4109	2.34	ug/kg	94
95) Hexachlorobutadiene	19.80	225	1715	1.63	ug/kg	96
96) 1,2,3-Trichlorobenzene	21.09	180	3325	2.92	ug/kg#	63

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD004.D Vial: 4
Acq On : 9 Mar 2021 9:27 am Operator: KG
Sample : AA65289-CAL3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 9:50 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD004.D Vial: 4
Acq On : 9 Mar 2021 9:27 am Operator: KG
Sample : AA65289-CAL3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 9:50 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	249505	50.00	ug/kg	-0.02
38) 1,4-Difluorobenzene(IS)	11.99	114	443522	50.00	ug/kg	-0.02
56) Chlorobenzene-d5(IS)	14.59	82	215472	50.00	ug/kg	-0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	156777	50.00	ug/kg	-0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	165980	64.40	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 128.80%			
54) D8-Toluene	13.22	98	501622	64.08	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 128.16%			
75) Bromofluorobenzene	15.71	95	219530	70.46	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 140.92%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	22781	4.42	ug/kg	97
3) Chloromethane	6.35	50	25463	5.09	ug/kg	100
4) Vinyl Chloride	6.54	62	19163	4.21	ug/kg	83
5) Bromomethane	7.20	96	11916	7.32	ug/kg	91
6) Chloroethane	7.43	64	10216	4.59	ug/kg	93
7) Trichlorofluoromethane	7.69	101	18886	4.13	ug/kg	96
8) Trichlorotrifluoroethane	8.51	101	12376	4.72	ug/kg	100
9) acrolein	8.88	56	36275	87.49	ug/kg	91
10) Acetone	9.22	43	26181	47.50	ug/kg	93
11) 1,1-Dichloroethene	8.47	96	11153	4.23	ug/kg	93
12) 3-Chloropropene	9.06	76	7119	3.89	ug/kg	87
13) Acetonitrile	9.78	41	18199	74.03	ug/kg	85
14) Iodomethane	8.70	142	46849	15.94	ug/kg	95
15) Carbon disulfide	8.59	76	178996	17.89	ug/kg	100
16) Methylene Chloride	9.18	84	14216	4.76	ug/kg	97
17) Methyl tert-butyl ether	9.51	73	37907	5.79	ug/kg	96
18) Acrylonitrile	10.10	53	88544	66.30	ug/kg	95
19) T-1,2-Dichloroethene	9.42	96	12041	4.07	ug/kg	91
20) Isopropyl Ether	9.88	45	64655	4.85	ug/kg	99
21) C-1,2-Dichloroethene	10.65	96	13336	4.17	ug/kg	97
22) 1,1-Dichloroethane	10.09	63	27088	4.73	ug/kg#	67
23) Vinyl Acetate	10.29	43	235433	32.73	ug/kg	98
24) Chloroprene	10.07	88	11591	4.29	ug/kg	2
25) 2-Butanone	11.15	72	8570	44.25	ug/kg	82
26) Propionitrile	11.43	54	22721	84.24	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	19216	4.17	ug/kg	96
28) Methacrylonitrile	11.47	67	62951	70.27	ug/kg	91
29) Chloroform	10.86	83	24345	4.50	ug/kg	99
31) Dibromofluoromethane	11.05	113	165980	64.40	ug/kg	100
32) Bromochloromethane	10.85	128	7869	5.17	ug/kg	97
33) 1,1,1-Trichloroethane	11.16	97	19276	4.75	ug/kg	100
34) 1,1-Dichloropropene	11.27	75	17929	4.25	ug/kg	95
35) Diethyl Ether	8.11	59	13348	5.41	ug/kg	98
36) Methyl Acetate	9.37	74	2614	7.49	ug/kg	97
37) Cyclohexane	10.93	56	22795	4.76	ug/kg	96
39) Methyl Cyclohexane	12.05	55	20174	5.60	ug/kg#	79
40) Carbon Tetrachloride	11.13	117	19798	4.94	ug/kg	99
41) 1,2-Dichloroethane	11.65	62	20548	5.47	ug/kg	93
42) Benzene	11.51	78	50954	4.73	ug/kg	75
43) Isobutyl Alcohol	11.53	43	25850	131.41	ug/kg#	71
44) Trichloroethene	12.02	130	13528	4.62	ug/kg#	68
45) 1,2-Dichloropropane	12.47	63	15712	4.70	ug/kg	97
46) Methyl Methacrylate	12.55	100	4292	7.43	ug/kg	98
47) 1,4-Dioxane	12.69	88	2392	237.35	ug/kg	90
48) Bromodichloromethane	12.49	83	17871	4.44	ug/kg	99
49) Dibromomethane	12.40	93	8708	5.15	ug/kg	95
50) 4-Methyl-2-Pentanone	13.49	100	10044	39.37	ug/kg	93
51) 2-Chloroethyl vinyl ether	12.90	63	13725	135.13	ug/kg#	100
52) 2-Hexanone	14.19	43	58967	41.61	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD004.D Vial: 4
Acq On : 9 Mar 2021 9:27 am Operator: KG
Sample : AA65289-CAL3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 9:50 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.03	75	24080	4.49 ug/kg	95
55) D8-Toluene	13.22	98	501622	64.08 ug/kg	93
57) Toluene	13.26	92	28811	4.62 ug/kg	95
58) Ethyl Methacrylate	13.60	69	22271	7.35 ug/kg	98
59) T-1,3-Dichloropropene	13.55	75	20550	5.10 ug/kg	92
60) 1,1,2-Trichloroethane	13.70	97	10863	5.38 ug/kg	98
61) 1,3-Dichloropropane	13.96	76	23264	5.61 ug/kg	97
62) Tetrachloroethene	13.64	164	8546	4.59 ug/kg	93
63) Dibromochloromethane	13.90	129	15550	5.57 ug/kg#	95
64) 1,2-Dibromoethane	14.16	107	13263	6.29 ug/kg#	98
65) Chlorobenzene	14.61	112	31588	4.67 ug/kg	92
66) 1,1,1,2-Tetrachloroethane	14.63	131	12114	4.60 ug/kg#	1
67) Ethylbenzene	14.56	106	16286	4.66 ug/kg	99
68) m-xylene & p-xylene	14.68	106	40560	9.73 ug/kg	97
69) O-Xylene	15.11	106	19597	4.61 ug/kg	99
70) Bromoform	15.23	173	7765	5.84 ug/kg	98
71) Styrene	15.14	104	32752	4.62 ug/kg	99
72) Isopropylbenzene	15.37	105	48831	4.64 ug/kg	99
73) 1,2,3-Trichloropropane	16.00	75	17627	7.12 ug/kg	94
74) 1,1,2,2-Tetrachloroethane	15.81	83	13782	6.66 ug/kg	95
76) Bromofluorobenzene	15.71	95	219530	70.46 ug/kg#	77
77) T-1,4-dichloro-2-butene	15.99	53	4919	8.81 ug/kg#	69
78) N-Propylbenzene	15.77	91	55080	4.60 ug/kg	100
80) Bromobenzene	15.87	156	11929	4.50 ug/kg	95
81) 1,3,5-Trimethylbenzene	15.93	105	36698	4.48 ug/kg	99
82) 2-Chlorotoluene	16.02	91	35449	4.76 ug/kg	99
83) 4-Chlorotoluene	16.18	91	35589	4.56 ug/kg	99
84) 1,2,4-Trimethylbenzene	16.37	105	37494	4.52 ug/kg	99
85) s-Butylbenzene	16.51	105	43105	4.29 ug/kg	99
86) tert-Butylbenzene	16.31	119	33104	4.61 ug/kg	99
87) p-Isopropyltoluene	16.62	119	38707	4.44 ug/kg	98
88) 1,3-Dichlorobenzene	16.88	146	19933	4.27 ug/kg	94
89) 1,4-Dichlorobenzene	16.97	146	22039	4.71 ug/kg	93
90) 1,2-Dichlorobenzene	17.54	146	18997	4.75 ug/kg	95
91) N-Butylbenzene	17.15	91	32604	4.38 ug/kg	96
92) DBCP	18.65	75	2417	8.95 ug/kg	80
93) Naphthalene	20.65	128	17741	9.77 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.94	180	9820	5.71 ug/kg	98
95) Hexachlorobutadiene	19.79	225	4299	4.18 ug/kg	98
96) 1,2,3-Trichlorobenzene	21.08	180	8089	7.24 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD005.D Vial: 5
Acq On : 9 Mar 2021 9:56 am Operator: KG
Sample : AA65289-CAL4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:19 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	244206	50.00	ug/kg	-0.03
38) 1,4-Difluorobenzene(IS)	11.99	114	431789	50.00	ug/kg	-0.03
56) Chlorobenzene-d5(IS)	14.59	82	212013	50.00	ug/kg	-0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	155190	50.00	ug/kg	-0.03
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	134216	53.21	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 106.42%			
54) D8-Toluene	13.21	98	412512	54.12	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 108.24%			
75) Bromofluorobenzene	15.71	95	183300	59.79	ug/kg	-0.03
Spiked Amount 50.000	Range 41 - 142		Recovery = 119.58%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	45673	9.05	ug/kg	97
3) Chloromethane	6.34	50	47720	9.74	ug/kg	98
4) Vinyl Chloride	6.55	62	38092	8.54	ug/kg	86
5) Bromomethane	7.20	96	22904	14.38	ug/kg	95
6) Chloroethane	7.42	64	21050	9.67	ug/kg	95
7) Trichlorofluoromethane	7.69	101	37771	8.45	ug/kg	98
8) Trichlorotrifluoroethane	8.51	101	24186	9.43	ug/kg	96
9) acrolein	8.88	56	63752	157.09	ug/kg	98
10) Acetone	9.23	43	42701	79.16	ug/kg	94
11) 1,1-Dichloroethene	8.47	96	20796	8.05	ug/kg	96
12) 3-Chloropropene	9.07	76	13773	7.68	ug/kg	90
13) Acetonitrile	9.78	41	36059	149.87	ug/kg	98
14) Iodomethane	8.69	142	112166	38.54	ug/kg	95
15) Carbon disulfide	8.59	76	411444	42.01	ug/kg	99
16) Methylene Chloride	9.19	84	30762	10.53	ug/kg	97
17) Methyl tert-butyl ether	9.51	73	70893	11.06	ug/kg	98
18) Acrylonitrile	10.10	53	158967	121.62	ug/kg	95
19) T-1,2-Dichloroethene	9.41	96	22474	7.75	ug/kg	96
20) Isopropyl Ether	9.88	45	119716	9.18	ug/kg	97
21) C-1,2-Dichloroethene	10.65	96	24555	7.85	ug/kg	98
22) 1,1-Dichloroethane	10.09	63	48336	8.62	ug/kg	100
23) Vinyl Acetate	10.28	43	413370	58.71	ug/kg	99
24) Chloroprene	10.08	88	21601	8.17	ug/kg	12
25) 2-Butanone	11.16	72	13474	71.08	ug/kg	95
26) Propionitrile	11.43	54	38758	146.82	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	37406	8.29	ug/kg	99
28) Methacrylonitrile	11.47	67	112006	127.74	ug/kg	94
29) Chloroform	10.87	83	44875	8.47	ug/kg	97
31) Dibromofluoromethane	11.05	113	134216	53.21	ug/kg	100
32) Bromochloromethane	10.86	128	14842	9.96	ug/kg	87
33) 1,1,1-Trichloroethane	11.17	97	35445	8.92	ug/kg	98
34) 1,1-Dichloropropene	11.26	75	34737	8.42	ug/kg	100
35) Diethyl Ether	8.11	59	24581	10.17	ug/kg	98
36) Methyl Acetate	9.38	74	4779	13.99	ug/kg#	93
37) Cyclohexane	10.93	56	42044	8.98	ug/kg	99
39) Methyl Cyclohexane	12.06	55	32036	9.13	ug/kg	92
40) Carbon Tetrachloride	11.12	117	37080	9.50	ug/kg	96
41) 1,2-Dichloroethane	11.65	62	37309	10.20	ug/kg	99
42) Benzene	11.50	78	88429	8.42	ug/kg	74
43) Isobutyl Alcohol	11.53	43	45468	237.41	ug/kg#	74
44) Trichloroethene	12.02	130	25064	8.79	ug/kg#	85
45) 1,2-Dichloropropane	12.46	63	27759	8.53	ug/kg	98
46) Methyl Methacrylate	12.54	100	7365	13.09	ug/kg	91
47) 1,4-Dioxane	12.68	88	4189	426.96	ug/kg	96
48) Bromodichloromethane	12.49	83	33416	8.53	ug/kg	100
49) Dibromomethane	12.40	93	16470	10.00	ug/kg	97
50) 4-Methyl-2-Pentanone	13.49	100	17923	72.17	ug/kg	98
51) 2-Chloroethyl vinyl ether	12.90	63	26905	272.09	ug/kg#	100
52) 2-Hexanone	14.19	43	108291	78.50	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD005.D Vial: 5
Acq On : 9 Mar 2021 9:56 am Operator: KG
Sample : AA65289-CAL4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:19 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

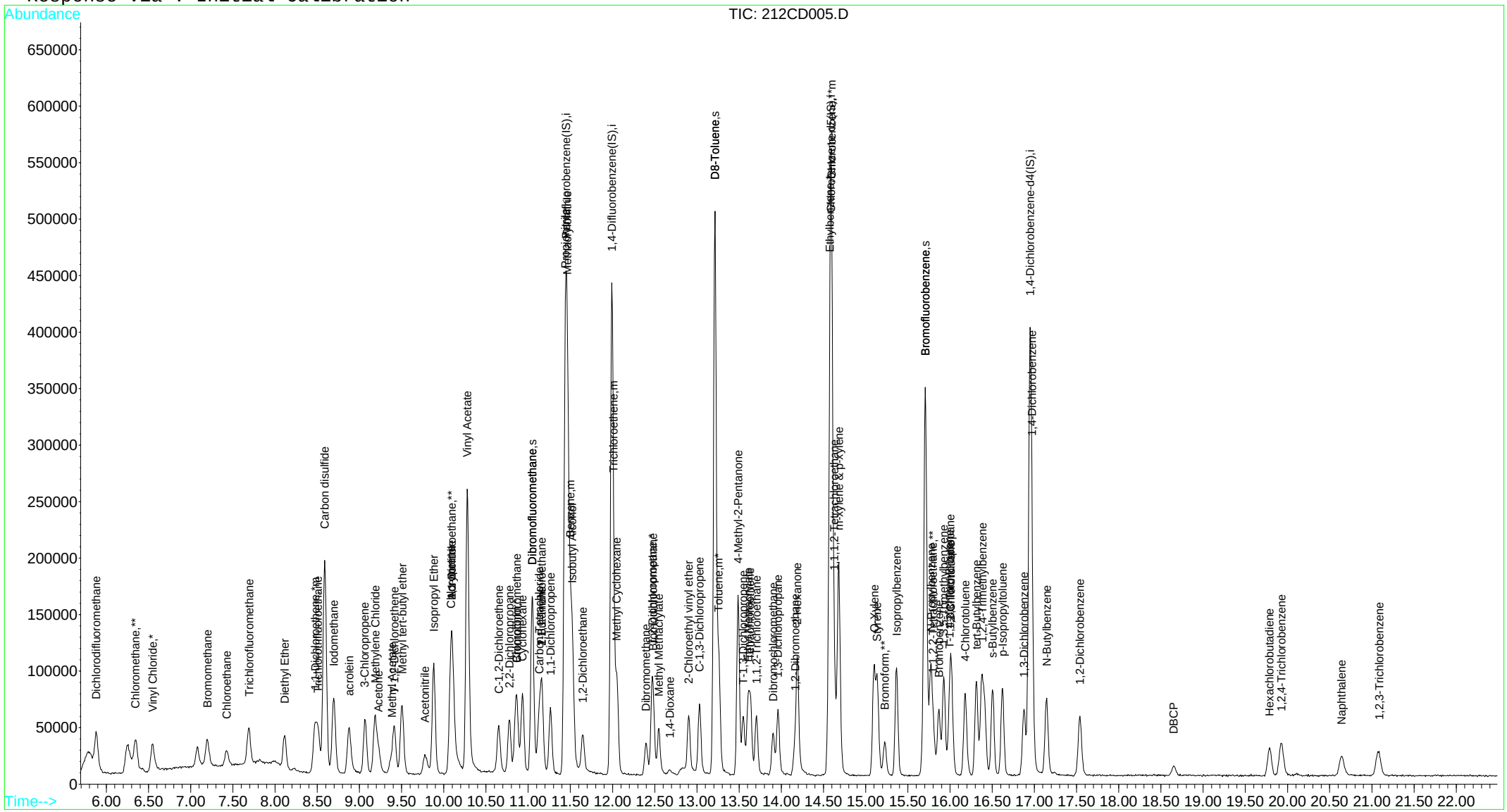
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.03	75	45237	8.66	ug/kg	98
55) D8-Toluene	13.21	98	412512	54.12	ug/kg	94
57) Toluene	13.26	92	51736	8.43	ug/kg	95
58) Ethyl Methacrylate	13.60	69	37443	12.56	ug/kg#	94
59) T-1,3-Dichloropropene	13.55	75	37814	9.54	ug/kg	98
60) 1,1,2-Trichloroethane	13.71	97	20842	10.49	ug/kg	99
61) 1,3-Dichloropropane	13.96	76	42653	10.45	ug/kg	99
62) Tetrachloroethene	13.64	164	16686	9.10	ug/kg	94
63) Dibromochloromethane	13.91	129	27027	9.84	ug/kg#	95
64) 1,2-Dibromoethane	14.16	107	24685	11.91	ug/kg	100
65) Chlorobenzene	14.60	112	58672	8.82	ug/kg	97
66) 1,1,1,2-Tetrachloroethane	14.63	131	24102	9.31	ug/kg#	1
67) Ethylbenzene	14.57	106	29990	8.72	ug/kg	98
68) m-xylene & p-xylene	14.68	106	74402	18.15	ug/kg	99
69) O-Xylene	15.10	106	36638	8.75	ug/kg	98
70) Bromoform	15.23	173	14632	11.19	ug/kg	98
71) Styrene	15.14	104	60801	8.71	ug/kg	98
72) Isopropylbenzene	15.37	105	90545	8.75	ug/kg	99
73) 1,2,3-Trichloropropane	15.99	75	32025	13.14	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.80	83	26183	12.85	ug/kg	99
76) Bromofluorobenzene	15.71	95	183300	59.79	ug/kg#	76
77) T-1,4-dichloro-2-butene	15.99	53	8296	15.10	ug/kg#	80
78) N-Propylbenzene	15.77	91	100518	8.54	ug/kg	99
80) Bromobenzene	15.87	156	23186	8.84	ug/kg	97
81) 1,3,5-Trimethylbenzene	15.92	105	70809	8.73	ug/kg	97
82) 2-Chlorotoluene	16.02	91	63815	8.65	ug/kg	98
83) 4-Chlorotoluene	16.18	91	64947	8.41	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.38	105	71167	8.67	ug/kg	99
85) s-Butylbenzene	16.50	105	81867	8.24	ug/kg	99
86) tert-Butylbenzene	16.31	119	61729	8.68	ug/kg	98
87) p-Isopropyltoluene	16.62	119	72916	8.45	ug/kg	99
88) 1,3-Dichlorobenzene	16.88	146	39158	8.48	ug/kg	97
89) 1,4-Dichlorobenzene	16.98	146	40002	8.63	ug/kg	95
90) 1,2-Dichlorobenzene	17.54	146	36535	9.23	ug/kg	98
91) N-Butylbenzene	17.15	91	61846	8.40	ug/kg	99
92) DBCP	18.65	75	4262	15.94	ug/kg	89
93) Naphthalene	20.64	128	34530	18.55	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.93	180	18773	11.02	ug/kg	98
95) Hexachlorobutadiene	19.79	225	8658	8.51	ug/kg	97
96) 1,2,3-Trichlorobenzene	21.08	180	15115	13.67	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD005.D Vial: 5
Acq On : 9 Mar 2021 9:56 am Operator: KG
Sample : AA65289-CAL4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:19 2021 Quant Results File: 020421.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD006.D Vial: 6
Acq On : 9 Mar 2021 10:25 am Operator: KG
Sample : AA65289-CAL5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:47 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	236992	50.00	ug/kg	-0.02
38) 1,4-Difluorobenzene(IS)	11.99	114	433407	50.00	ug/kg	-0.02
56) Chlorobenzene-d5(IS)	14.59	82	209656	50.00	ug/kg	-0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	155955	50.00	ug/kg	-0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	170654	69.71	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 139.42%			
54) D8-Toluene	13.22	98	526347	68.80	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 137.60%			
75) Bromofluorobenzene	15.71	95	233671	77.08	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 154.16%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	108443	22.13	ug/kg	99
3) Chloromethane	6.35	50	108188	22.75	ug/kg	99
4) Vinyl Chloride	6.54	62	87644	20.26	ug/kg	98
5) Bromomethane	7.19	96	41753	27.00	ug/kg	93
6) Chloroethane	7.42	64	43997	20.83	ug/kg	100
7) Trichlorofluoromethane	7.69	101	86337	19.90	ug/kg	98
8) Trichlorotrifluoroethane	8.51	101	50956	20.47	ug/kg	99
9) acrolein	8.87	56	135972	345.24	ug/kg	96
10) Acetone	9.22	43	90387	172.66	ug/kg	95
11) 1,1-Dichloroethene	8.47	96	44949	17.93	ug/kg	94
12) 3-Chloropropene	9.07	76	29308	16.84	ug/kg	98
13) Acetonitrile	9.77	41	76255	326.57	ug/kg	95
14) Iodomethane	8.70	142	273200	94.10	ug/kg	95
15) Carbon disulfide	8.59	76	837443	88.11	ug/kg	100
16) Methylene Chloride	9.18	84	61219	21.59	ug/kg	96
17) Methyl tert-butyl ether	9.50	73	152233	24.46	ug/kg	97
18) Acrylonitrile	10.09	53	322000	253.84	ug/kg	92
19) T-1,2-Dichloroethene	9.41	96	48335	17.18	ug/kg	97
20) Isopropyl Ether	9.88	45	250862	19.83	ug/kg	99
21) C-1,2-Dichloroethene	10.65	96	52921	17.44	ug/kg	97
22) 1,1-Dichloroethane	10.09	63	102170	18.79	ug/kg	100
23) Vinyl Acetate	10.28	43	830658	121.57	ug/kg	99
24) Chloroprene	10.08	88	43904	17.12	ug/kg	12
25) 2-Butanone	11.15	72	27649	150.29	ug/kg	93
26) Propionitrile	11.43	54	83617	326.38	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	78344	17.90	ug/kg	99
28) Methacrylonitrile	11.46	67	224306	263.60	ug/kg	96
29) Chloroform	10.86	83	96138	18.70	ug/kg	97
31) Dibromofluoromethane	11.05	113	170654	69.71	ug/kg	100
32) Bromochloromethane	10.85	128	30810	21.31	ug/kg	94
33) 1,1,1-Trichloroethane	11.17	97	75551	19.59	ug/kg	99
34) 1,1-Dichloropropene	11.27	75	74798	18.68	ug/kg	99
35) Diethyl Ether	8.11	59	52448	22.36	ug/kg	97
36) Methyl Acetate	9.37	74	9405	28.37	ug/kg#	88
37) Cyclohexane	10.94	56	89484	19.69	ug/kg	98
39) Methyl Cyclohexane	12.06	55	69407	19.71	ug/kg	95
40) Carbon Tetrachloride	11.13	117	77753	19.85	ug/kg	100
41) 1,2-Dichloroethane	11.65	62	79750	21.72	ug/kg	98
42) Benzene	11.51	78	183394	17.40	ug/kg	78
43) Isobutyl Alcohol	11.53	43	96340	501.17	ug/kg#	88
44) Trichloroethene	12.02	130	53544	18.70	ug/kg	94
45) 1,2-Dichloropropane	12.47	63	58351	17.87	ug/kg	99
46) Methyl Methacrylate	12.54	100	15588	27.61	ug/kg	97
47) 1,4-Dioxane	12.68	88	9448	959.38	ug/kg	97
48) Bromodichloromethane	12.48	83	72705	18.49	ug/kg	96
49) Dibromomethane	12.40	93	36830	22.28	ug/kg	94
50) 4-Methyl-2-Pentanone	13.49	100	35499	142.41	ug/kg	90
51) 2-Chloroethyl vinyl ether	12.90	63	63229	637.04	ug/kg#	100
52) 2-Hexanone	14.19	43	219692	158.65	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD006.D Vial: 6
Acq On : 9 Mar 2021 10:25 am Operator: KG
Sample : AA65289-CAL5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:47 2021 Quant Results File: 020421.RES

Quant Method : C:\HPCHEM\1\METHODS\020421.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Feb 23 09:01:32 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

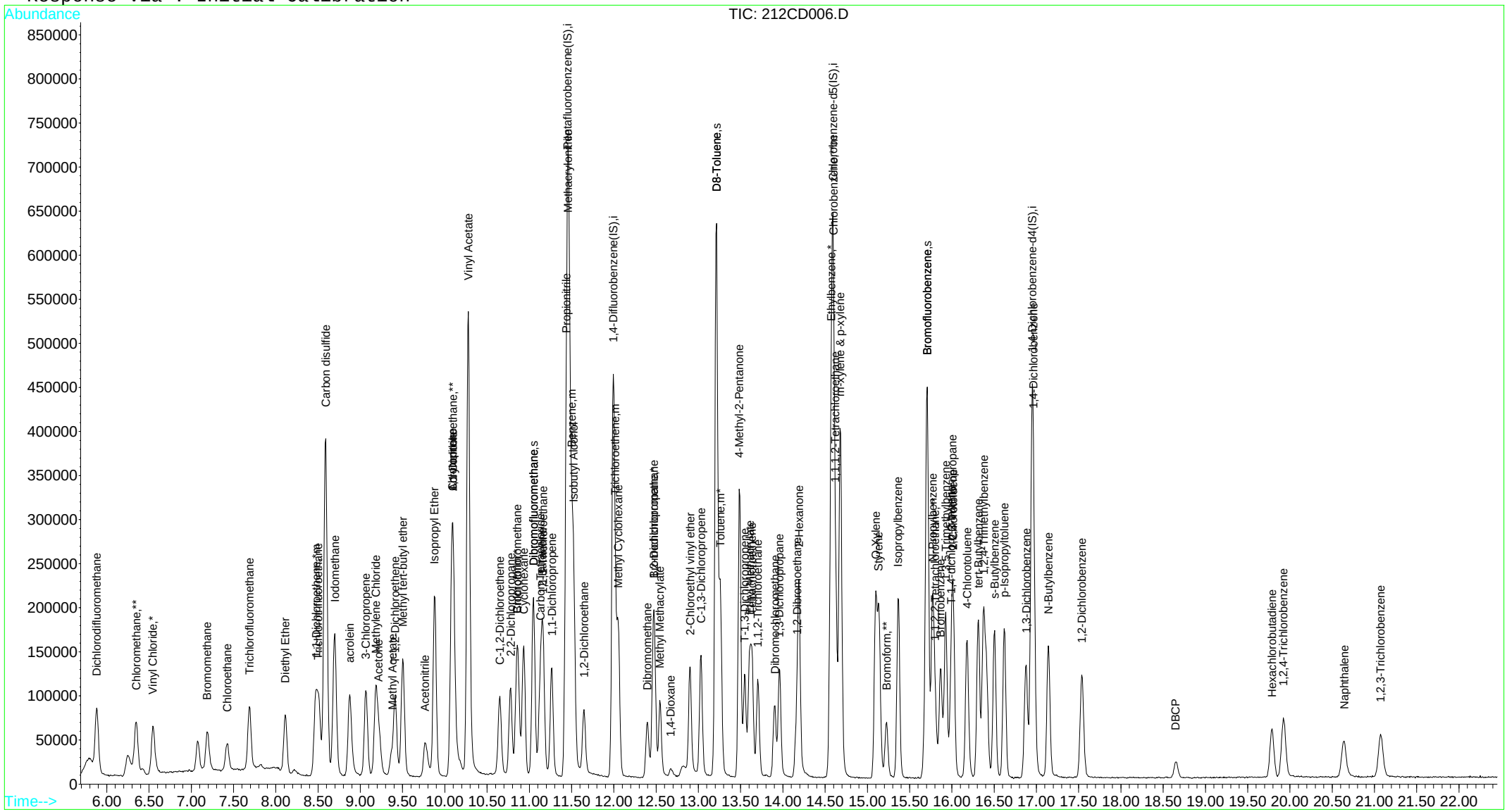
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.03	75	99053	18.89	ug/kg	97
55) D8-Toluene	13.22	98	526347	68.80	ug/kg	94
57) Toluene	13.26	92	111856	18.43	ug/kg	97
58) Ethyl Methacrylate	13.60	69	78845	26.75	ug/kg	94
59) T-1,3-Dichloropropene	13.55	75	83279	21.24	ug/kg	99
60) 1,1,2-Trichloroethane	13.70	97	43848	22.31	ug/kg	98
61) 1,3-Dichloropropane	13.96	76	92997	23.04	ug/kg	98
62) Tetrachloroethene	13.64	164	35319	19.49	ug/kg	94
63) Dibromochloromethane	13.90	129	61192	22.53	ug/kg	97
64) 1,2-Dibromoethane	14.16	107	54477	26.57	ug/kg	99
65) Chlorobenzene	14.61	112	126751	19.28	ug/kg	100
66) 1,1,1,2-Tetrachloroethane	14.63	131	50275	19.64	ug/kg#	1
67) Ethylbenzene	14.56	106	65433	19.24	ug/kg	98
68) m-xylene & p-xylene	14.68	106	157733	38.90	ug/kg	99
69) O-Xylene	15.10	106	79704	19.25	ug/kg	100
70) Bromoform	15.23	173	32299	24.98	ug/kg	99
71) Styrene	15.14	104	135721	19.67	ug/kg	98
72) Isopropylbenzene	15.36	105	197214	19.26	ug/kg	100
73) 1,2,3-Trichloropropane	16.00	75	67844	28.16	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.81	83	55890	27.74	ug/kg	99
76) Bromofluorobenzene	15.71	95	233671	77.08	ug/kg#	74
77) T-1,4-dichloro-2-butene	15.98	53	16079	29.60	ug/kg	97
78) N-Propylbenzene	15.77	91	219991	18.90	ug/kg	99
80) Bromobenzene	15.87	156	48993	18.58	ug/kg	96
81) 1,3,5-Trimethylbenzene	15.93	105	153489	18.84	ug/kg	97
82) 2-Chlorotoluene	16.02	91	136065	18.35	ug/kg	97
83) 4-Chlorotoluene	16.18	91	140109	18.06	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.37	105	154905	18.77	ug/kg	98
85) s-Butylbenzene	16.51	105	180409	18.07	ug/kg	99
86) tert-Butylbenzene	16.31	119	134395	18.81	ug/kg	99
87) p-Isopropyltoluene	16.62	119	159056	18.35	ug/kg	99
88) 1,3-Dichlorobenzene	16.88	146	84565	18.22	ug/kg	98
89) 1,4-Dichlorobenzene	16.97	146	85550	18.37	ug/kg	96
90) 1,2-Dichlorobenzene	17.54	146	81050	20.39	ug/kg	98
91) N-Butylbenzene	17.14	91	134900	18.22	ug/kg	99
92) DBCP	18.64	75	9065	33.73	ug/kg	90
93) Naphthalene	20.64	128	78811	39.02	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.92	180	42622	24.89	ug/kg	99
95) Hexachlorobutadiene	19.78	225	18265	17.86	ug/kg	96
96) 1,2,3-Trichlorobenzene	21.07	180	33263	29.94	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD006.D Vial: 6
Acq On : 9 Mar 2021 10:25 am Operator: KG
Sample : AA65289-CAL5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 10:47 2021 Quant Results File: 020421.RES

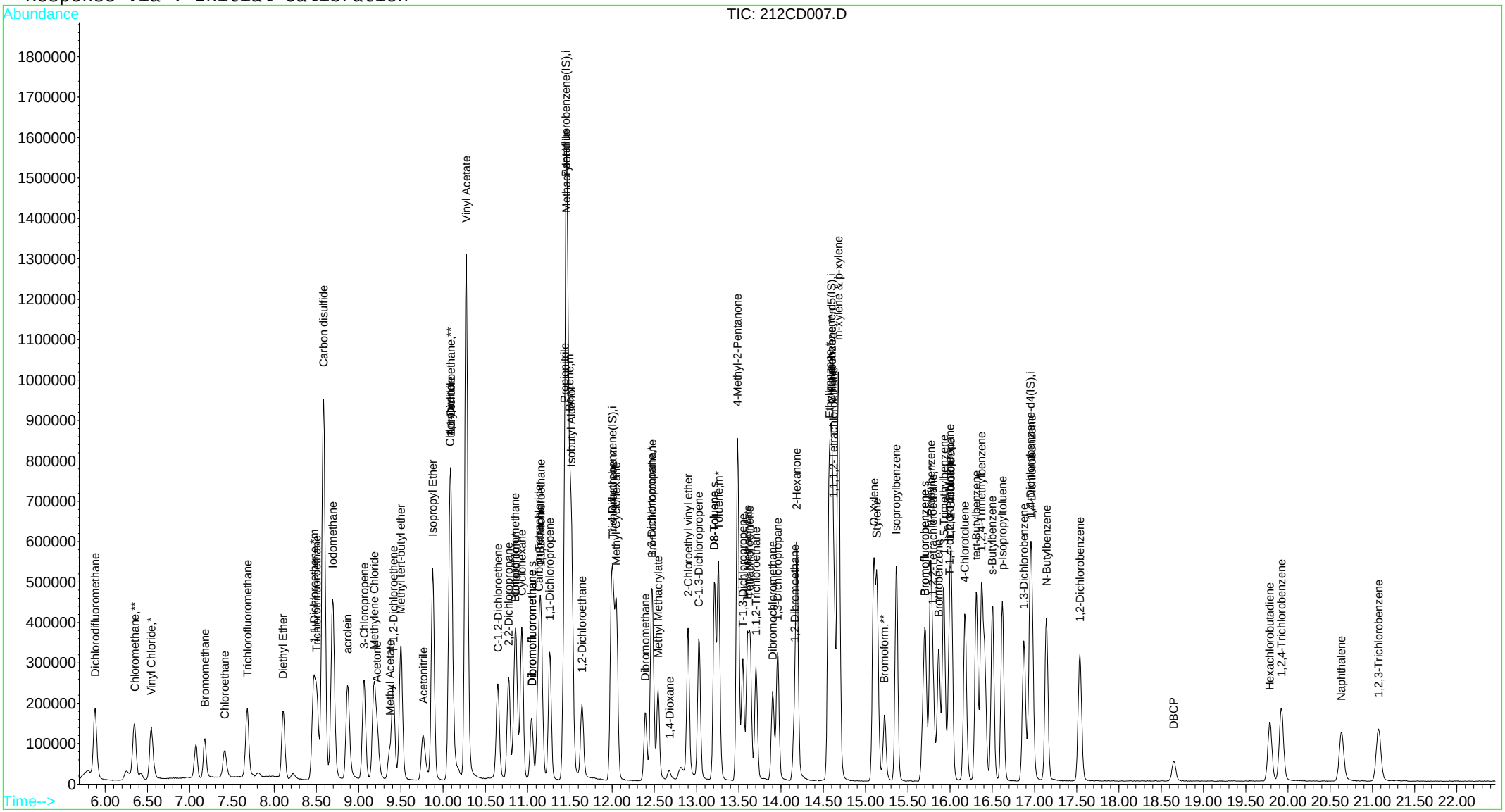
Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD007.D Vial: 7
Acq On : 9 Mar 2021 10:53 am Operator: KG
Sample : AA65289-CAL6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:16 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD007.D Vial: 7
Acq On : 9 Mar 2021 10:53 am Operator: KG
Sample : AA65289-CAL6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:16 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Mar 09 11:05:56 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	231702	50.00	ug/kg	-0.02
38) 1,4-Difluorobenzene(IS)	11.99	114	427152	50.00	ug/kg	-0.02
56) Chlorobenzene-d5(IS)	14.59	82	207404	50.00	ug/kg	-0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.94	152	156147	50.00	ug/kg	-0.03
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	128209	49.98	ug/kg	-0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 99.96%			
54) D8-Toluene	13.21	98	401221	49.82	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 99.64%			
75) Bromofluorobenzene	15.71	95	183680	51.71	ug/kg	-0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 103.42%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	263041	57.26	ug/kg	100
3) Chloromethane	6.35	50	253465	49.51	ug/kg	99
4) Vinyl Chloride	6.54	62	210449	55.56	ug/kg	99
5) Bromomethane	7.18	96	76372	34.37	ug/kg	95
6) Chloroethane	7.41	64	102528	47.96	ug/kg	99
7) Trichlorofluoromethane	7.68	101	205859	56.00	ug/kg	99
8) Trichlorotrifluoroethane	8.51	101	129038	54.34	ug/kg	99
9) acrolein	8.87	56	339585	501.64	ug/kg	99
10) Acetone	9.22	43	219975	214.98	ug/kg	94
11) 1,1-Dichloroethene	8.46	96	118872	54.37	ug/kg	96
12) 3-Chloropropene	9.06	76	71209	47.75	ug/kg	95
13) Acetonitrile	9.76	41	207202	614.10	ug/kg	97
14) Iodomethane	8.69	142	770158	402.32	ug/kg	96
15) Carbon disulfide	8.58	76	2066293	279.76	ug/kg	100
16) Methylene Chloride	9.18	84	144889	48.24	ug/kg	98
17) Methyl tert-butyl ether	9.50	73	382842	51.55	ug/kg	99
18) Acrylonitrile	10.09	53	795572	501.73	ug/kg	93
19) T-1,2-Dichloroethene	9.41	96	123524	52.02	ug/kg	96
20) Isopropyl Ether	9.88	45	636276	50.39	ug/kg	99
21) C-1,2-Dichloroethene	10.65	96	137700	54.35	ug/kg	99
22) 1,1-Dichloroethane	10.09	63	252091	48.12	ug/kg	100
23) Vinyl Acetate	10.27	43	1989869	227.64	ug/kg	99
24) Chloroprene	10.07	88	110264	51.81	ug/kg	17
25) 2-Butanone	11.15	72	68216	209.71	ug/kg	88
26) Propionitrile	11.43	54	211377	502.56	ug/kg	100
27) 2,2-Dichloropropane	10.77	77	199861	52.16	ug/kg	97
28) Methacrylonitrile	11.47	67	550395	456.56	ug/kg	96
29) Chloroform	10.87	83	235814	49.91	ug/kg	96
31) Dibromofluoromethane	11.05	113	128209	49.98	ug/kg	100
32) Bromochloromethane	10.84	128	78732	50.25	ug/kg	94
33) 1,1,1-Trichloroethane	11.16	97	191960	52.18	ug/kg	99
34) 1,1-Dichloropropene	11.26	75	189325	52.85	ug/kg	99
35) Diethyl Ether	8.10	59	133944	50.74	ug/kg	97
36) Methyl Acetate	9.36	74	23654	45.24	ug/kg	86
37) Cyclohexane	10.93	56	224088	51.70	ug/kg	97
39) Methyl Cyclohexane	12.05	55	177705	51.14	ug/kg	95
40) Carbon Tetrachloride	11.13	117	201071	51.71	ug/kg	100
41) 1,2-Dichloroethane	11.64	62	200651	49.03	ug/kg	99
42) Benzene	11.50	78	454799	42.90	ug/kg	78
43) Isobutyl Alcohol	11.52	43	239515	962.41	ug/kg#	89
44) Trichloroethene	12.02	130	139809	52.57	ug/kg	99
45) 1,2-Dichloropropane	12.47	63	150518	46.97	ug/kg	99
46) Methyl Methacrylate	12.55	100	40558	51.99	ug/kg	95
47) 1,4-Dioxane	12.68	88	24949	1129.07	ug/kg	99
48) Bromodichloromethane	12.48	83	182786	50.60	ug/kg	98
49) Dibromomethane	12.39	93	92812	51.69	ug/kg	98
50) 4-Methyl-2-Pentanone	13.48	100	94176	224.96	ug/kg	99
51) 2-Chloroethyl vinyl ether	12.90	63	186311	324.99	ug/kg#	100
52) 2-Hexanone	14.18	43	561483	242.45	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD007.D Vial: 7
Acq On : 9 Mar 2021 10:53 am Operator: KG
Sample : AA65289-CAL6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:16 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Mar 09 11:05:56 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

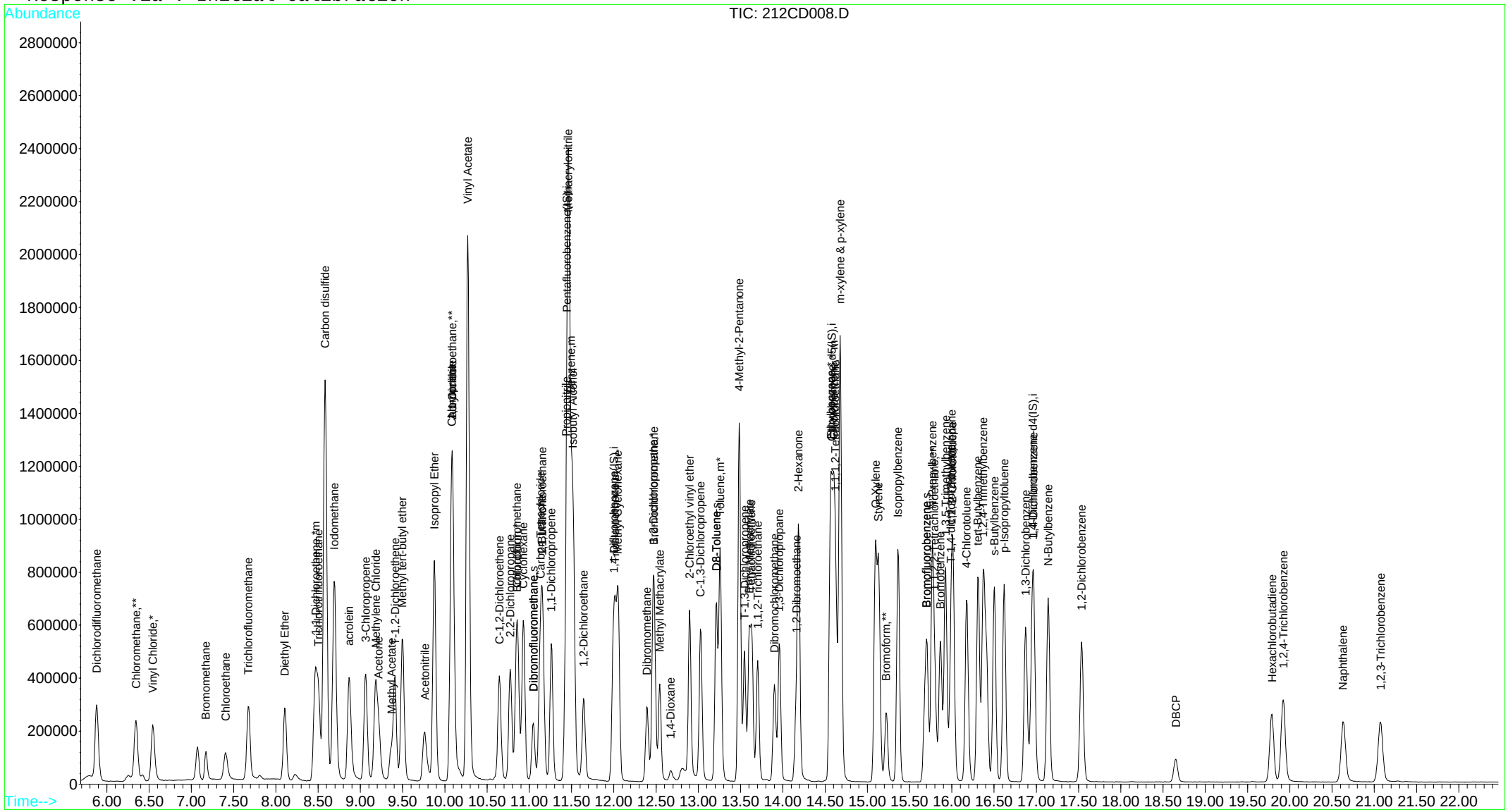
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.03	75	256537	52.37	ug/kg	99
55) D8-Toluene	13.21	98	401221	49.82	ug/kg	93
57) Toluene	13.26	92	294080	52.48	ug/kg	99
58) Ethyl Methacrylate	13.60	69	196532	47.77	ug/kg	98
59) T-1,3-Dichloropropene	13.55	75	211132	52.21	ug/kg	100
60) 1,1,2-Trichloroethane	13.70	97	113357	51.14	ug/kg	96
61) 1,3-Dichloropropane	13.96	76	235050	49.76	ug/kg	100
62) Tetrachloroethene	13.63	164	88700	52.21	ug/kg	93
63) Dibromochloromethane	13.90	129	160705	54.39	ug/kg	97
64) 1,2-Dibromoethane	14.16	107	140599	52.81	ug/kg	100
65) Chlorobenzene	14.61	112	320432	50.22	ug/kg	98
66) 1,1,1,2-Tetrachloroethane	14.63	131	130272	51.68	ug/kg#	72
67) Ethylbenzene	14.56	106	168026	52.58	ug/kg	98
68) m-xylene & p-xylene	14.68	106	406726	103.16	ug/kg	99
69) O-Xylene	15.09	106	206512	54.40	ug/kg	99
70) Bromoform	15.23	173	83355	54.78	ug/kg	99
71) Styrene	15.14	104	349096	53.15	ug/kg	99
72) Isopropylbenzene	15.36	105	513559	53.48	ug/kg	100
73) 1,2,3-Trichloropropane	15.99	75	175930	49.82	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.80	83	145870	51.54	ug/kg	99
76) Bromofluorobenzene	15.71	95	183680	51.71	ug/kg#	65
77) T-1,4-dichloro-2-butene	15.98	53	42676	45.01	ug/kg	90
78) N-Propylbenzene	15.77	91	580894	53.40	ug/kg	98
80) Bromobenzene	15.86	156	128260	51.89	ug/kg	97
81) 1,3,5-Trimethylbenzene	15.93	105	394478	51.90	ug/kg	99
82) 2-Chlorotoluene	16.01	91	349413	49.22	ug/kg	97
83) 4-Chlorotoluene	16.17	91	368825	50.97	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.37	105	398353	51.84	ug/kg	99
85) s-Butylbenzene	16.51	105	470021	52.75	ug/kg	100
86) tert-Butylbenzene	16.31	119	354072	53.15	ug/kg	99
87) p-Isopropyltoluene	16.62	119	418301	52.69	ug/kg	99
88) 1,3-Dichlorobenzene	16.87	146	224169	53.28	ug/kg	99
89) 1,4-Dichlorobenzene	16.97	146	225861	50.56	ug/kg	98
90) 1,2-Dichlorobenzene	17.54	146	216594	54.50	ug/kg	98
91) N-Butylbenzene	17.14	91	360779	55.04	ug/kg	99
92) DBCP	18.65	75	23844	44.61	ug/kg	94
93) Naphthalene	20.63	128	231475	64.12	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.92	180	113383	56.18	ug/kg	98
95) Hexachlorobutadiene	19.78	225	51130	58.69	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.07	180	89980	57.20	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD008.D Vial: 8
Acq On : 9 Mar 2021 11:22 am Operator: KG
Sample : AA65289-CAL7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:44 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD008.D Vial: 8
Acq On : 9 Mar 2021 11:22 am Operator: KG
Sample : AA65289-CAL7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:44 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Mar 09 11:17:08 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	226247	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	11.99	114	427385	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.58	82	206954	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	158337	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	181098	72.31	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 144.62%			
54) D8-Toluene	13.21	98	561539	69.73	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 139.46%			
75) Bromofluorobenzene	15.71	95	250012	70.14	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 140.28%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	446116	97.11	ug/kg	100
3) Chloromethane	6.35	50	421278	84.41	ug/kg	98
4) Vinyl Chloride	6.54	62	354443	94.09	ug/kg	99
5) Bromomethane	7.17	96	81331	39.55	ug/kg	98
6) Chloroethane	7.40	64	168949	81.49	ug/kg	98
7) Trichlorofluoromethane	7.67	101	344562	94.11	ug/kg	100
8) Trichlorotrifluoroethane	8.51	101	211944	90.10	ug/kg	98
9) acrolein	8.87	56	551067	833.22	ug/kg	99
10) Acetone	9.22	43	350971	359.67	ug/kg	98
11) 1,1-Dichloroethene	8.46	96	193927	89.54	ug/kg	99
12) 3-Chloropropene	9.06	76	115962	80.23	ug/kg	100
13) Acetonitrile	9.76	41	351053	1026.48	ug/kg	98
14) Iodomethane	8.69	142	1318681	640.44	ug/kg	100
15) Carbon disulfide	8.58	76	3353140	455.90	ug/kg	100
16) Methylene Chloride	9.18	84	226130	77.56	ug/kg	99
17) Methyl tert-butyl ether	9.50	73	617213	84.68	ug/kg	99
18) Acrylonitrile	10.09	53	1273469	822.00	ug/kg	99
19) T-1,2-Dichloroethene	9.41	96	205588	88.07	ug/kg	99
20) Isopropyl Ether	9.88	45	1021459	82.73	ug/kg	99
21) C-1,2-Dichloroethene	10.65	96	229220	91.32	ug/kg	99
22) 1,1-Dichloroethane	10.08	63	406722	80.02	ug/kg#	68
23) Vinyl Acetate	10.27	43	3135851	372.94	ug/kg	100
24) Chloroprene	10.07	88	179737	85.97	ug/kg	96
25) 2-Butanone	11.15	72	112049	362.50	ug/kg	96
26) Propionitrile	11.43	54	346290	842.46	ug/kg	100
27) 2,2-Dichloropropane	10.77	77	333652	88.54	ug/kg	99
28) Methacrylonitrile	11.46	67	877734	756.61	ug/kg	99
29) Chloroform	10.86	83	391704	84.93	ug/kg	98
31) Dibromofluoromethane	11.05	113	181098	72.30	ug/kg	100
32) Bromochloromethane	10.84	128	130017	84.91	ug/kg	97
33) 1,1,1-Trichloroethane	11.16	97	316643	87.52	ug/kg	100
34) 1,1-Dichloropropene	11.26	75	314085	88.95	ug/kg	99
35) Diethyl Ether	8.10	59	222050	85.93	ug/kg	99
36) Methyl Acetate	9.36	74	38734	77.10	ug/kg#	97
37) Cyclohexane	10.93	56	369747	86.87	ug/kg	100
39) Methyl Cyclohexane	12.05	55	290052	83.11	ug/kg	98
40) Carbon Tetrachloride	11.13	117	331487	84.71	ug/kg	99
41) 1,2-Dichloroethane	11.64	62	330364	80.94	ug/kg	99
42) Benzene	11.50	78	742316	71.68	ug/kg	98
43) Isobutyl Alcohol	11.52	43	387451	1565.80	ug/kg	96
44) Trichloroethene	12.01	130	233537	87.02	ug/kg	98
45) 1,2-Dichloropropane	12.47	63	242199	76.31	ug/kg	100
46) Methyl Methacrylate	12.54	100	66373	84.47	ug/kg	98
47) 1,4-Dioxane	12.67	88	41327	1829.88	ug/kg	99
48) Bromodichloromethane	12.48	83	301294	83.19	ug/kg	99
49) Dibromomethane	12.39	93	155539	86.09	ug/kg	98
50) 4-Methyl-2-Pentanone	13.48	100	151548	367.95	ug/kg	98
51) 2-Chloroethyl vinyl ether	12.90	63	323559	537.23	ug/kg	99
52) 2-Hexanone	14.18	43	901514	391.03	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\030921\212CD008.D Vial: 8
Acq On : 9 Mar 2021 11:22 am Operator: KG
Sample : AA65289-CAL7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:44 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Mar 09 11:17:08 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

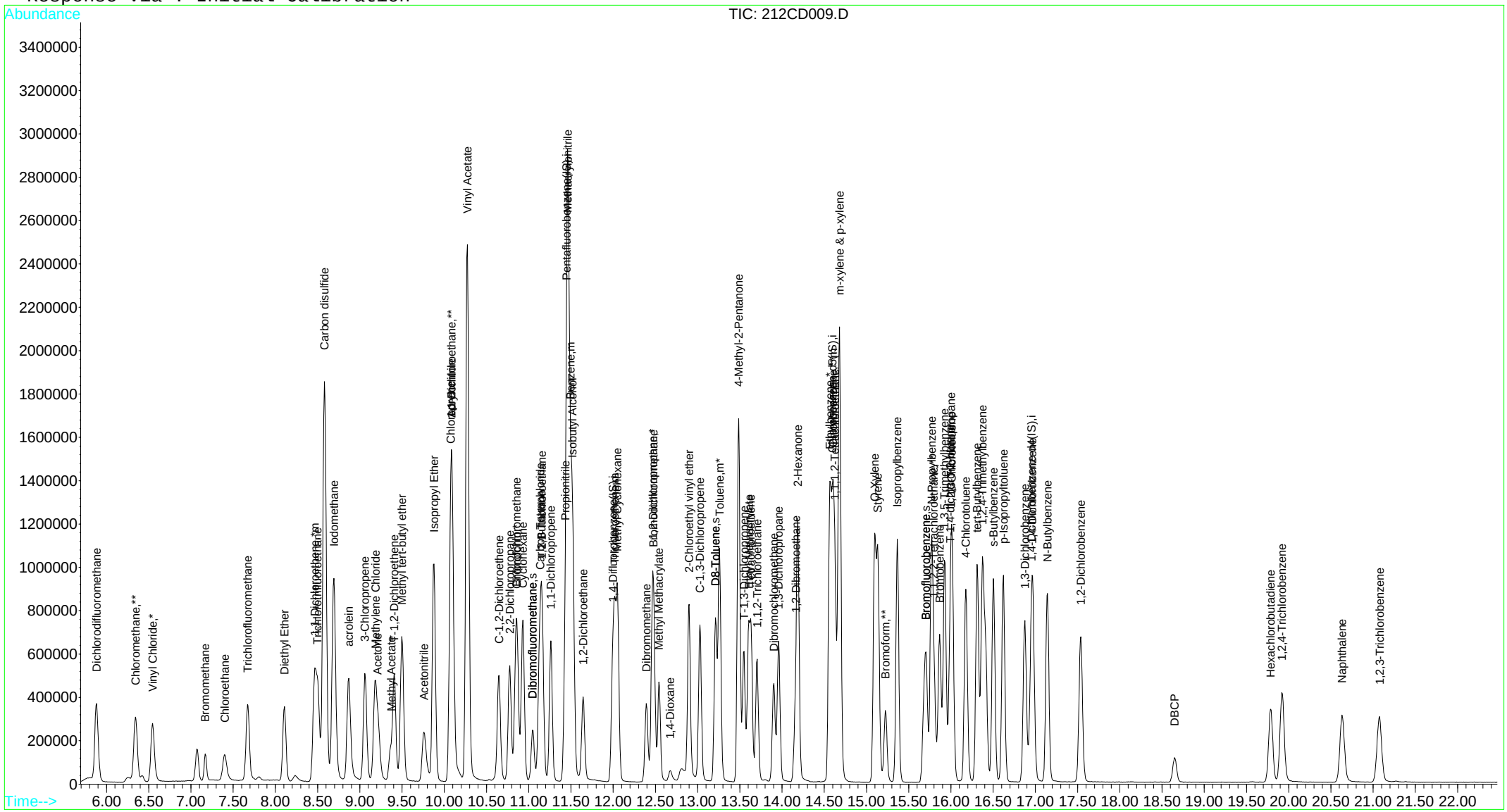
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.02	75	419617	84.95 ug/kg	100
55) D8-Toluene	13.21	98	561539	69.69 ug/kg	94
57) Toluene	13.26	92	482853	85.65 ug/kg	99
58) Ethyl Methacrylate	13.60	69	318818	78.24 ug/kg	100
59) T-1,3-Dichloropropene	13.55	75	344361	84.71 ug/kg	98
60) 1,1,2-Trichloroethane	13.70	97	180451	81.28 ug/kg	97
61) 1,3-Dichloropropane	13.96	76	384450	81.63 ug/kg	98
62) Tetrachloroethene	13.63	164	146445	85.75 ug/kg	99
63) Dibromochloromethane	13.90	129	263312	88.02 ug/kg	100
64) 1,2-Dibromoethane	14.15	107	232788	86.82 ug/kg	100
65) Chlorobenzene	14.61	112	528917	83.01 ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.63	131	214483	84.80 ug/kg#	56
67) Ethylbenzene	14.56	106	281311	87.47 ug/kg	98
68) m-xylene & p-xylene	14.68	106	680597	172.09 ug/kg	99
69) O-Xylene	15.09	106	345027	89.77 ug/kg	99
70) Bromoform	15.23	173	141048	91.44 ug/kg	97
71) Styrene	15.14	104	581067	87.75 ug/kg	99
72) Isopropylbenzene	15.36	105	851248	87.83 ug/kg	100
73) 1,2,3-Trichloropropane	15.99	75	293270	83.28 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.80	83	237949	83.83 ug/kg	99
76) Bromofluorobenzene	15.71	95	250012	70.54 ug/kg#	61
77) T-1,4-dichloro-2-butene	15.98	53	73438	78.94 ug/kg	95
78) N-Propylbenzene	15.77	91	970591	88.42 ug/kg	100
80) Bromobenzene	15.87	156	213078	84.48 ug/kg	99
81) 1,3,5-Trimethylbenzene	15.93	105	658903	84.95 ug/kg	100
82) 2-Chlorotoluene	16.01	91	580194	80.81 ug/kg	100
83) 4-Chlorotoluene	16.17	91	616798	83.79 ug/kg	100
84) 1,2,4-Trimethylbenzene	16.37	105	665289	84.86 ug/kg	100
85) s-Butylbenzene	16.51	105	795225	87.21 ug/kg	100
86) tert-Butylbenzene	16.31	119	595080	87.18 ug/kg	100
87) p-Isopropyltoluene	16.62	119	706104	86.94 ug/kg	100
88) 1,3-Dichlorobenzene	16.87	146	383143	88.83 ug/kg	100
89) 1,4-Dichlorobenzene	16.97	146	385572	84.96 ug/kg	99
90) 1,2-Dichlorobenzene	17.54	146	368623	90.12 ug/kg	100
91) N-Butylbenzene	17.14	91	624186	92.36 ug/kg	100
92) DBCP	18.64	75	41977	78.87 ug/kg	99
93) Naphthalene	20.63	128	425188	110.93 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.92	180	199006	95.27 ug/kg	98
95) Hexachlorobutadiene	19.79	225	92714	102.00 ug/kg	98
96) 1,2,3-Trichlorobenzene	21.07	180	158242	96.88 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD009.D Vial: 9
Acq On : 9 Mar 2021 11:50 am Operator: KG
Sample : AA65289-CAL8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 12:13 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD009.D Vial: 9
Acq On : 9 Mar 2021 11:50 am Operator: KG
Sample : AA65289-CAL8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 12:13 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Mar 09 11:17:20 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.44	168	228850	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	11.99	114	429679	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.59	82	211567	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	163882	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	198201	78.24	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 156.48%#			
54) D8-Toluene	13.21	98	610001	75.35	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 150.70%#			
75) Bromofluorobenzene	15.70	95	276583	75.90	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 151.80%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.88	85	575298	123.81	ug/kg	99
3) Chloromethane	6.34	50	559373	110.81	ug/kg	99
4) Vinyl Chloride	6.55	62	457412	120.04	ug/kg	99
5) Bromomethane	7.17	96	85666	41.18	ug/kg	97
6) Chloroethane	7.40	64	210343	100.30	ug/kg	98
7) Trichlorofluoromethane	7.67	101	434380	117.29	ug/kg	99
8) Trichlorotrifluoroethane	8.50	101	264861	111.32	ug/kg	99
9) acrolein	8.87	56	673615	1006.92	ug/kg	100
10) Acetone	9.22	43	437221	442.96	ug/kg	98
11) 1,1-Dichloroethene	8.47	96	241986	110.46	ug/kg	100
12) 3-Chloropropene	9.06	76	145237	99.34	ug/kg	98
13) Acetonitrile	9.76	41	432559	1250.42	ug/kg	99
14) Iodomethane	8.69	142	1650738	792.59	ug/kg	100
15) Carbon disulfide	8.58	76	4114504	553.05	ug/kg	100
16) Methylene Chloride	9.18	84	278078	94.29	ug/kg	99
17) Methyl tert-butyl ether	9.50	73	762037	103.36	ug/kg	100
18) Acrylonitrile	10.09	53	1566403	999.59	ug/kg	99
19) T-1,2-Dichloroethene	9.41	96	262156	111.03	ug/kg	97
20) Isopropyl Ether	9.87	45	1255486	100.53	ug/kg	99
21) C-1,2-Dichloroethene	10.65	96	285011	112.26	ug/kg	99
22) 1,1-Dichloroethane	10.08	63	501596	97.56	ug/kg	100
23) Vinyl Acetate	10.27	43	3822229	449.40	ug/kg	99
24) Chloroprene	10.07	88	221479	104.74	ug/kg	96
25) 2-Butanone	11.15	72	138998	444.57	ug/kg	97
26) Propionitrile	11.43	54	431174	1037.04	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	420250	110.25	ug/kg	99
28) Methacrylonitrile	11.46	67	1091640	930.29	ug/kg	97
29) Chloroform	10.87	83	492254	105.52	ug/kg	98
31) Dibromofluoromethane	11.05	113	198201	78.23	ug/kg	100
32) Bromochloromethane	10.85	128	161994	104.60	ug/kg	96
33) 1,1,1-Trichloroethane	11.16	97	395558	108.08	ug/kg	99
34) 1,1-Dichloropropene	11.26	75	390603	109.36	ug/kg	100
35) Diethyl Ether	8.11	59	275355	105.35	ug/kg	99
36) Methyl Acetate	9.36	74	48201	94.85	ug/kg	99
37) Cyclohexane	10.93	56	454233	105.50	ug/kg	100
39) Methyl Cyclohexane	12.05	55	357184	101.80	ug/kg	98
40) Carbon Tetrachloride	11.13	117	412129	104.76	ug/kg	100
41) 1,2-Dichloroethane	11.64	62	410844	100.12	ug/kg	99
42) Benzene	11.50	78	914060	87.79	ug/kg	97
43) Isobutyl Alcohol	11.52	43	472635	1899.85	ug/kg	97
44) Trichloroethene	12.02	130	294281	109.07	ug/kg	97
45) 1,2-Dichloropropane	12.46	63	302374	94.76	ug/kg	100
46) Methyl Methacrylate	12.54	100	84278	106.69	ug/kg	99
47) 1,4-Dioxane	12.68	88	53412	2352.35	ug/kg	99
48) Bromodichloromethane	12.48	83	378466	103.94	ug/kg	99
49) Dibromomethane	12.39	93	197877	108.93	ug/kg	98
50) 4-Methyl-2-Pentanone	13.49	100	190377	459.75	ug/kg	96
51) 2-Chloroethyl vinyl ether	12.90	63	417587	689.65	ug/kg	100
52) 2-Hexanone	14.19	43	1122837	484.42	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD009.D Vial: 9
Acq On : 9 Mar 2021 11:50 am Operator: KG
Sample : AA65289-CAL8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 12:13 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Tue Mar 09 11:17:20 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

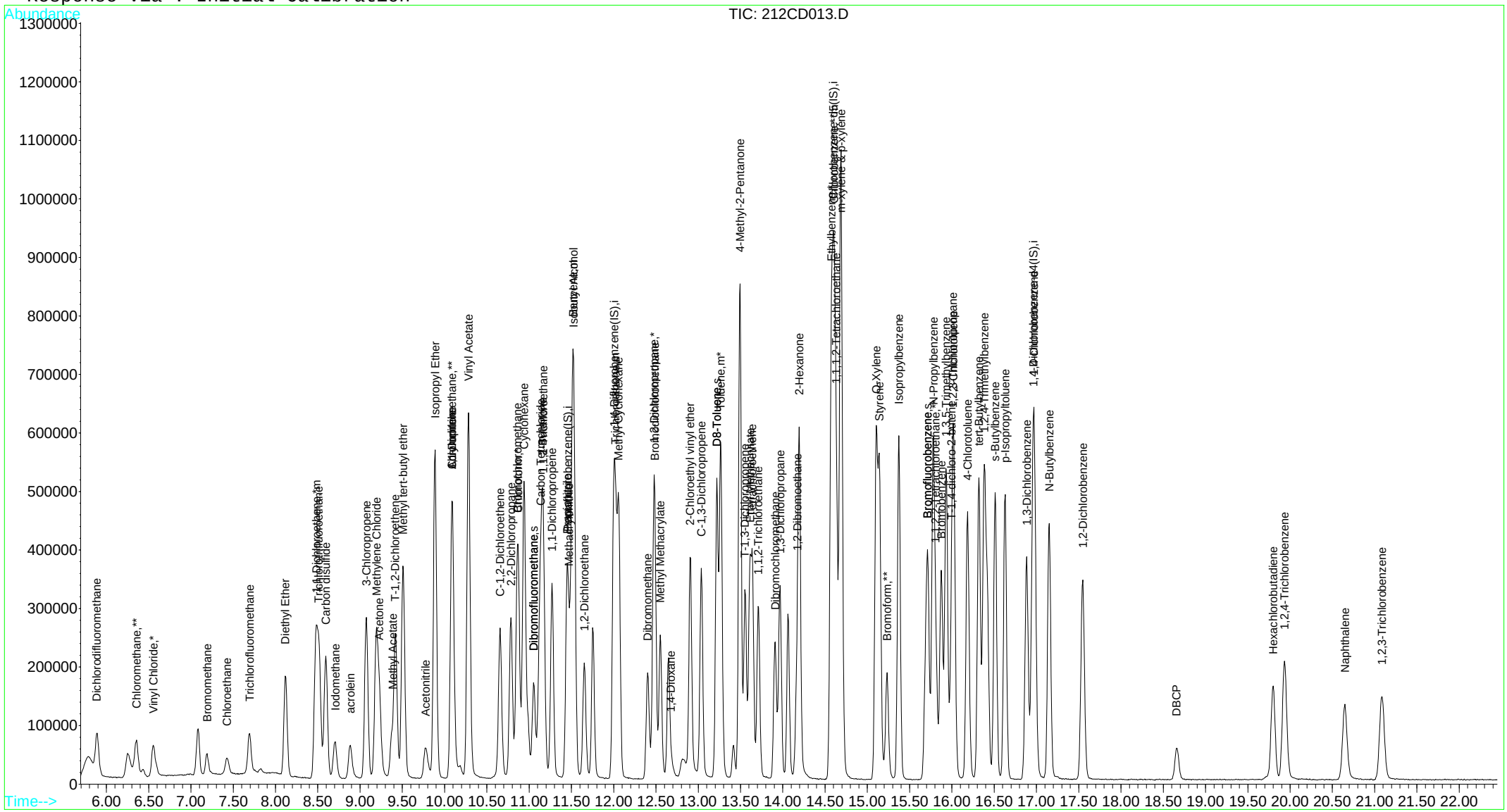
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.03	75	520528	104.82 ug/kg	100
55) D8-Toluene	13.21	98	610001	75.30 ug/kg	93
57) Toluene	13.26	92	606369	105.21 ug/kg	99
58) Ethyl Methacrylate	13.60	69	396283	95.13 ug/kg	99
59) T-1,3-Dichloropropene	13.55	75	434572	104.57 ug/kg	98
60) 1,1,2-Trichloroethane	13.71	97	229068	100.92 ug/kg	98
61) 1,3-Dichloropropane	13.96	76	481071	99.92 ug/kg	98
62) Tetrachloroethene	13.64	164	186774	106.99 ug/kg	99
63) Dibromochloromethane	13.90	129	335405	109.68 ug/kg	100
64) 1,2-Dibromoethane	14.16	107	293805	107.19 ug/kg	99
65) Chlorobenzene	14.60	112	663912	101.93 ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.63	131	270696	104.69 ug/kg#	78
67) Ethylbenzene	14.57	106	354043	107.69 ug/kg	98
68) m-xylene & p-xylene	14.68	106	849370	210.08 ug/kg	99
69) O-Xylene	15.10	106	437685	111.39 ug/kg	99
70) Bromoform	15.22	173	176695	112.05 ug/kg	99
71) Styrene	15.13	104	737027	108.87 ug/kg	99
72) Isopropylbenzene	15.36	105	1075065	108.50 ug/kg	100
73) 1,2,3-Trichloropropane	15.99	75	368186	102.28 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.80	83	297537	102.53 ug/kg	99
76) Bromofluorobenzene	15.70	95	276583	76.33 ug/kg#	59
77) T-1,4-dichloro-2-butene	15.99	53	93716	98.54 ug/kg	93
78) N-Propylbenzene	15.77	91	1229533	109.57 ug/kg	100
80) Bromobenzene	15.87	156	271247	103.91 ug/kg	99
81) 1,3,5-Trimethylbenzene	15.93	105	838057	104.40 ug/kg	99
82) 2-Chlorotoluene	16.01	91	738976	99.44 ug/kg	99
83) 4-Chlorotoluene	16.18	91	791463	103.88 ug/kg	100
84) 1,2,4-Trimethylbenzene	16.37	105	849962	104.75 ug/kg	100
85) s-Butylbenzene	16.50	105	1014974	107.55 ug/kg	100
86) tert-Butylbenzene	16.31	119	766619	108.51 ug/kg	98
87) p-Isopropyltoluene	16.62	119	906055	107.78 ug/kg	99
88) 1,3-Dichlorobenzene	16.88	146	492393	110.29 ug/kg	100
89) 1,4-Dichlorobenzene	16.97	146	496164	105.64 ug/kg	99
90) 1,2-Dichlorobenzene	17.54	146	476906	112.65 ug/kg	99
91) N-Butylbenzene	17.14	91	791207	113.11 ug/kg	100
92) DBCP	18.65	75	54780	99.44 ug/kg	99
93) Naphthalene	20.63	128	577378	145.54 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.93	180	263386	121.83 ug/kg	99
95) Hexachlorobutadiene	19.78	225	118851	126.33 ug/kg	98
96) 1,2,3-Trichlorobenzene	21.08	180	210790	124.69 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\030921\212CD013.D Vial: 13
Acq On : 9 Mar 2021 2:04 pm Operator: KG
Sample : AA65289-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 11:48 2021 Quant Results File: 030921.RES

Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Thu Mar 11 08:31:16 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD013.D Vial: 13
Acq On : 9 Mar 2021 2:04 pm Operator: KG
Sample : AA65289-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 11:48 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.45	168	241526	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.00	114	436002	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.60	82	211494	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.95	152	162014	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.05	113	129676	48.04	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.08%			
54) D8-Toluene	13.22	98	414318	50.43	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 100.86%			
75) Bromofluorobenzene	15.71	95	187389	51.35	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 102.70%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.89	85	101463	19.58	ug/kg	98
3) Chloromethane	6.36	50	110249	20.28	ug/kg	99
4) Vinyl Chloride	6.56	62	85788	20.37	ug/kg	96
5) Bromomethane	7.19	96	28127	12.59	ug/kg	96
6) Chloroethane	7.42	64	42669	19.23	ug/kg	99
7) Trichlorofluoromethane	7.69	101	85168	20.88	ug/kg	100
8) Trichlorotrifluoroethane	8.52	101	133314	51.55	ug/kg	99
9) acrolein	8.89	56	86415	121.66	ug/kg	98
10) Acetone	9.23	43	261169	281.90	ug/kg	98
11) 1,1-Dichloroethene	8.48	96	118632	49.91	ug/kg	99
12) 3-Chloropropene	9.08	76	80880	52.44	ug/kg	100
13) Acetonitrile	9.77	41	106740	274.09	ug/kg	97
14) Iodomethane	8.70	142	109164	31.76	ug/kg	100
15) Carbon disulfide	8.60	76	453823	56.08	ug/kg	100
16) Methylene Chloride	9.20	84	148395	48.20	ug/kg	100
17) Methyl tert-butyl ether	9.51	73	412289	52.38	ug/kg	99
18) Acrylonitrile	10.09	53	319587	192.59	ug/kg#	72
19) T-1,2-Dichloroethene	9.42	96	132097	51.65	ug/kg	99
20) Isopropyl Ether	9.89	45	690387	52.12	ug/kg	100
21) C-1,2-Dichloroethene	10.66	96	150017	54.20	ug/kg	99
22) 1,1-Dichloroethane	10.09	63	278049	51.40	ug/kg	100
23) Vinyl Acetate	10.28	43	442429	50.35	ug/kg	98
24) Chloroprene	10.09	88	120372	53.12	ug/kg	1
25) 2-Butanone	11.16	72	79759m	271.47	ug/kg	
26) Propionitrile	11.44	54	20314	45.78	ug/kg	100
27) 2,2-Dichloropropane	10.78	77	217288	52.63	ug/kg	100
28) Methacrylonitrile	11.48	67	61933	50.80	ug/kg	86
29) Chloroform	10.88	83	255547	51.16	ug/kg	95
31) Dibromofluoromethane	11.05	113	129676	48.04	ug/kg	100
32) Bromochloromethane	10.85	128	86958	52.50	ug/kg	98
33) 1,1,1-Trichloroethane	11.17	97	205463	52.06	ug/kg	99
34) 1,1-Dichloropropene	11.27	75	200537	51.87	ug/kg	99
35) Diethyl Ether	8.12	59	141906	50.64	ug/kg	98
36) Methyl Acetate	9.38	74	25307	47.71	ug/kg	97
37) Cyclohexane	10.94	56	248100	53.66	ug/kg	99
39) Methyl Cyclohexane	12.06	55	190278	53.07	ug/kg	99
40) Carbon Tetrachloride	11.13	117	210560	52.05	ug/kg	99
41) 1,2-Dichloroethane	11.65	62	216541	51.92	ug/kg	98
42) Benzene	11.51	78	527635	56.50	ug/kg#	50
43) Isobutyl Alcohol	11.53	43	166249	664.52	ug/kg#	1
44) Trichloroethene	12.03	130	151322	54.06	ug/kg	98
45) 1,2-Dichloropropane	12.47	63	158989	49.71	ug/kg	99
46) Methyl Methacrylate	12.56	100	44844	55.10	ug/kg	100
47) 1,4-Dioxane	12.68	88	23679	988.23	ug/kg	97
48) Bromodichloromethane	12.49	83	197648	52.97	ug/kg	100
49) Dibromomethane	12.40	93	99320	52.79	ug/kg	100
50) 4-Methyl-2-Pentanone	13.50	100	99128	257.15	ug/kg	93
51) 2-Chloroethyl vinyl ether	12.91	63	190991	232.18	ug/kg	99
52) 2-Hexanone	14.19	43	564717	241.72	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\030921\212CD013.D Vial: 13
Acq On : 9 Mar 2021 2:04 pm Operator: KG
Sample : AA65289-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 11:48 2021 Quant Results File: 030921.RES

Quant Method : C:\HPCHEM\1\METHODS\030921.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Mar 10 11:37:03 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.04	75	254362	49.79	ug/kg	98
55) D8-Toluene	13.22	98	414318	50.43	ug/kg	93
57) Toluene	13.27	92	320275	54.75	ug/kg	99
58) Ethyl Methacrylate	13.61	69	203404	49.28	ug/kg	99
59) T-1,3-Dichloropropene	13.55	75	231809	55.08	ug/kg	100
60) 1,1,2-Trichloroethane	13.71	97	118005	51.85	ug/kg	96
61) 1,3-Dichloropropane	13.97	76	243197	50.41	ug/kg	100
62) Tetrachloroethene	13.64	164	95727	53.90	ug/kg	99
63) Dibromochloromethane	13.91	129	174564	55.73	ug/kg	99
64) 1,2-Dibromoethane	14.17	107	148111	53.01	ug/kg	100
65) Chlorobenzene	14.61	112	349792	53.34	ug/kg	100
66) 1,1,1,2-Tetrachloroethane	14.64	131	141709	54.10	ug/kg	97
67) Ethylbenzene	14.57	106	184295	54.91	ug/kg	97
68) m-xylene & p-xylene	14.69	106	430965	104.98	ug/kg	100
69) O-Xylene	15.11	106	227451	56.25	ug/kg	98
70) Bromoform	15.23	173	95384	58.58	ug/kg	98
71) Styrene	15.14	104	379517	54.81	ug/kg	99
72) Isopropylbenzene	15.37	105	561483	55.42	ug/kg	100
73) 1,2,3-Trichloropropane	16.00	75	183209	50.51	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.81	83	151382	51.71	ug/kg	99
76) Bromofluorobenzene	15.71	95	187389	51.35	ug/kg#	65
77) T-1,4-dichloro-2-butene	15.99	53	42194	44.53	ug/kg	90
78) N-Propylbenzene	15.78	91	638895	55.56	ug/kg	100
80) Bromobenzene	15.87	156	141510	54.19	ug/kg	100
81) 1,3,5-Trimethylbenzene	15.93	105	439785	54.69	ug/kg	100
82) 2-Chlorotoluene	16.02	91	381727	51.93	ug/kg	100
83) 4-Chlorotoluene	16.19	91	406683	53.42	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.38	105	446194	54.88	ug/kg	99
85) s-Butylbenzene	16.51	105	528277	55.47	ug/kg	100
86) tert-Butylbenzene	16.32	119	394580	55.29	ug/kg	98
87) p-Isopropyltoluene	16.63	119	463619	54.66	ug/kg	100
88) 1,3-Dichlorobenzene	16.88	146	251664	55.54	ug/kg	99
89) 1,4-Dichlorobenzene	16.98	146	246025	52.21	ug/kg	99
90) 1,2-Dichlorobenzene	17.55	146	239735	55.52	ug/kg	100
91) N-Butylbenzene	17.15	91	395563	55.23	ug/kg	99
92) DBCP	18.66	75	27013	50.77	ug/kg	99
93) Naphthalene	20.65	128	242673	50.45	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.93	180	130949	58.29	ug/kg	99
95) Hexachlorobutadiene	19.80	225	56989	57.41	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.09	180	102888	58.23	ug/kg	98

(#) = qualifier out of range (m) = manual integration

ANALYSIS SEQUENCE

AA65607

Instrument: OVGCMS5

Calibration ID: UNASSIGNED

Printed: 3/29/2021 11:37:24AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA65607-TUN1	QC		1		A1B1159			
AA65607-CAL1	QC		2		A1C1259	A0H0536		
AA65607-CAL2	QC		3		A1C1260	A0H0536		
AA65607-CAL3	QC		4		A1C1261	A0H0536		
AA65607-CAL4	QC		5		A1C1262	A0H0536		
AA65607-CAL5	QC		6		A1C1263	A0H0536		
AA65607-CAL6	QC		7		A1C1264	A0H0536		
AA65607-CAL7	QC		8		A1C1265	A0H0536		
AA65607-CAL8	QC		9		A1C1266	A0H0536		
AA65607-SCV1	QC		10		A1C1212	A0H0536		

Samples Loaded By — 03/29/21 Date

Data Processed By — 03/29/21 Date

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☐ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

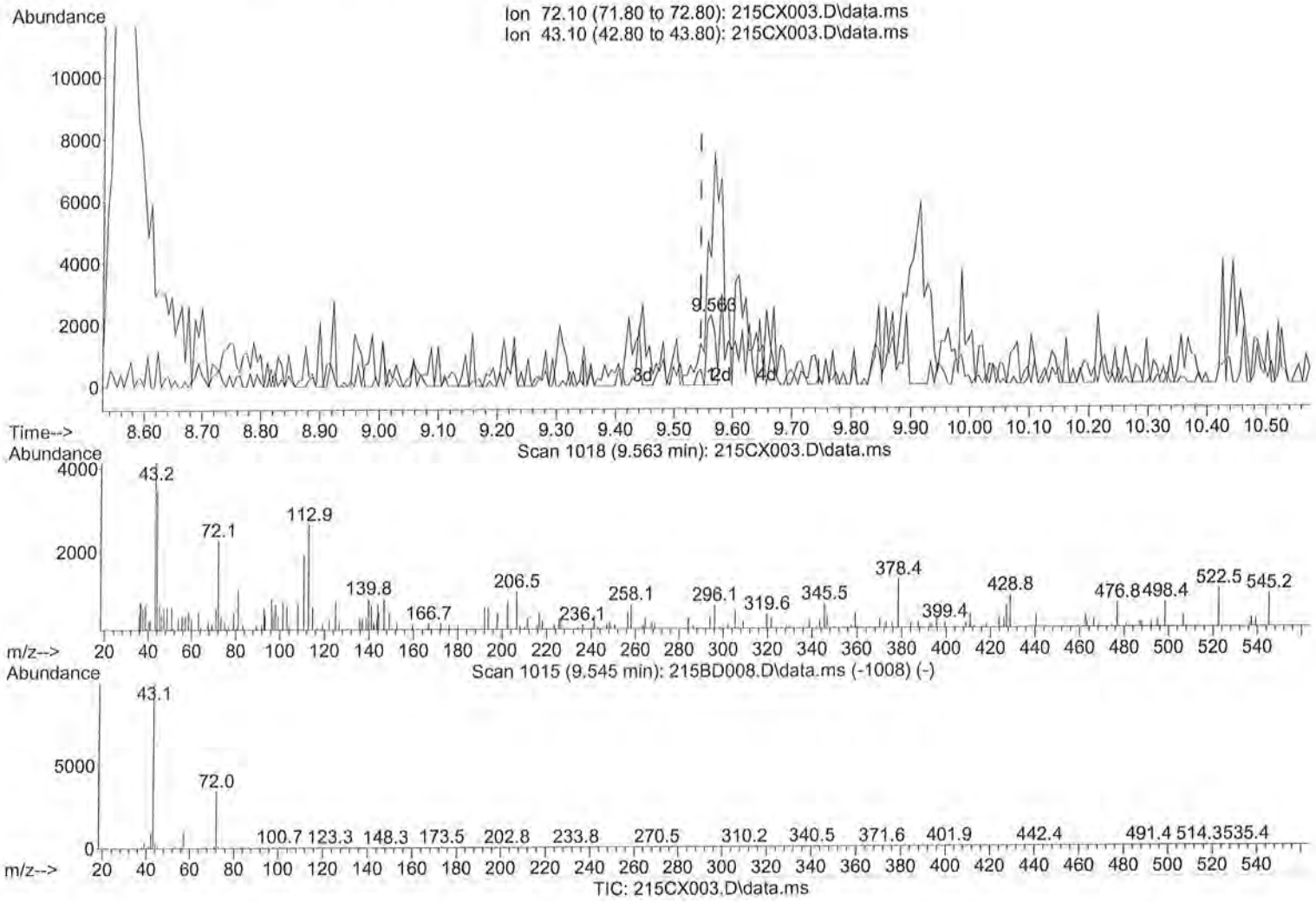
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

Instrument ID:	8VGcms5
Sequence/Batch ID:	AA65607
Data File Prefix:	215CX
Date and Time Range of MIs:	03/29/21 1142 - 1248
Reviewer Print Name:	Neil Christians
Reviewer Signature:	
Date of Review:	03/30/21

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



(33) 2-Butanone

9.563min (+ 0.018) 2.37 ug/L

response 2619

Ion	Exp%	Act%
72.10	100.00	100.00
43.10	260.30	500.42#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

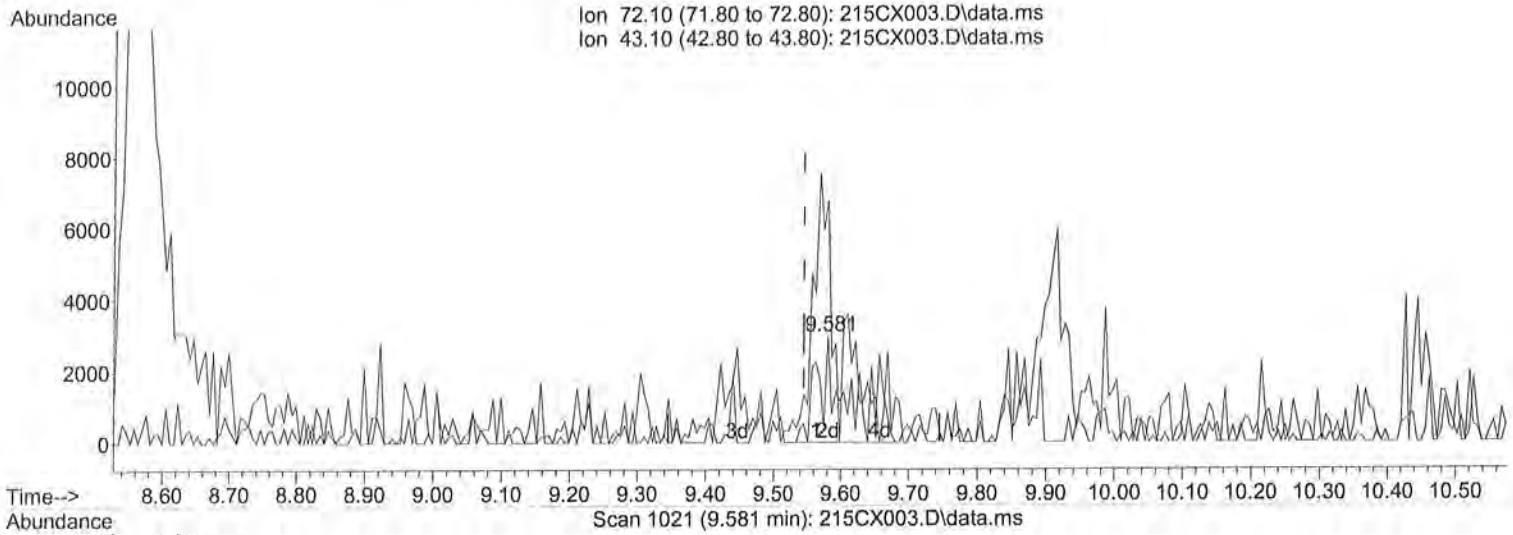
Review by/Date KJ 03/30/21

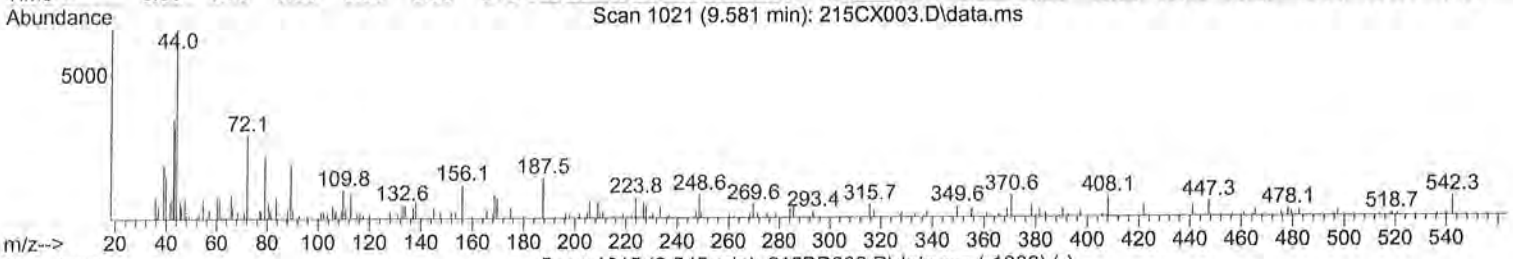
Review by/Date:

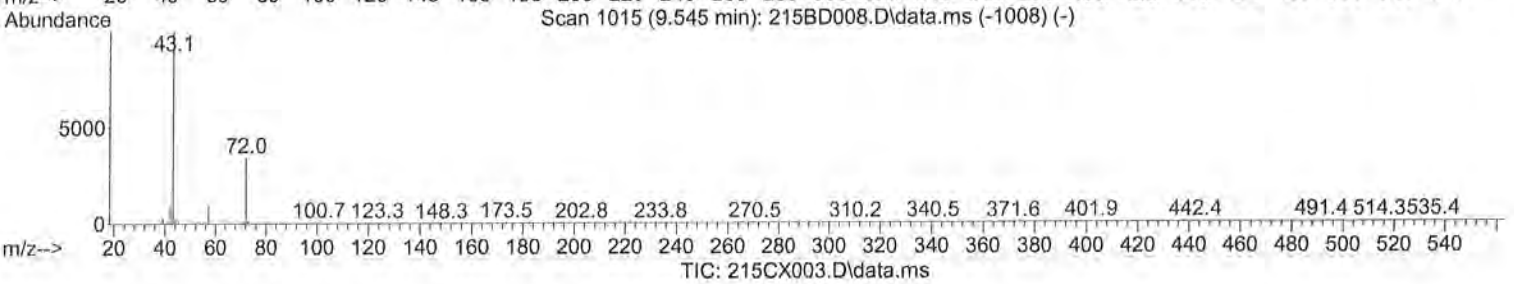
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX003.D\data.ms

(33) 2-Butanone

9.581min (+ 0.035) 8.99 ug/L m

response 9924

Ion	Exp%	Act%
72.10	100.00	100.00
43.10	260.30	132.06#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

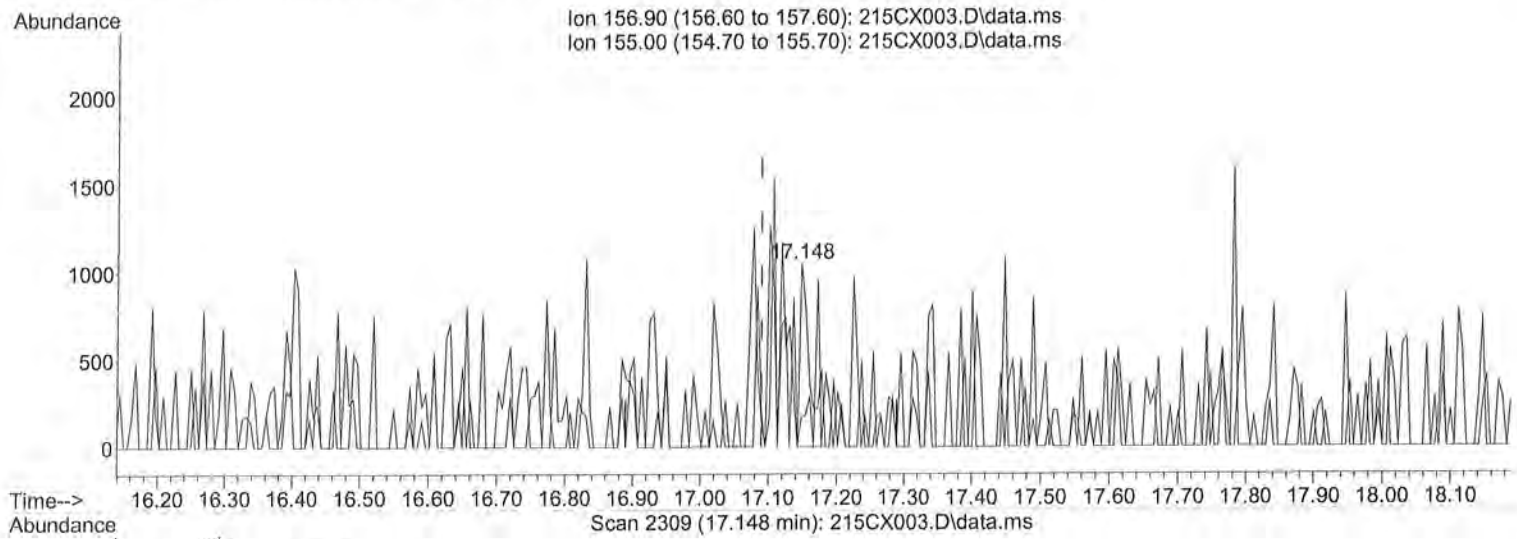
Review by/Date W 03/30/21

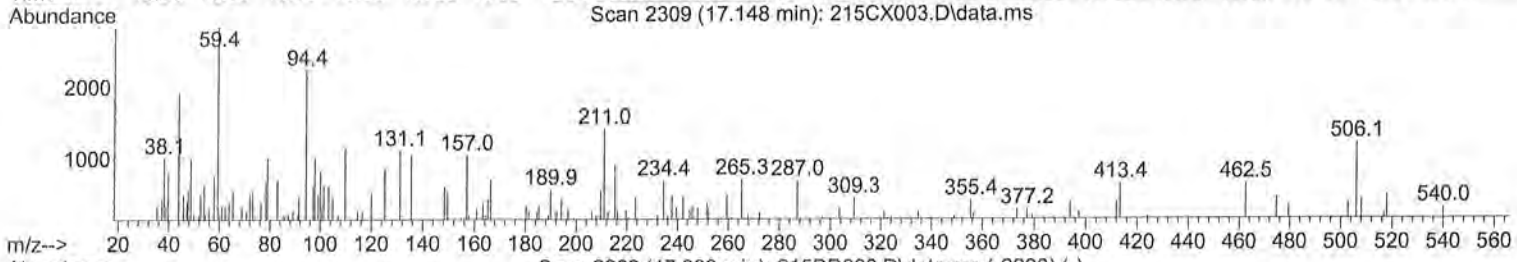
Review by/Date:

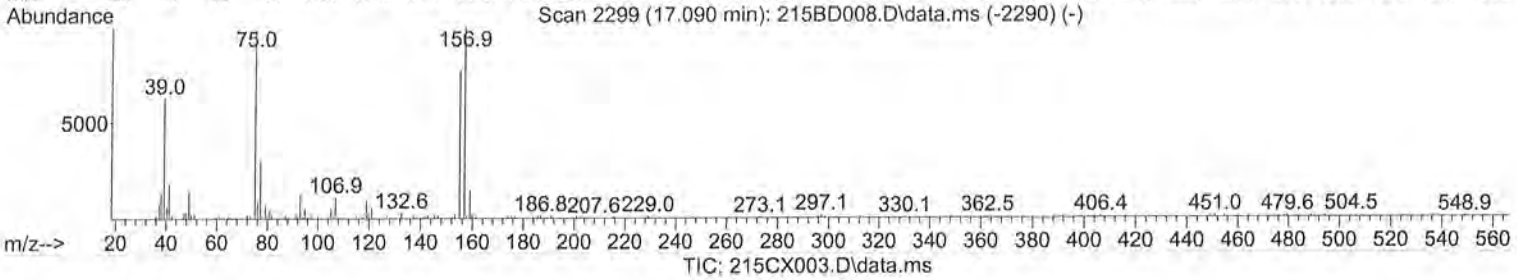
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX003.D\data.ms

(92) DBCP

17.148min (+ 0.059) 0.53 ug/L

response 1091

Ion	Exp%	Act%
156.90	100.00	100.00
155.00	81.20	101.92#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ]

Reviewed by/Date: W 03/30/21

Reviewed by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
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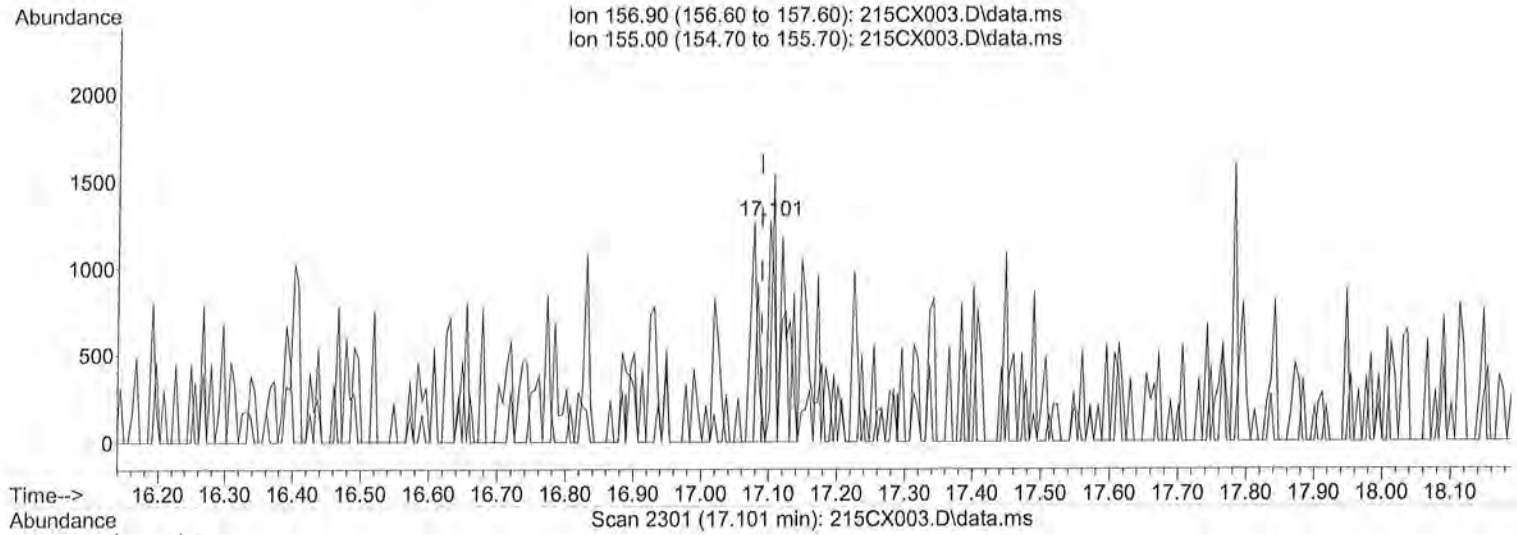
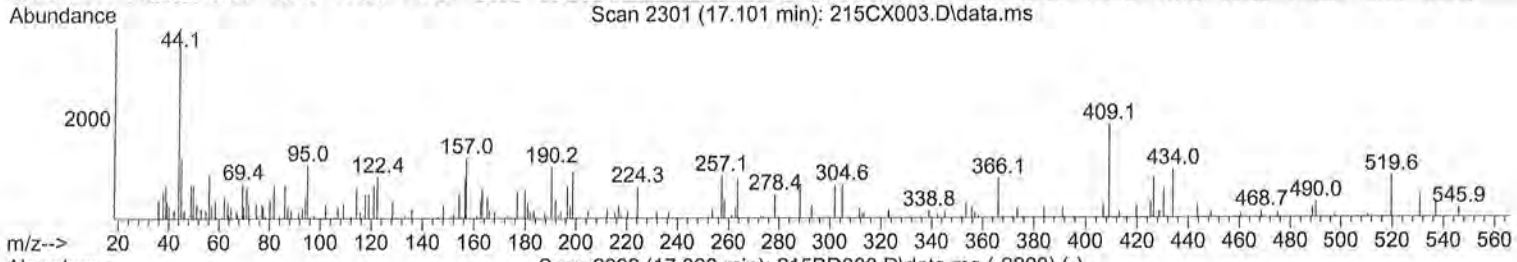
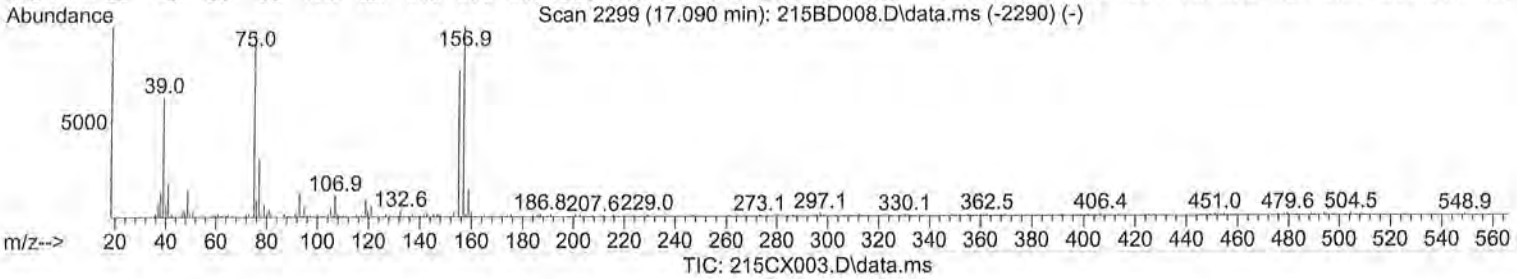






TIC: 215CX003.D\data.ms

(92) DBCP

17.101min (+ 0.012) 1.27 ug/L m

response 2629

Ion	Exp%	Act%
156.90	100.00	100.00
155.00	81.20	42.30#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

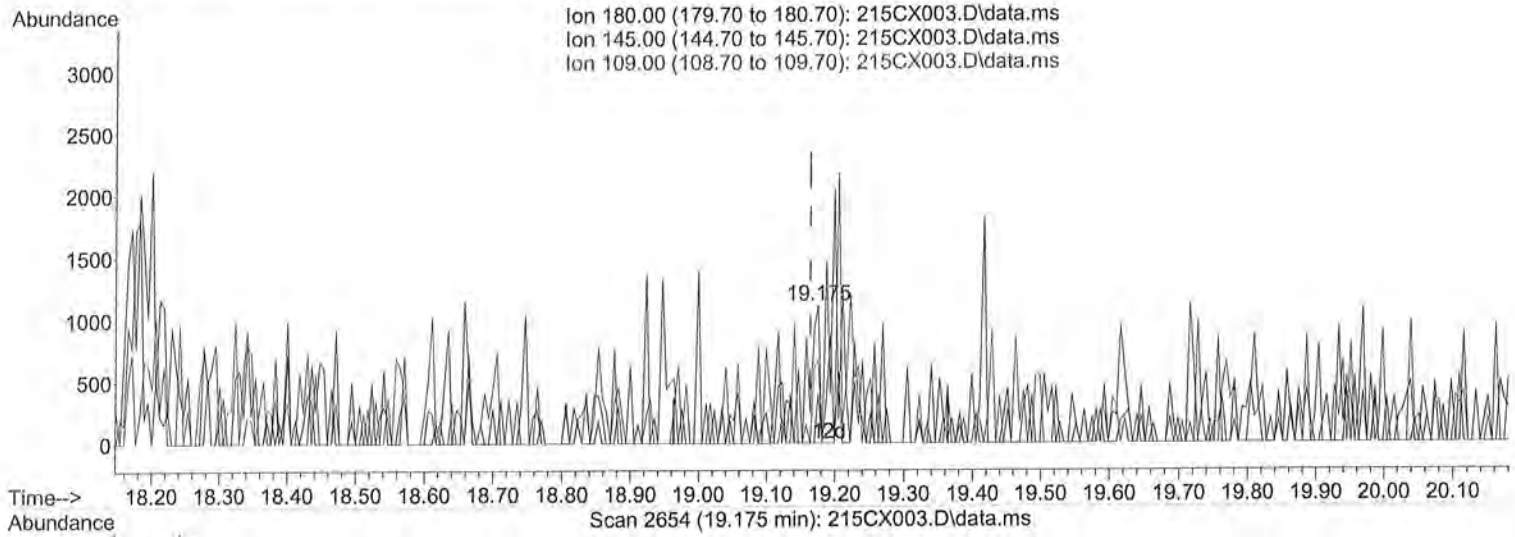
Review by/Date: W 03/30/21

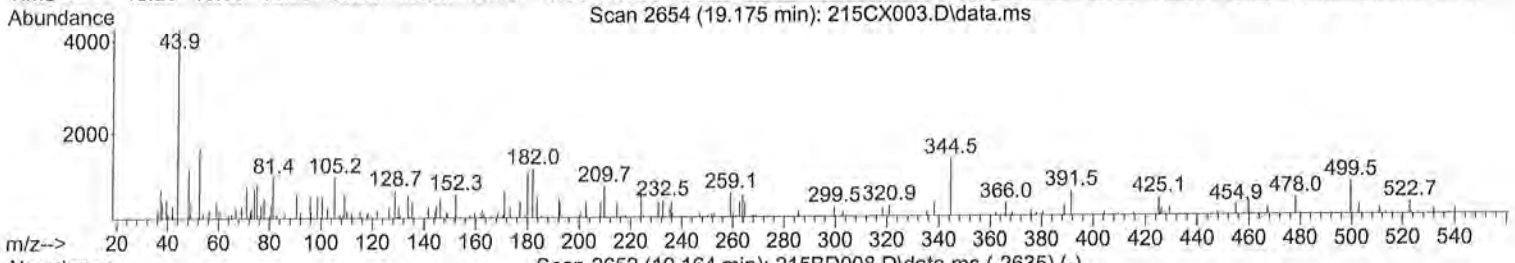
Review by/Date:

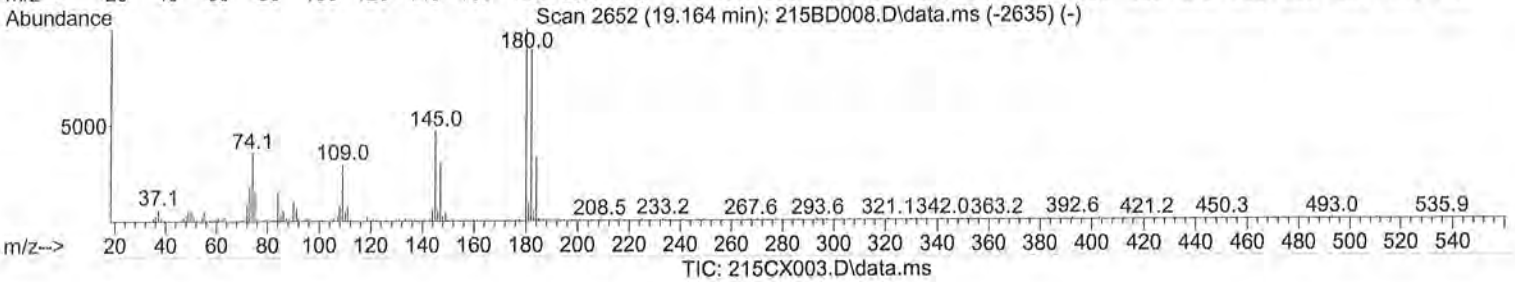
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX003.D\data.ms

(96) 1,2,3-Trichlorobenzene

19.175min (+ 0.012) 0.19 ug/L

response 1100

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	40.60	0.00#
109.00	33.80	0.00#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] [illegible] integration

[ ] [illegible]

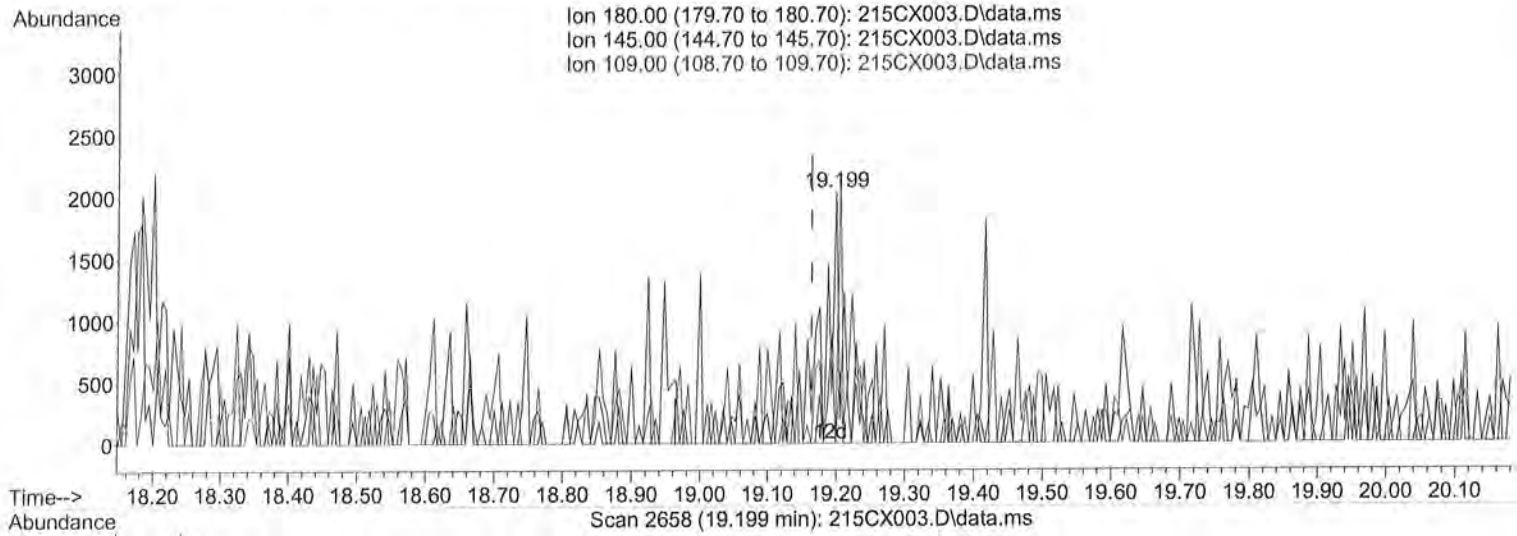
Reviewed by/Date: N 03/30/21

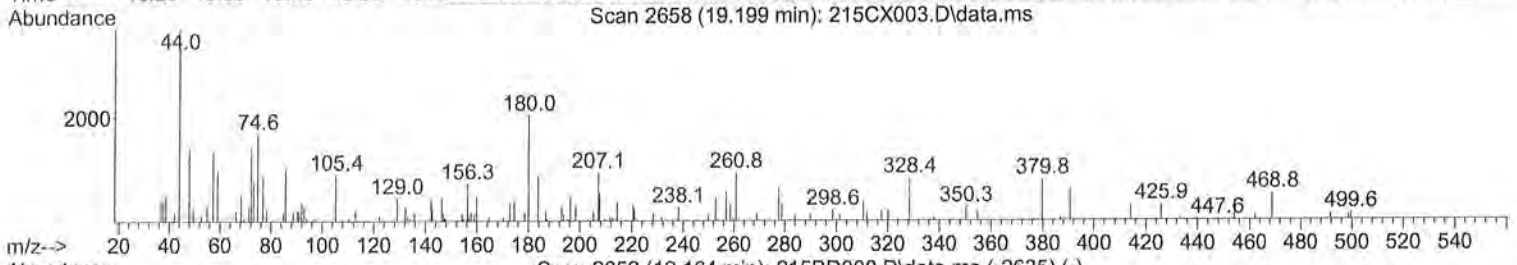
Reason(s)/Note:

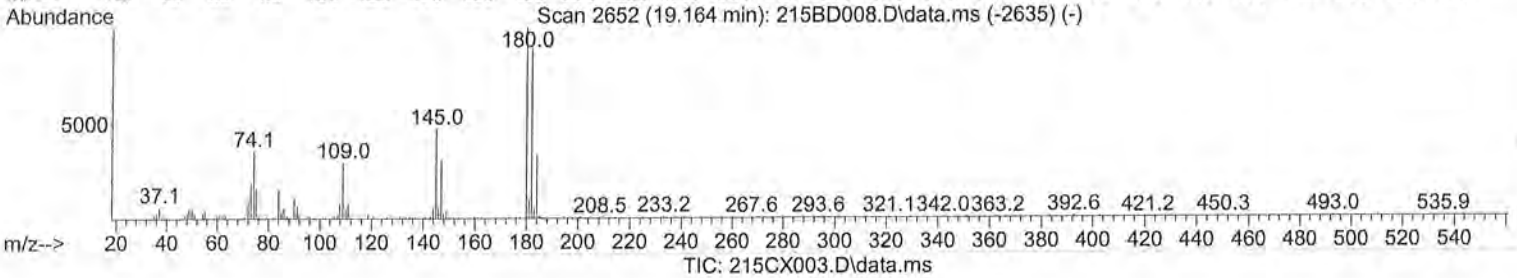
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX003.D\data.ms

(96) 1,2,3-Trichlorobenzene

19.199min (+ 0.035) 0.66 ug/L m

response 3745

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	40.60	0.00#
109.00	33.80	0.00#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

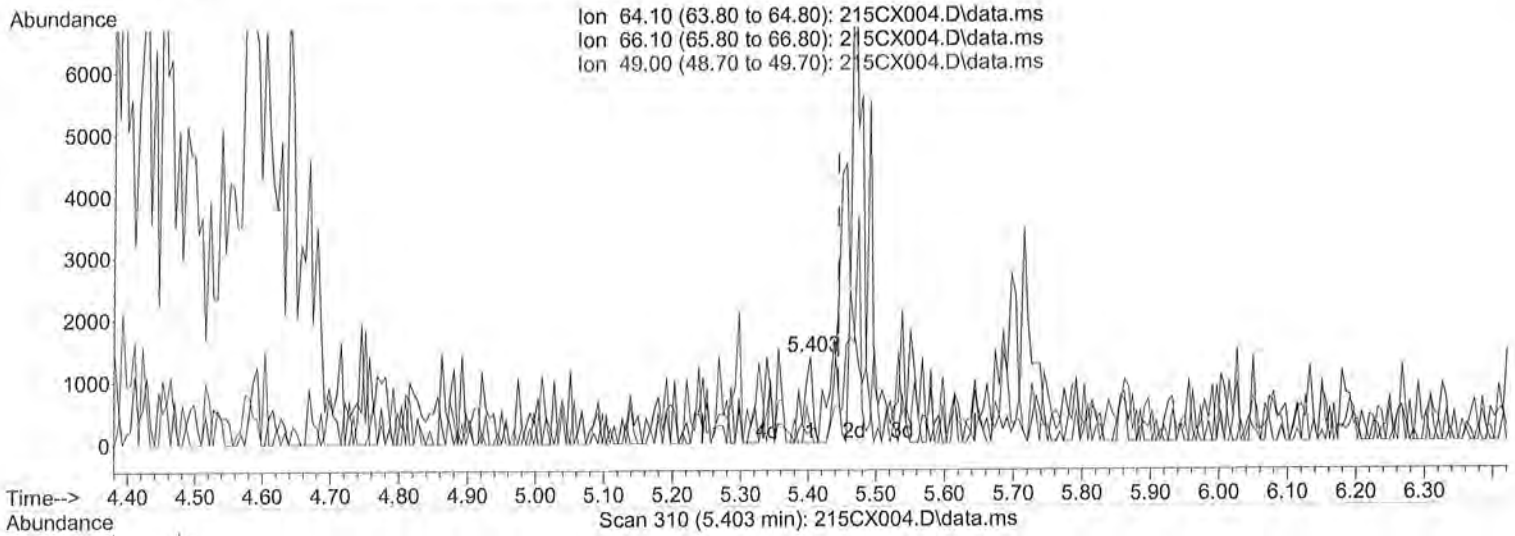
Review by/Date W 03/30/21

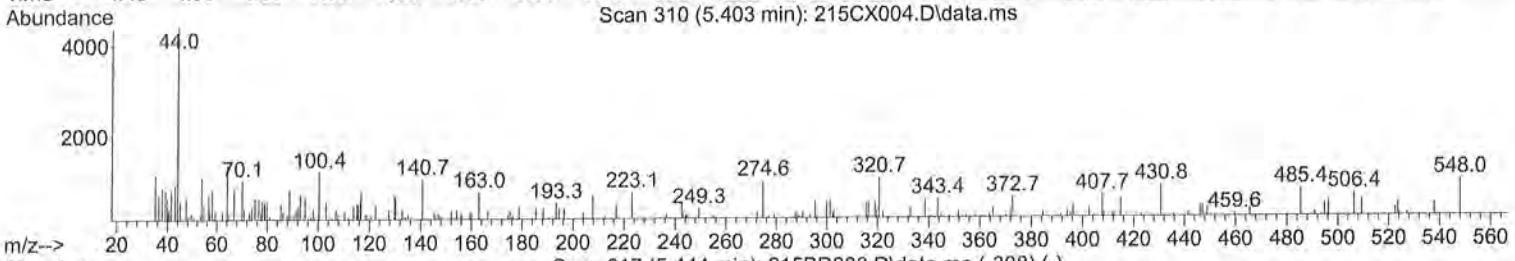
Review by/Date:

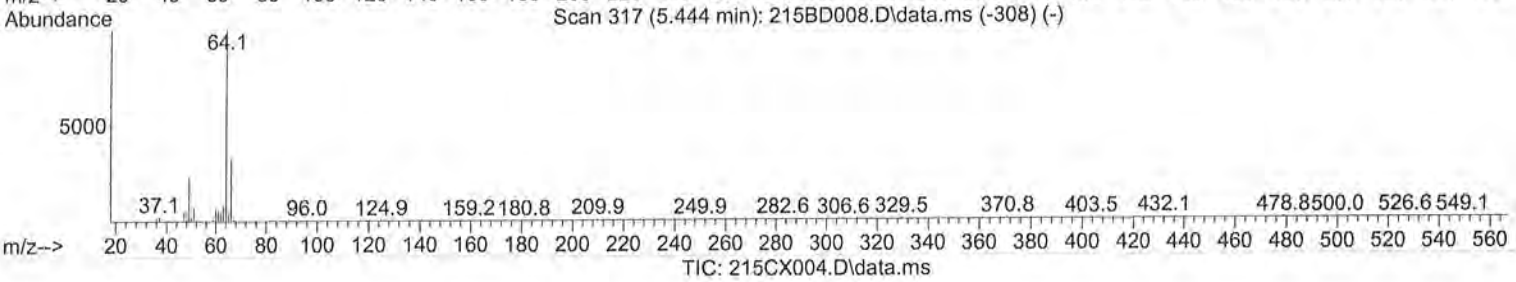
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(6) Chloroethane

5.403min (-0.041) 0.14 ug/L

response 1141

Ion	Exp%	Act%
64.10	100.00	100.00
66.10	30.80	149.26#
49.00	24.30	0.00#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] Reintegration

[ ]

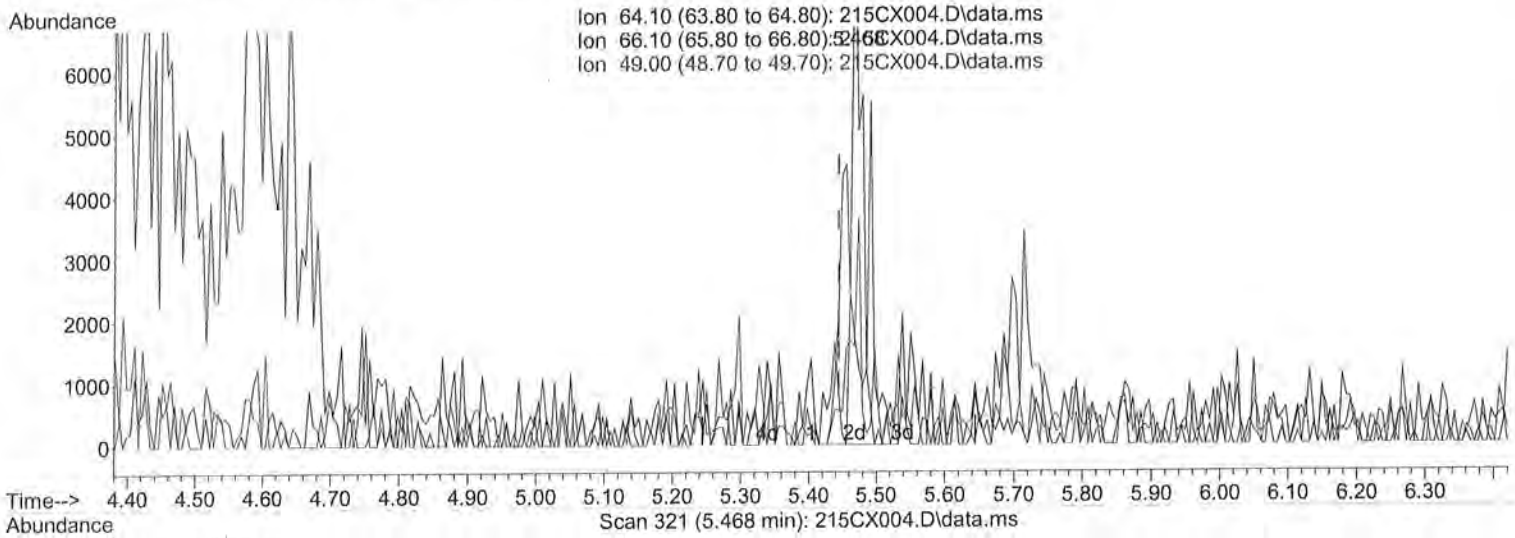
Review by/Date: W 03/30/21

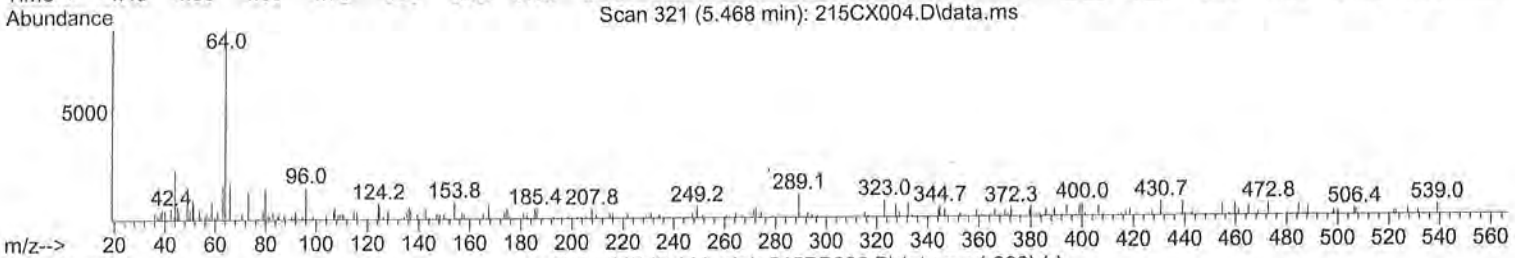
Review by/Date:

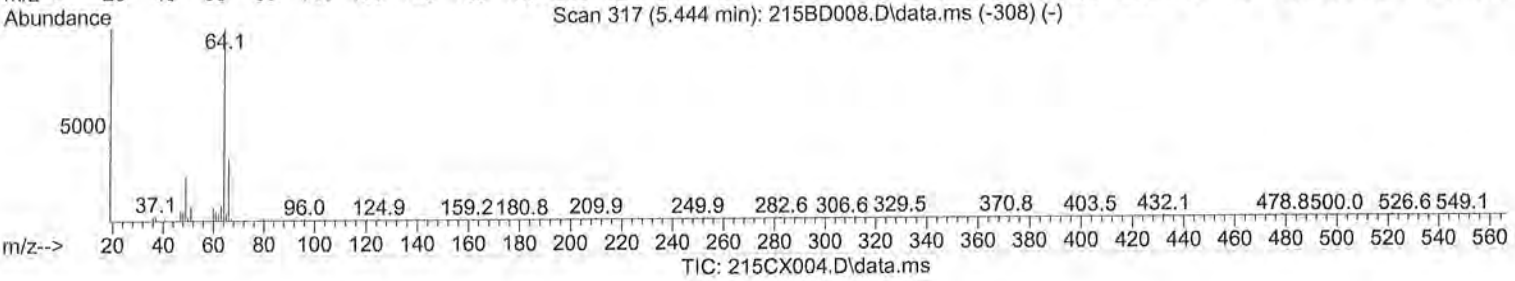
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(6) Chloroethane

5.468min (+ 0.024) 2.00 ug/L m

response 16014

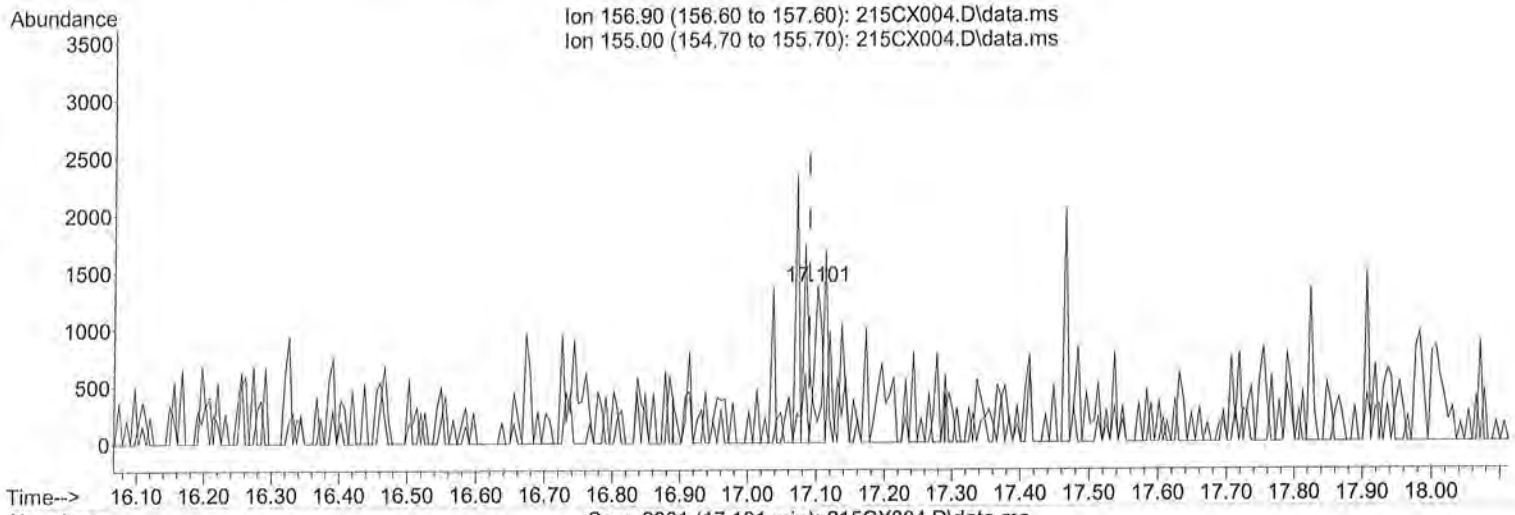
Ion	Exp%	Act%
64.10	100.00	100.00
66.10	30.80	10.63#
49.00	24.30	0.00#
0.00	0.00	0.00

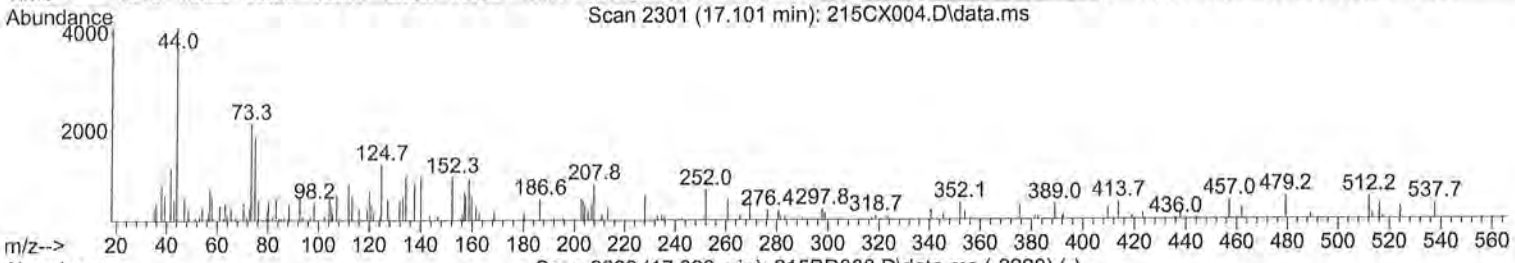
Select One:
[ ] Original Integration [X] Manual Integration
[ ] Reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[X] Incorrect peak selection/Peak not found
[ ] Ramp integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date W 03/30/21
Review by/Date:

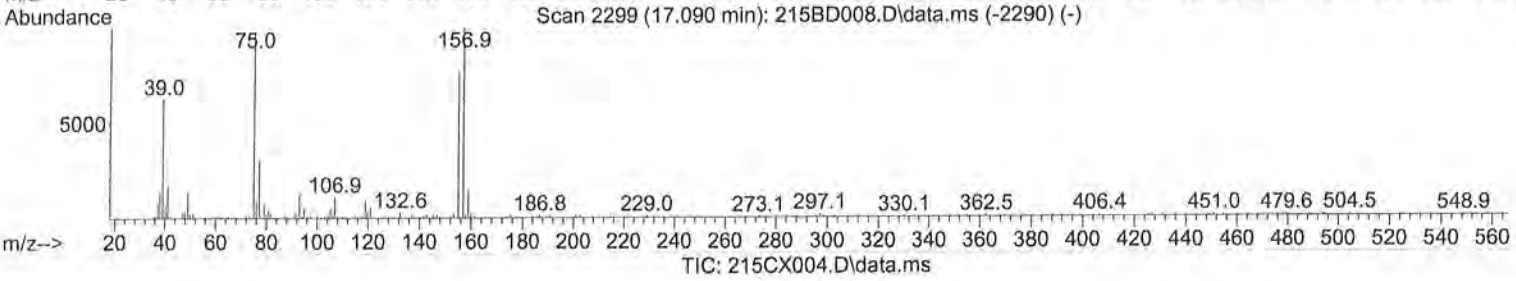
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(92) DBCP

17.101min (+ 0.012) 0.68 ug/L

response 1405

Ion	Exp%	Act%
156.90	100.00	100.00
155.00	81.20	130.53#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

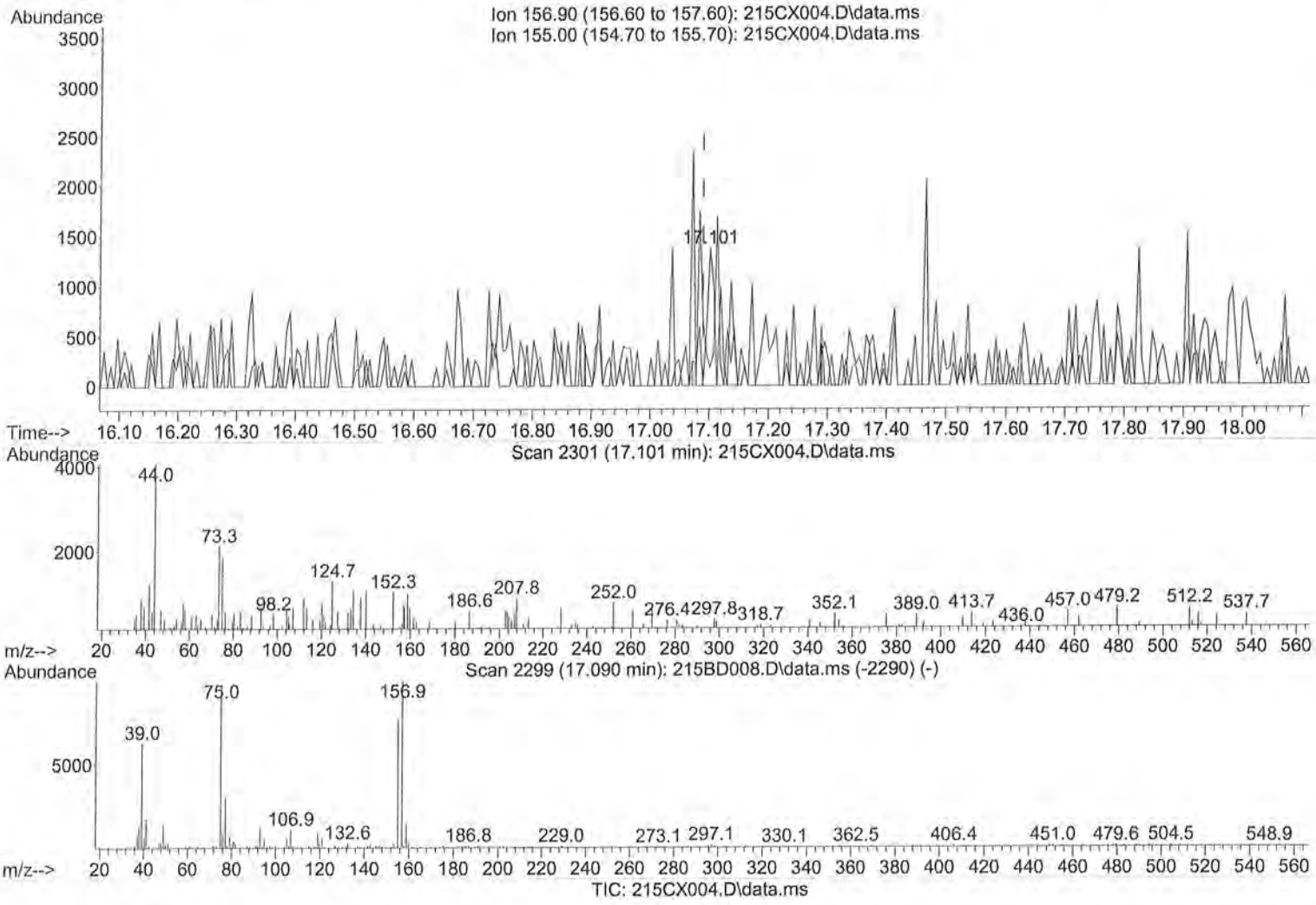
Review by/Date W 03/30/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



(92) DBCP

17.101min (+ 0.012) 1.09 ug/L m

response 2263

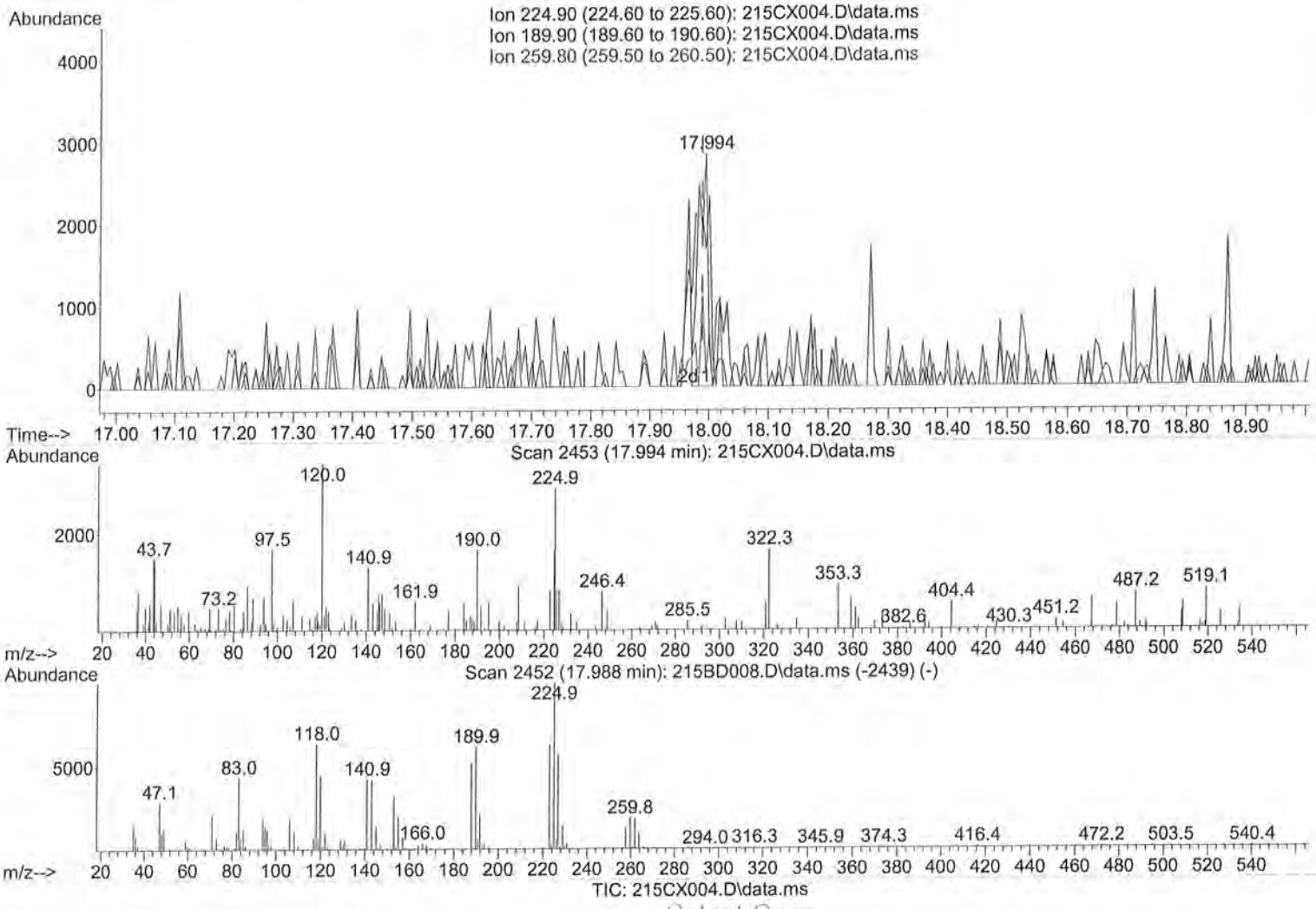
Ion	Exp%	Act%
156.90	100.00	100.00
155.00	81.20	81.04
0.00	0.00	0.00
0.00	0.00	0.00

Select one:
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[X] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ENCO reintegration
[ ] Other:
Review by/Date KW 03/30/21
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



(93) Hexachlorobutadiene

17.994min (+ 0.006) 0.79 ug/L

response 3111

Ion	Exp%	Act%
224.90	100.00	100.00
189.90	61.90	159.69#
259.80	25.30	41.56#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

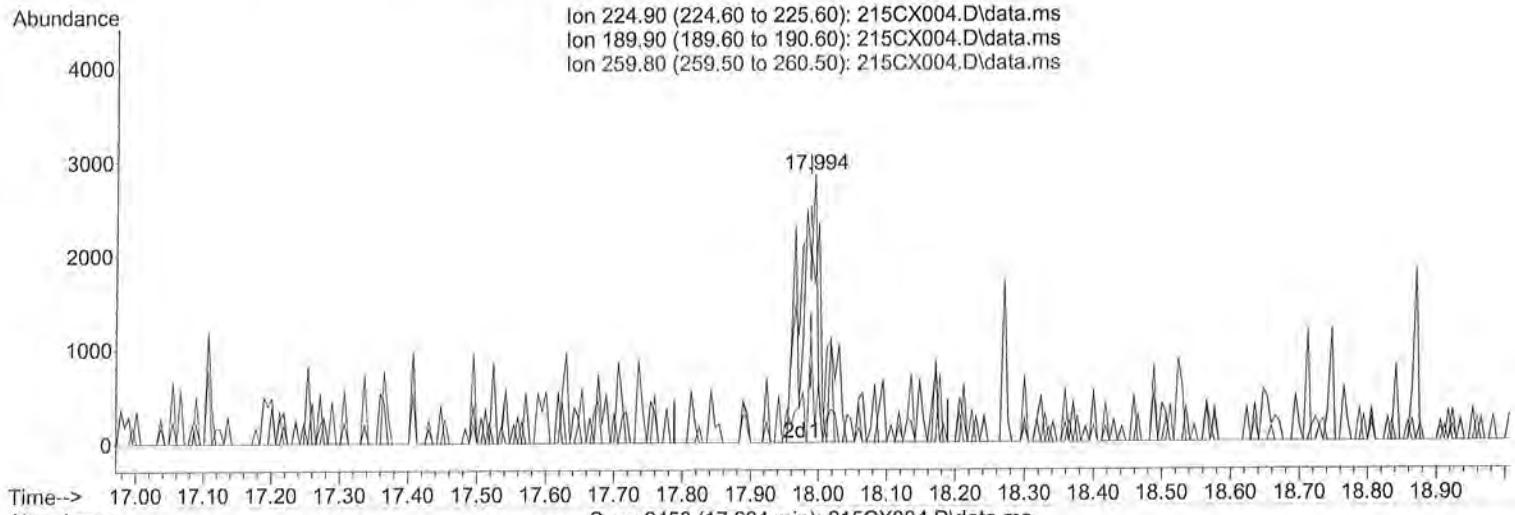
Review by/Date KW 03/30/21

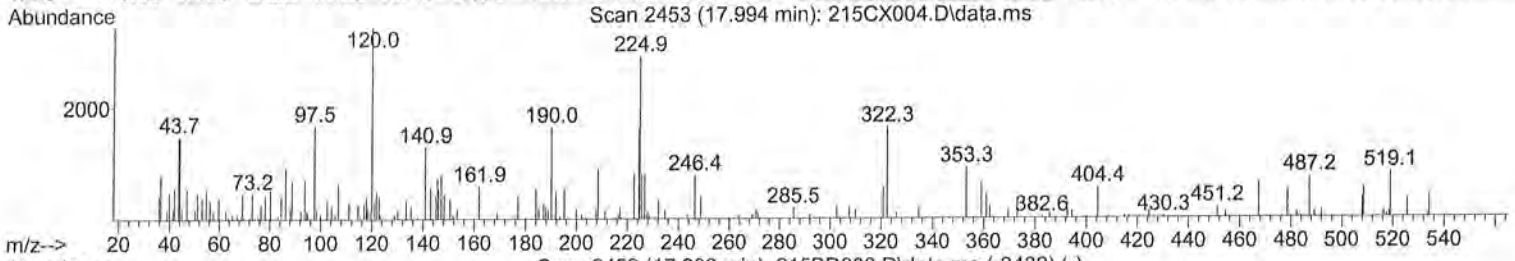
Review by/Date:

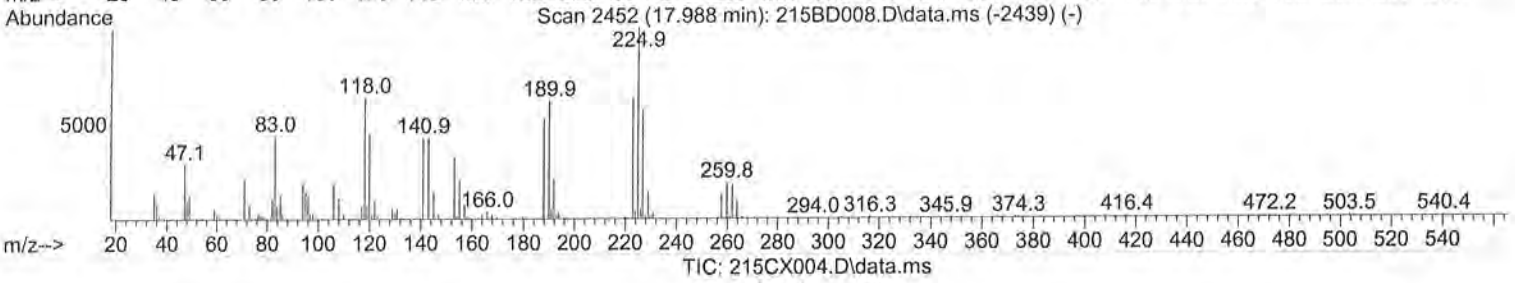
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(93) Hexachlorobutadiene

17.994min (+ 0.006) 1.19 ug/L m

response 4704

Ion	Exp%	Act%
224.90	100.00	100.00
189.90	61.90	105.61#
259.80	25.30	27.49
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

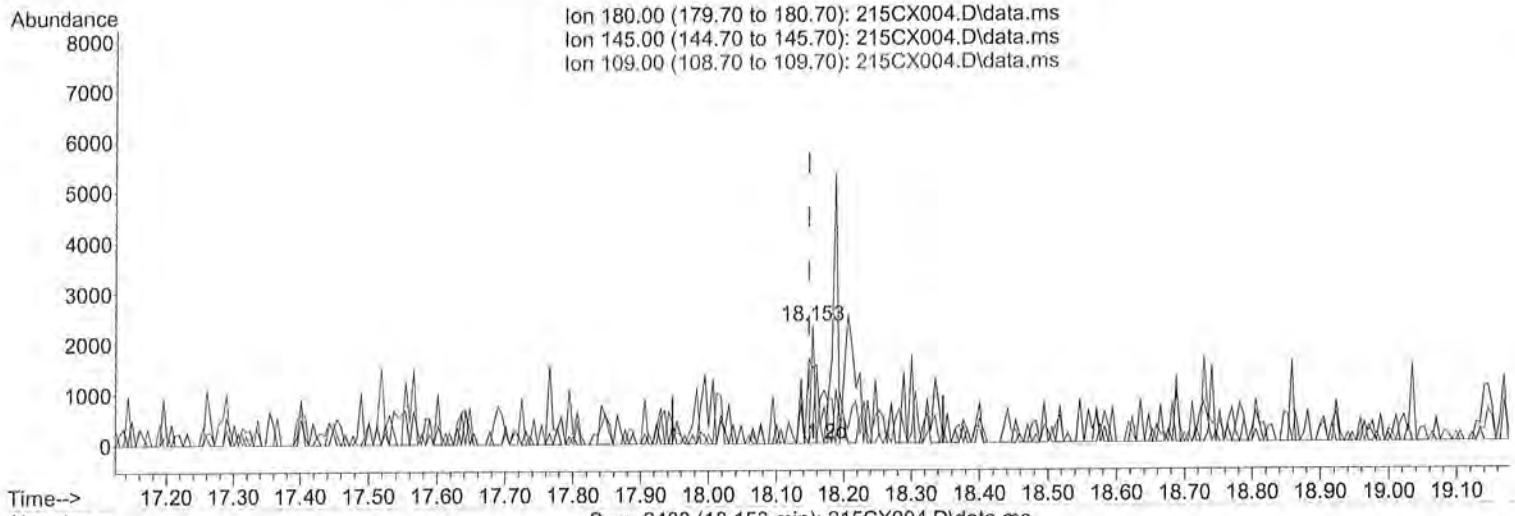
Review by/Date: W 03/30/21

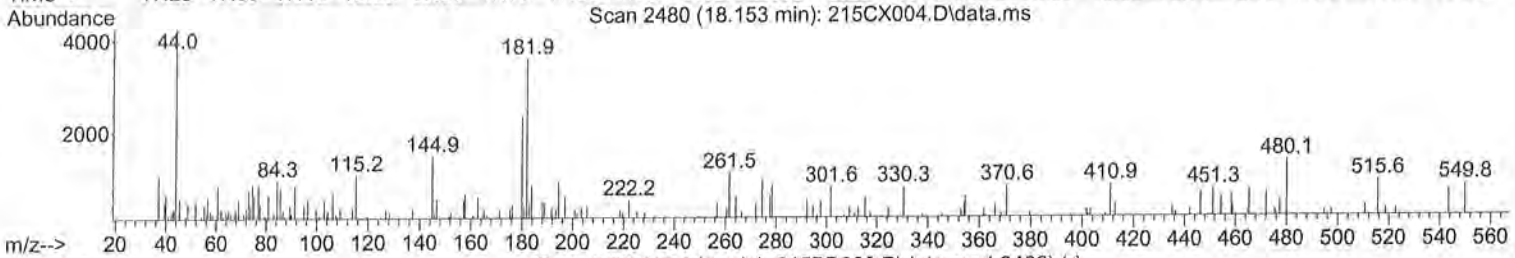
Review by/Date:

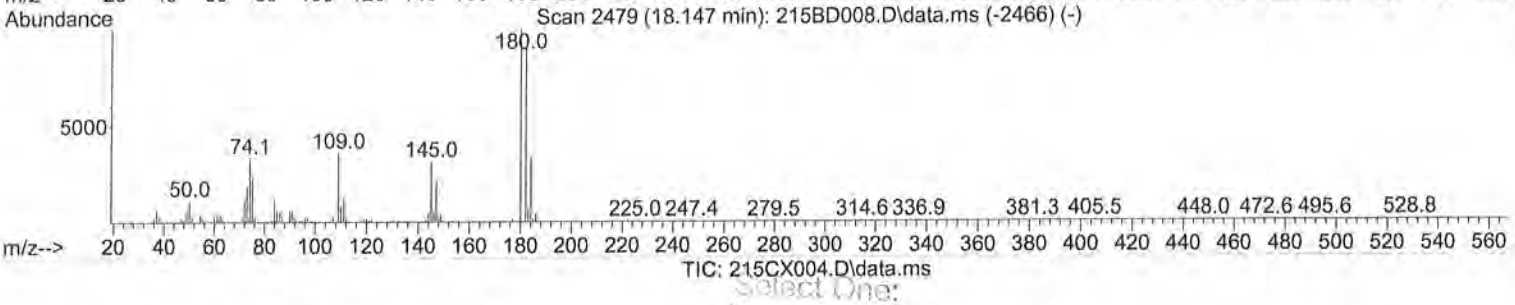
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(94) 1,2,4-Trichlorobenzene

18.153min (+ 0.006) 0.22 ug/L

response 2074

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	38.70	120.30#
109.00	35.50	0.00#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

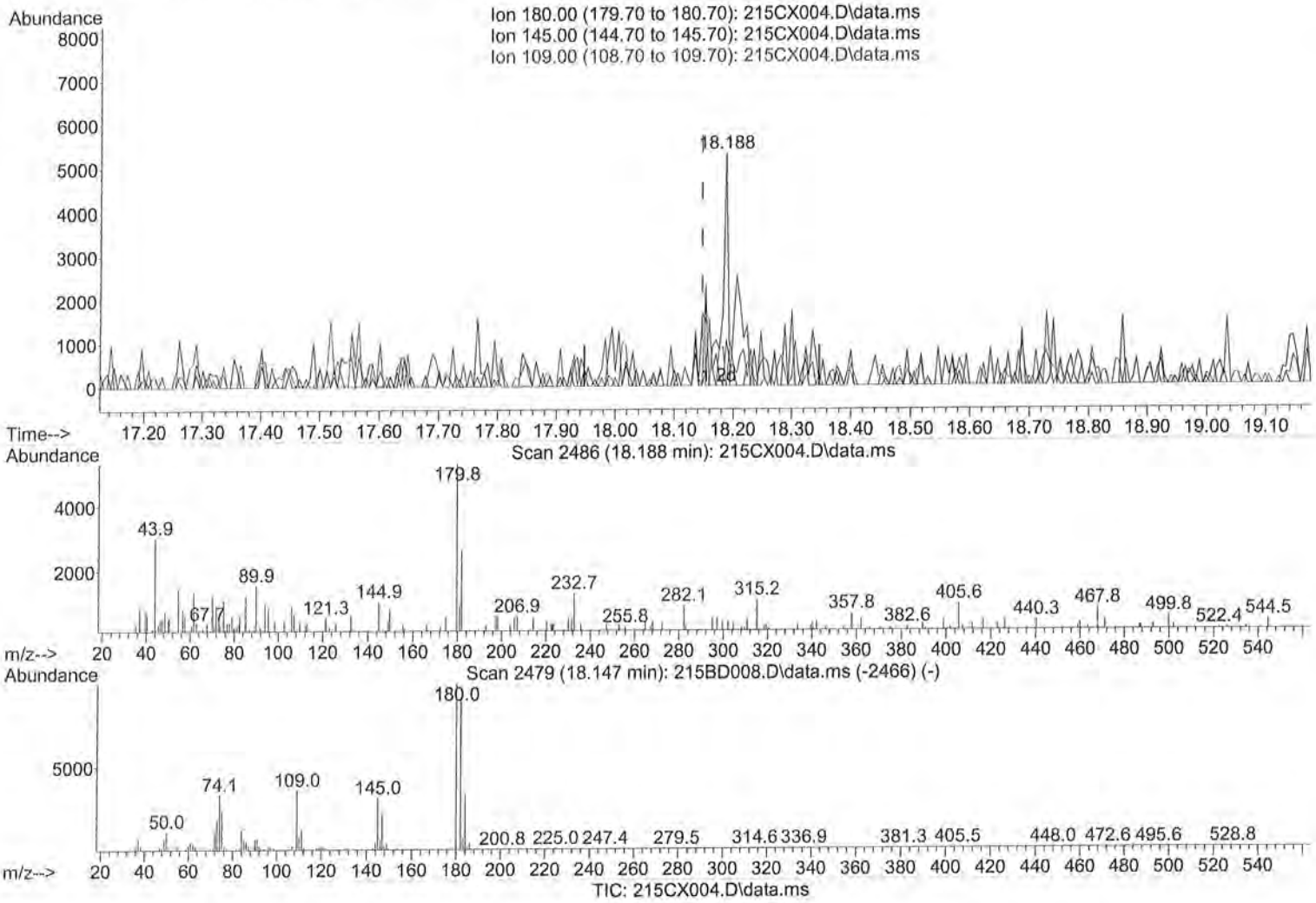
Review by/Date 4J 03/30/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



(94) 1,2,4-Trichlorobenzene

18.188min (+ 0.041) 0.70 ug/L m

response 6744

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	38.70	37.00
109.00	35.50	0.00#
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

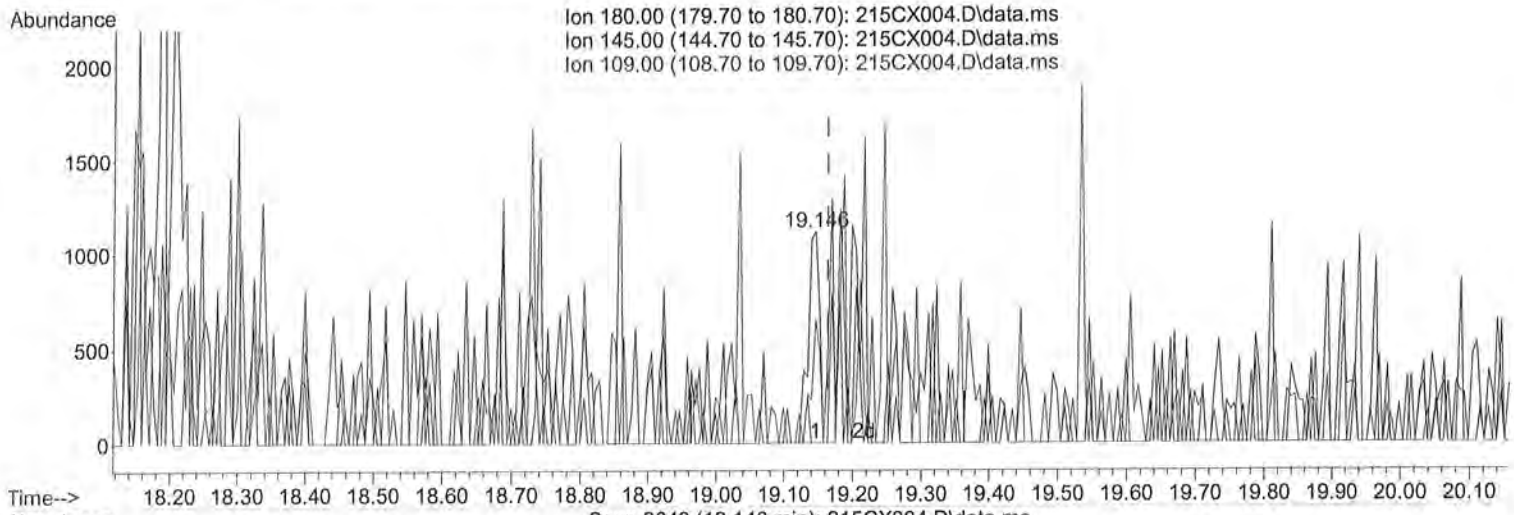
Review by/Date W 03/30/21

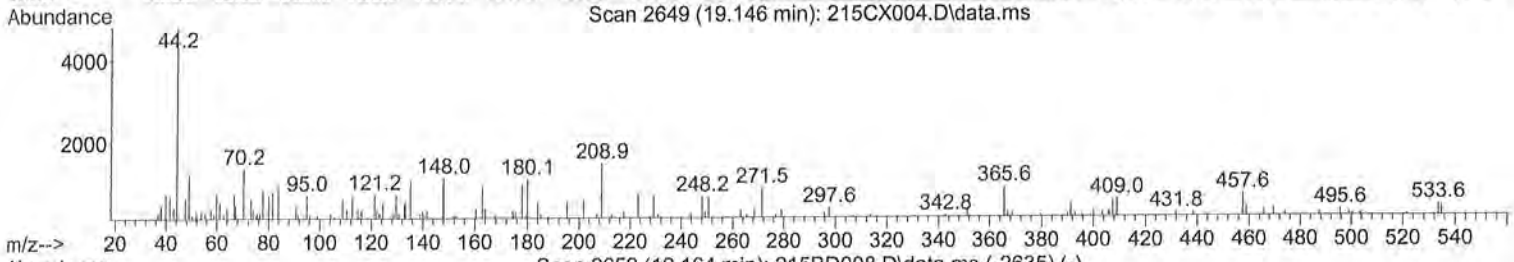
Review by/Date:

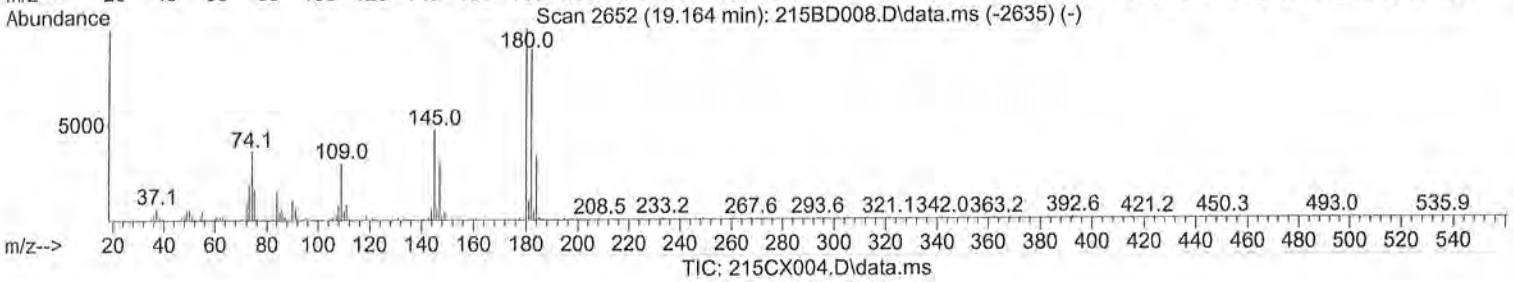
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(96) 1,2,3-Trichlorobenzene

19.146min (-0.018) 0.22 ug/L

response 1266

Ion	Exp%	Act%
180.00	100.00	100.00
145.00	40.60	0.00#
109.00	33.80	0.00#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

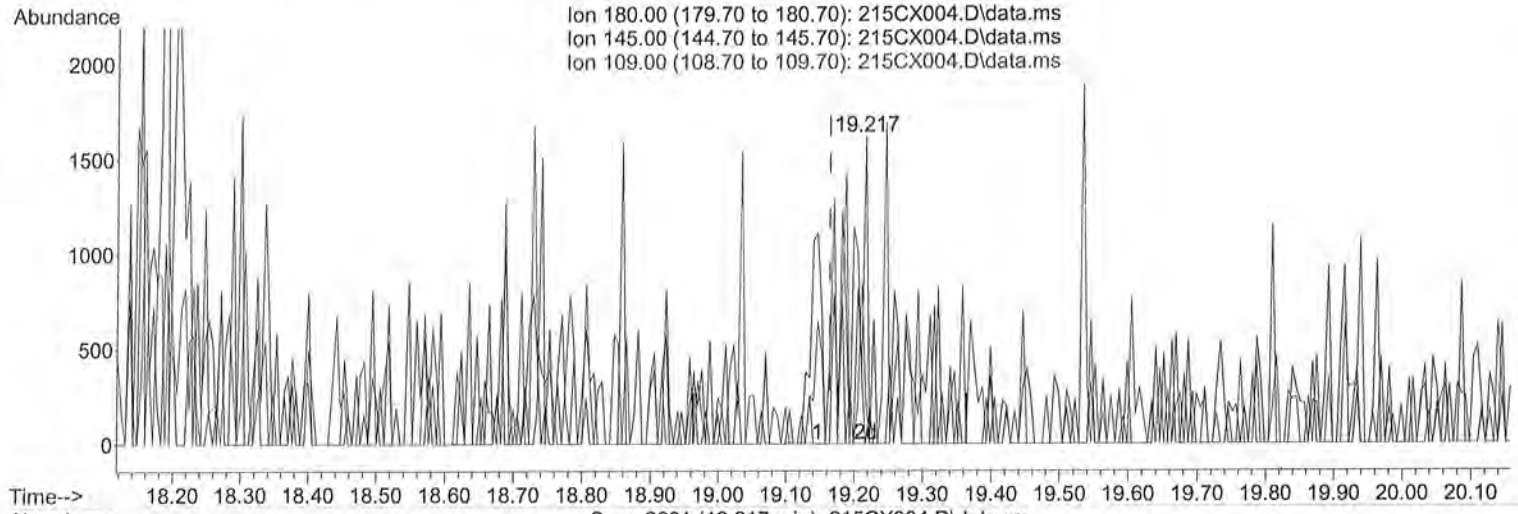
Review by/Date W 03/30/21

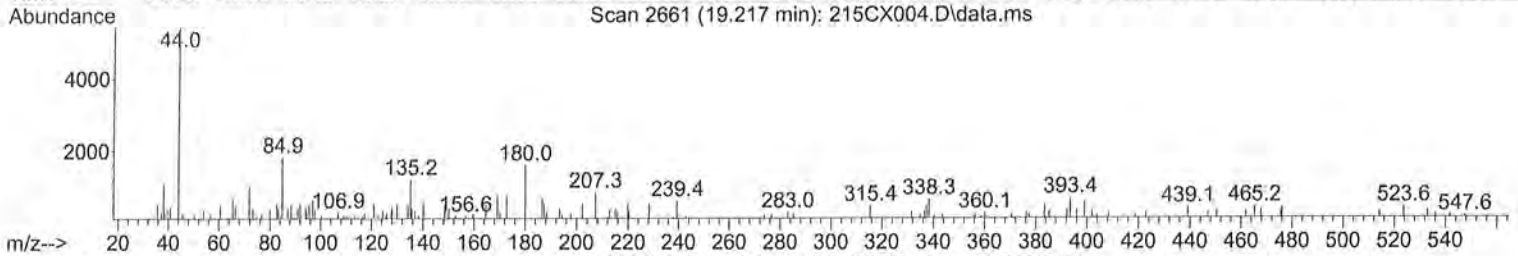
Review by/Date:

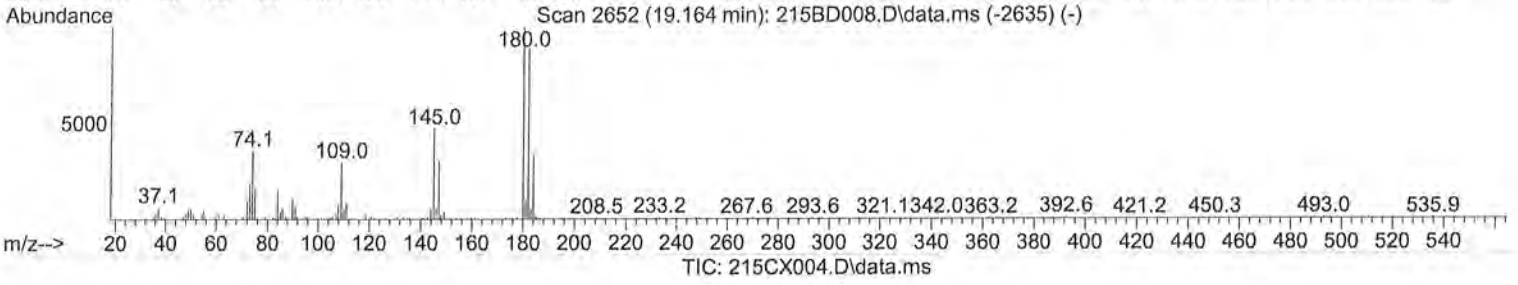
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX004.D\data.ms

(96) 1,2,3-Trichlorobenzene

19.217min (+ 0.053) 0.71 ug/L m

response 4028

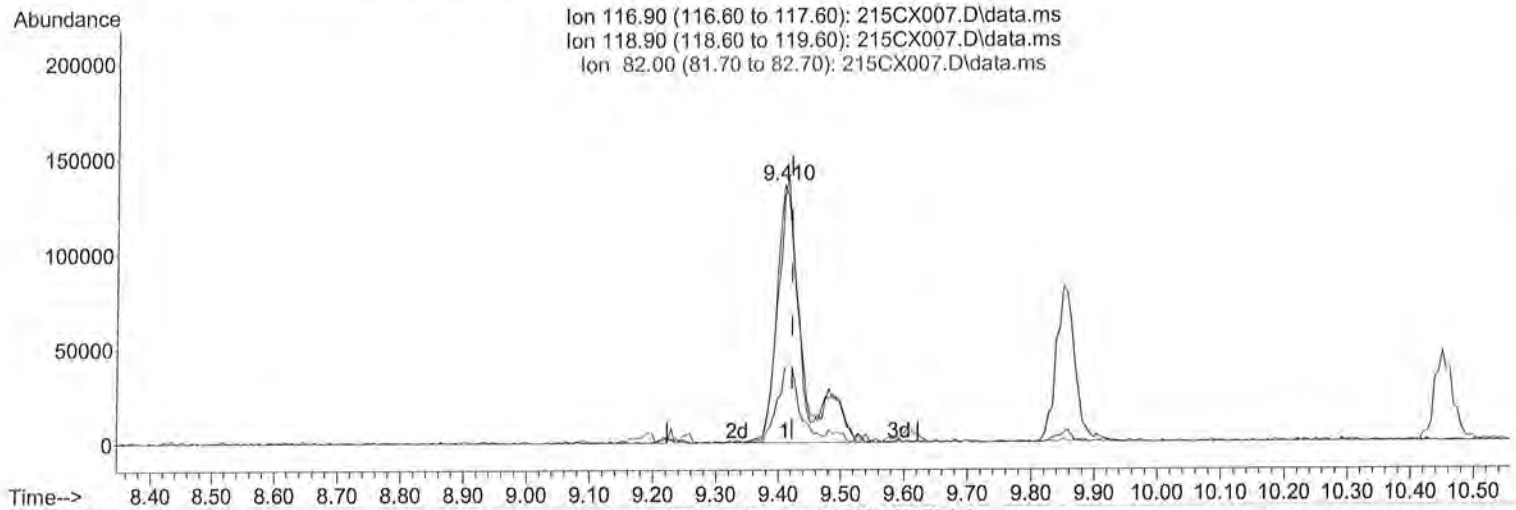
Ion	Exp%	Act%
180.00	100.00	100.00
145.00	40.60	0.00#
109.00	33.80	0.00#
0.00	0.00	0.00

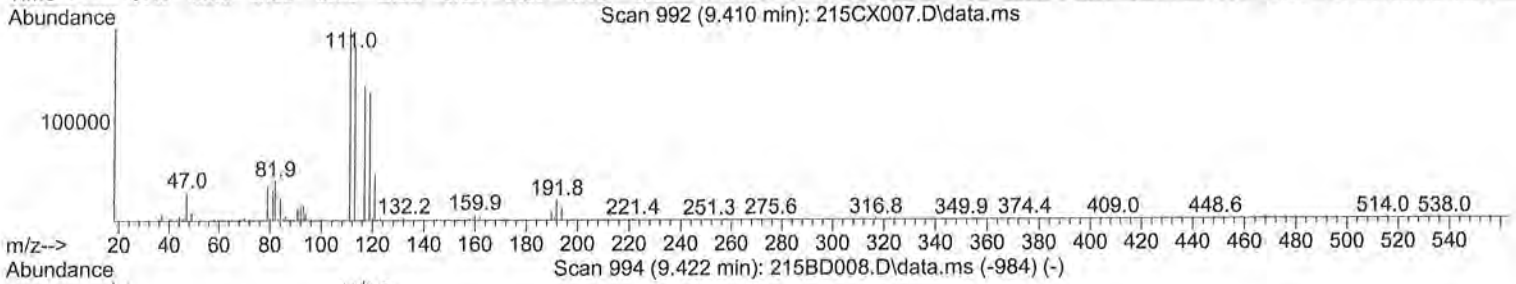
Select one:
[ ] Original Integration [ ] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[ ] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date: WG/30/21
Review by/Date:

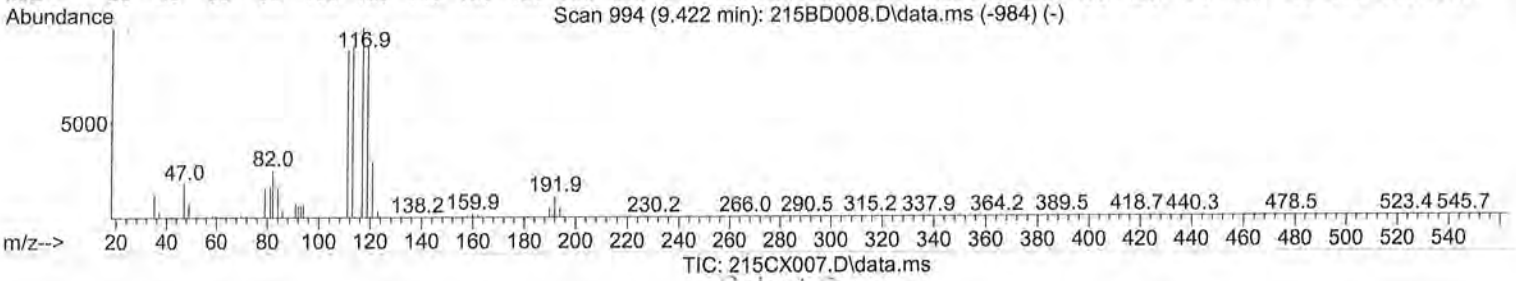
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX007.D
Acq On : 29 Mar 2021 10:59 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 11:52:17 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX007.D\data.ms

(40) Carbon Tetrachloride

9.410min (-0.012) 25.97 ug/L

response 390386

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	81.03#
82.00	26.80	29.13
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

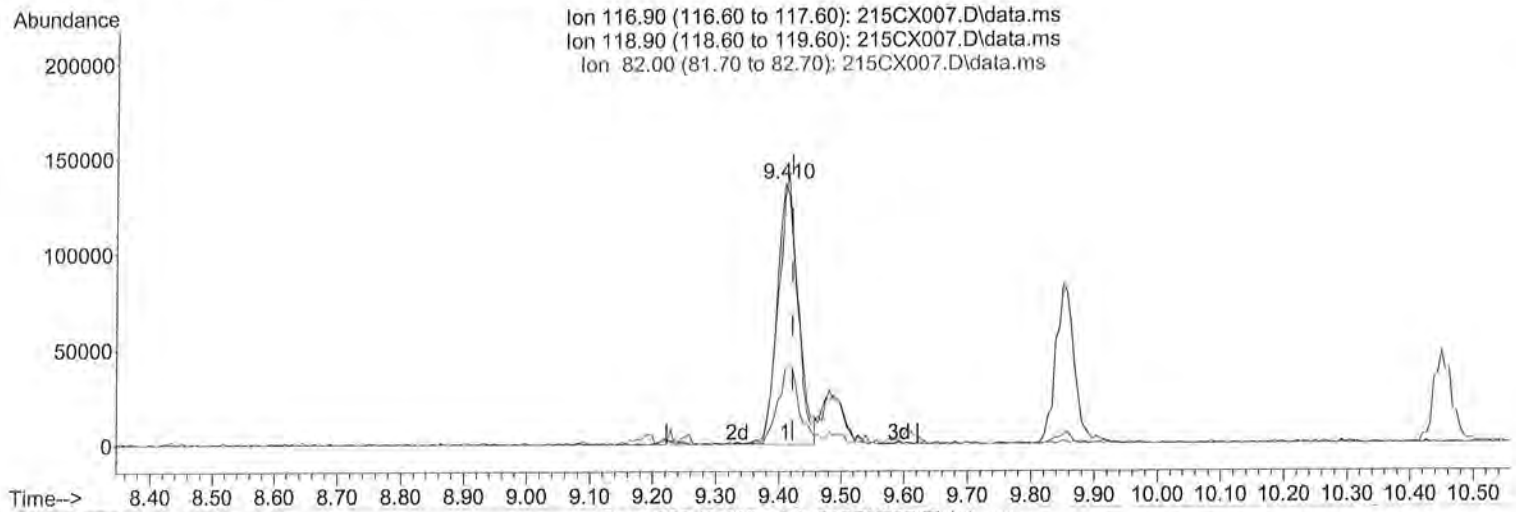
Review by/Date: 03/30/21

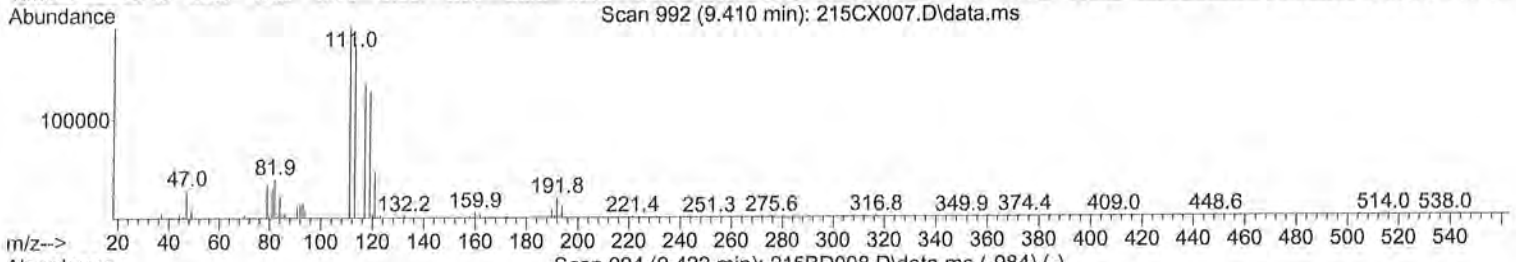
Review by/Date:

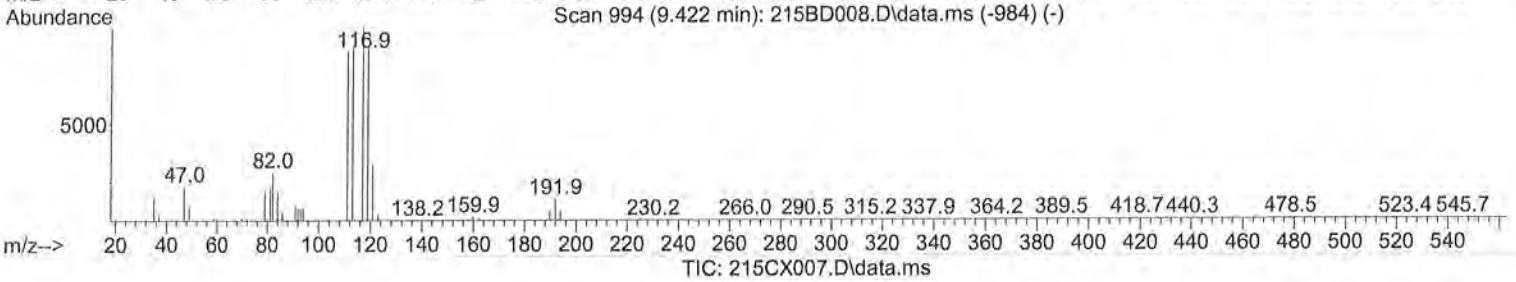
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX007.D
Acq On : 29 Mar 2021 10:59 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 11:52:17 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX007.D\data.ms

(40) Carbon Tetrachloride

9.410min (-0.012) 21.44 ug/L m

response 322273

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	98.16
82.00	26.80	35.29#
0.00	0.00	0.00

Check One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

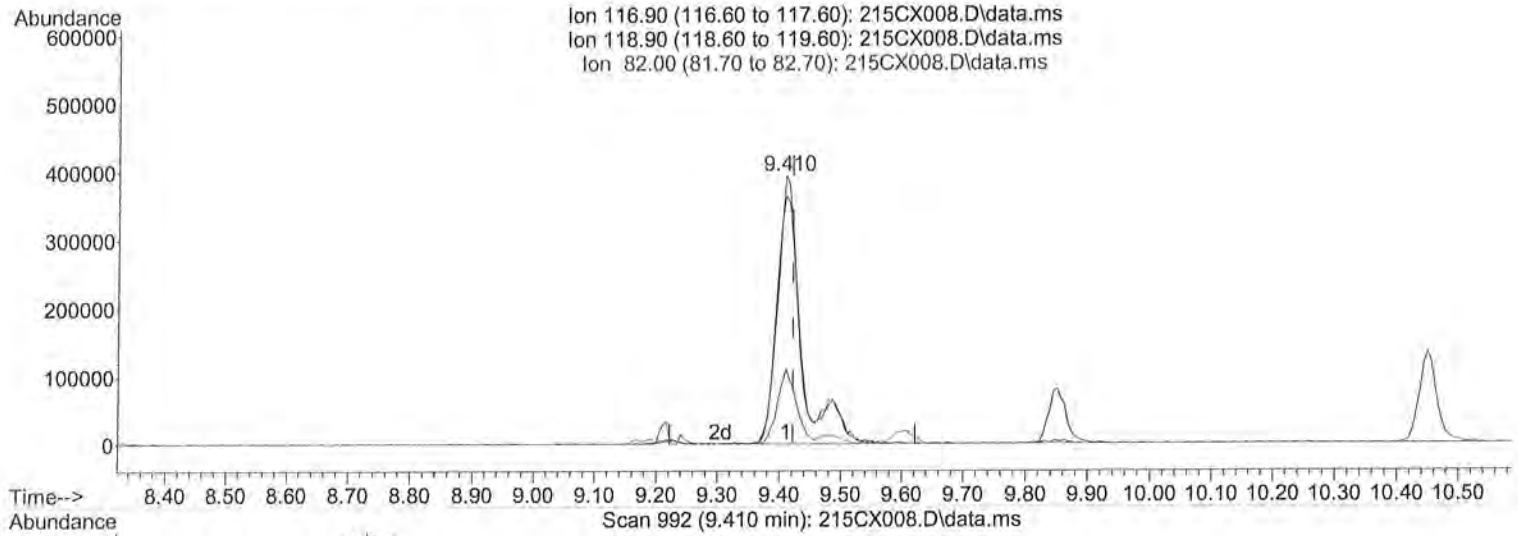
Reviewed by/Date W 03/30/21

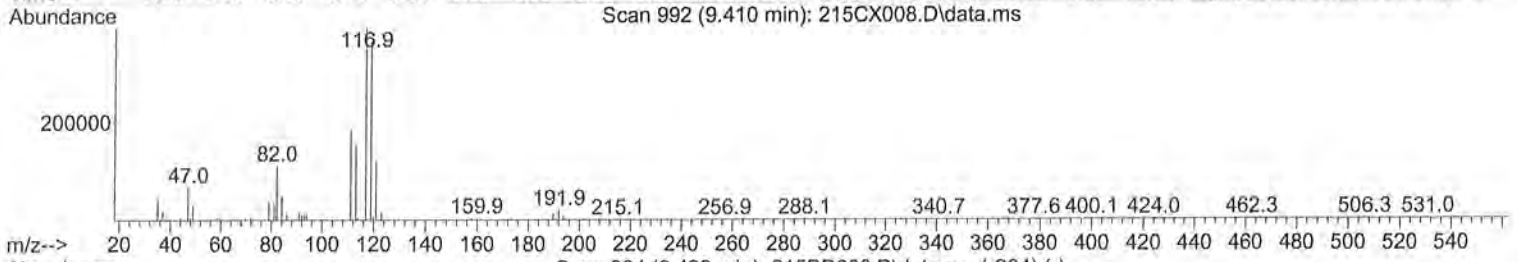
Comments:

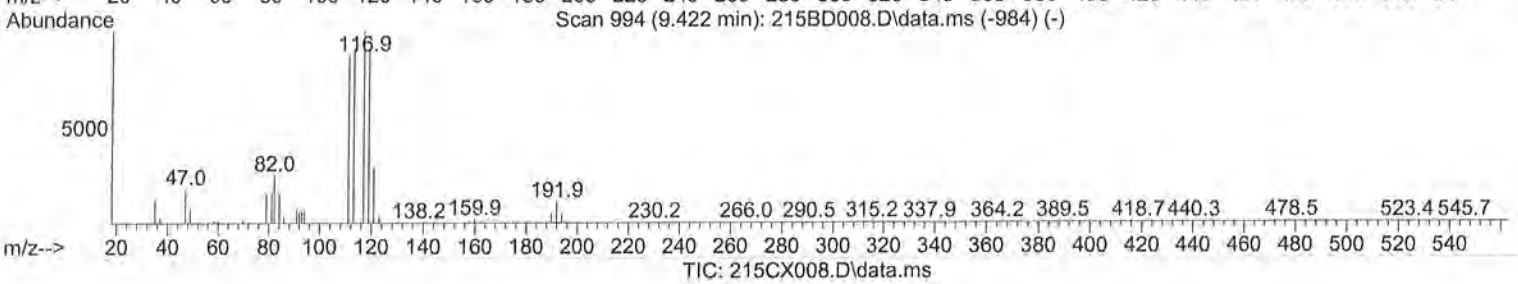
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX008.D
Acq On : 29 Mar 2021 11:27 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 11:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX008.D\data.ms

(40) Carbon Tetrachloride

9.410min (-0.012) 66.83 ug/L

response 1065661

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	96.22
82.00	26.80	25.30
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] Other integration

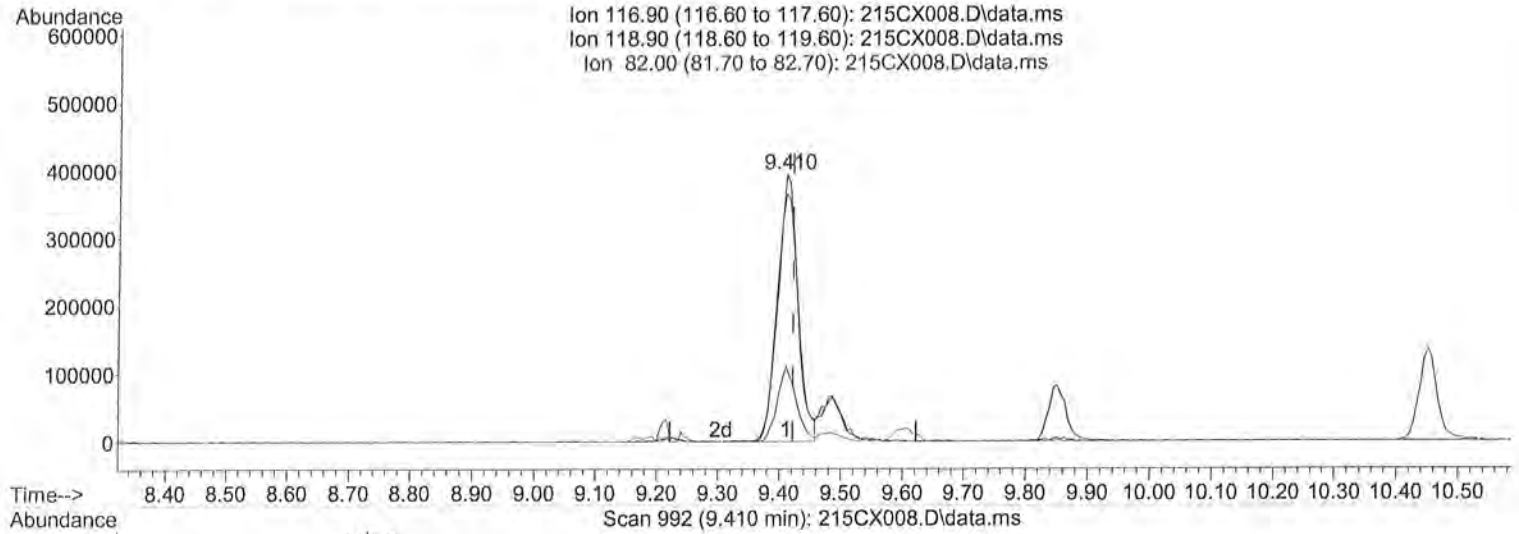
Review by/Date: W 03/30/21

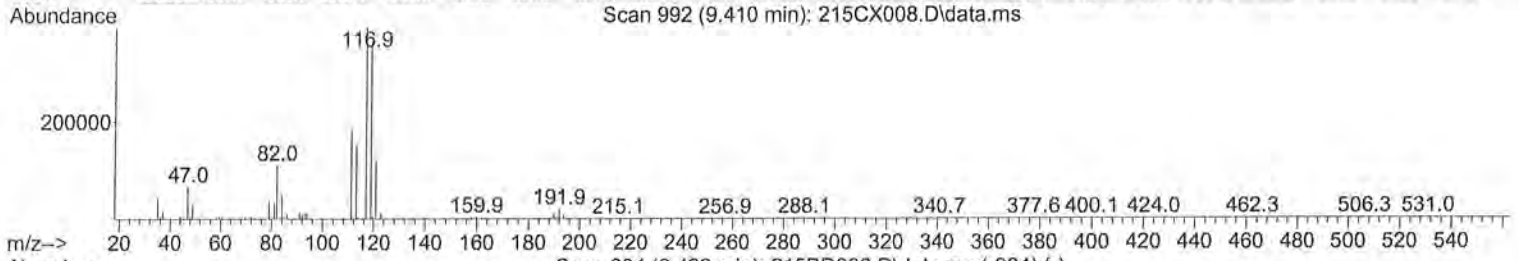
Review by/Date:

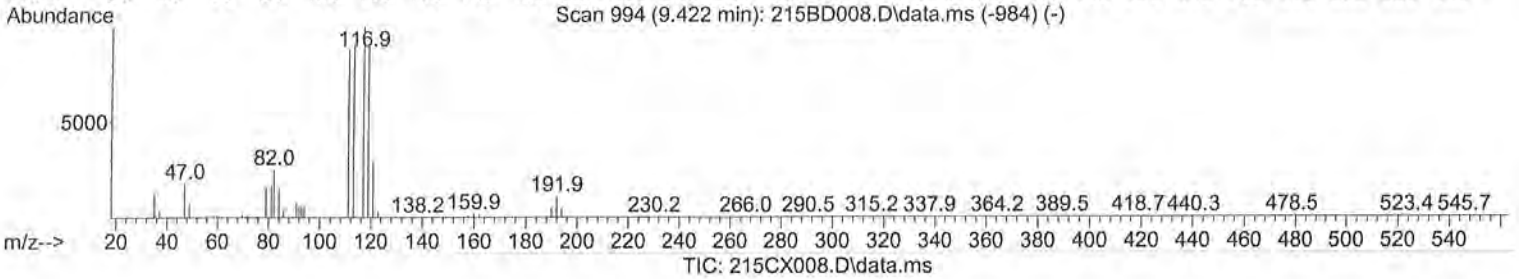
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX008.D
Acq On : 29 Mar 2021 11:27 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 11:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX008.D\data.ms

(40) Carbon Tetrachloride

9.410min (-0.012) 56.43 ug/L m

response 899858

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	113.95
82.00	26.80	29.97
0.00	0.00	0.00

Select One:

[ ] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

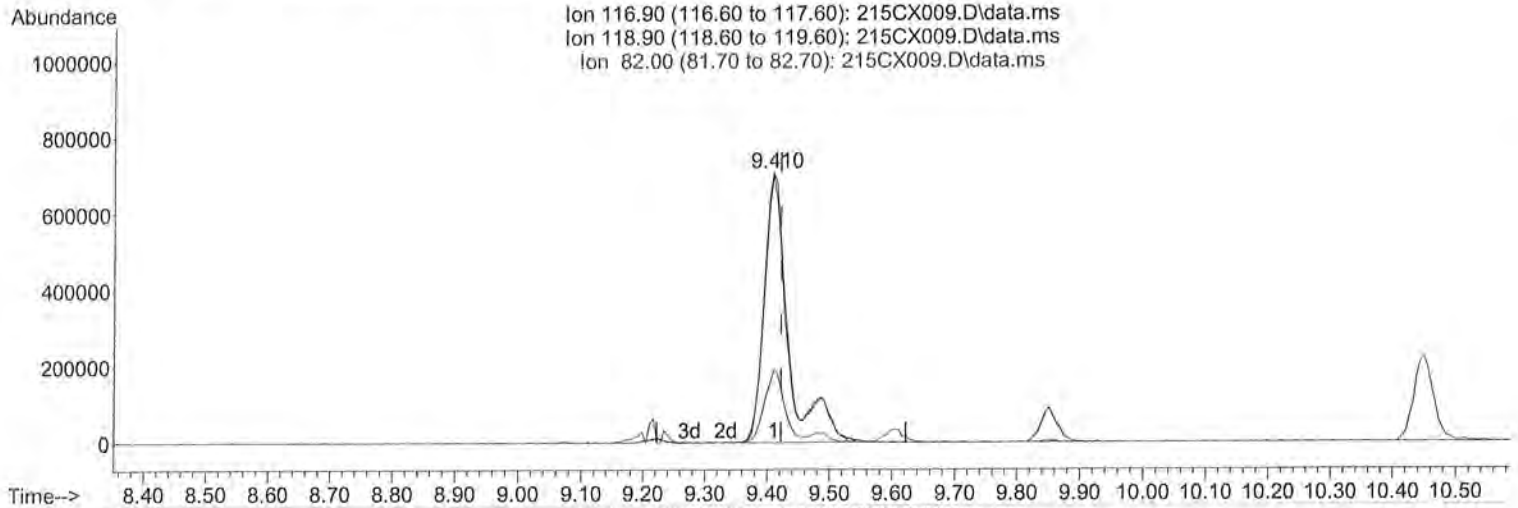
Review by/Date KW 03/29/21

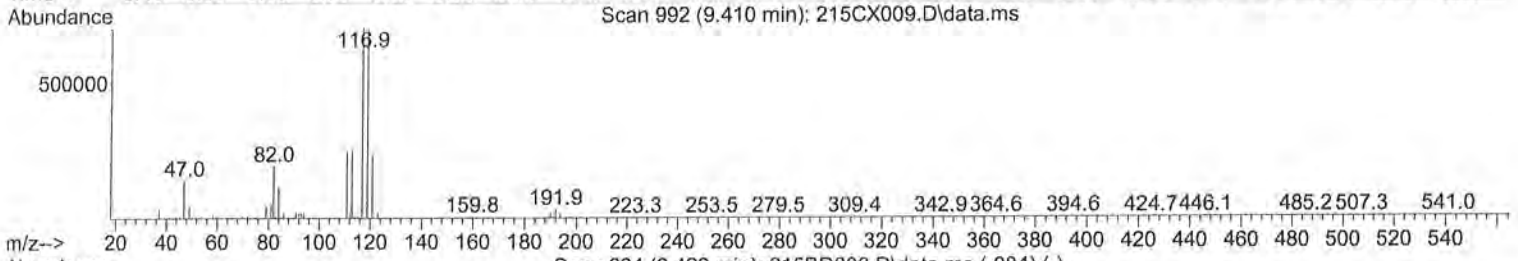
Review by/Date: KW 03/30/21

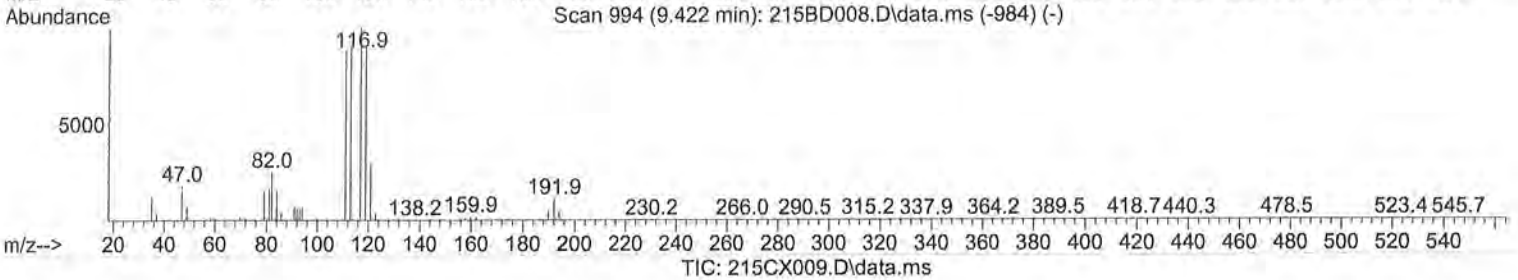
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX009.D
Acq On : 29 Mar 2021 11:55 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 12:45:44 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX009.D\data.ms

(40) Carbon Tetrachloride

9.410min (-0.012) 117.16 ug/L

response 1935922

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	95.72
82.00	26.80	24.98
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

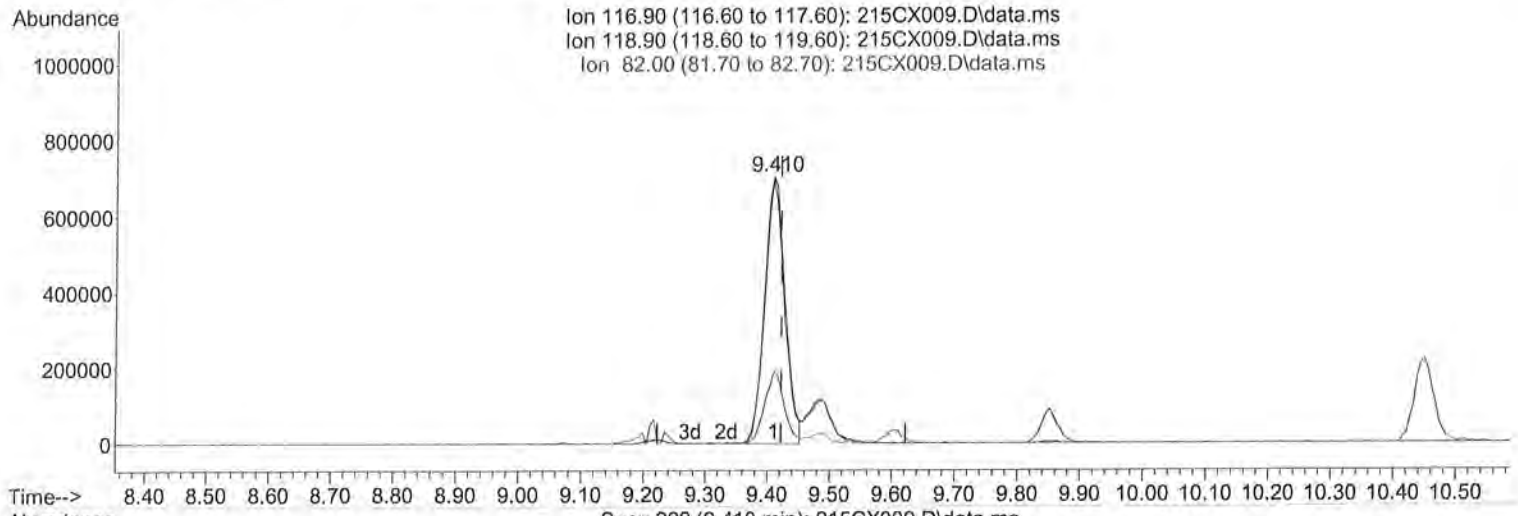
Review by/Date: 10 03/30/21

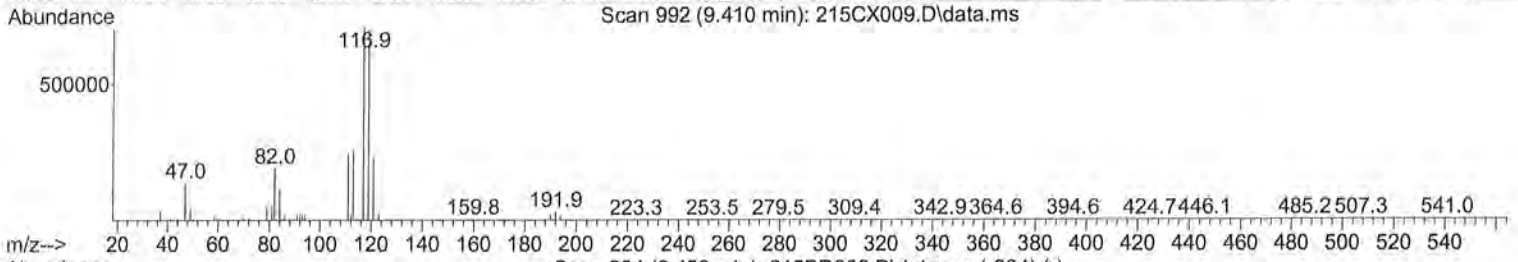
Review by/Date:

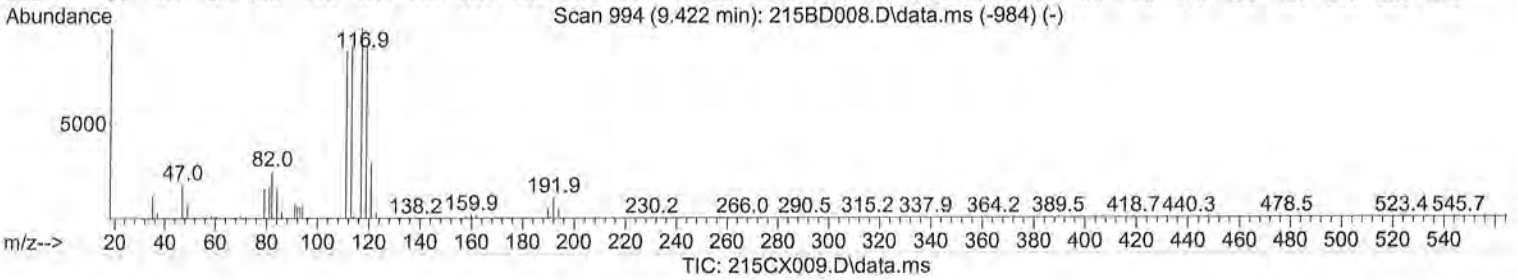
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX009.D
Acq On : 29 Mar 2021 11:55 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 12:45:44 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX009.D\data.ms

(40) Carbon Tetrachloride

9.410min (-0.012) 98.36 ug/L m

response 1625229

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	114.02
82.00	26.80	29.75
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] RT reintegration

[ ] Other:

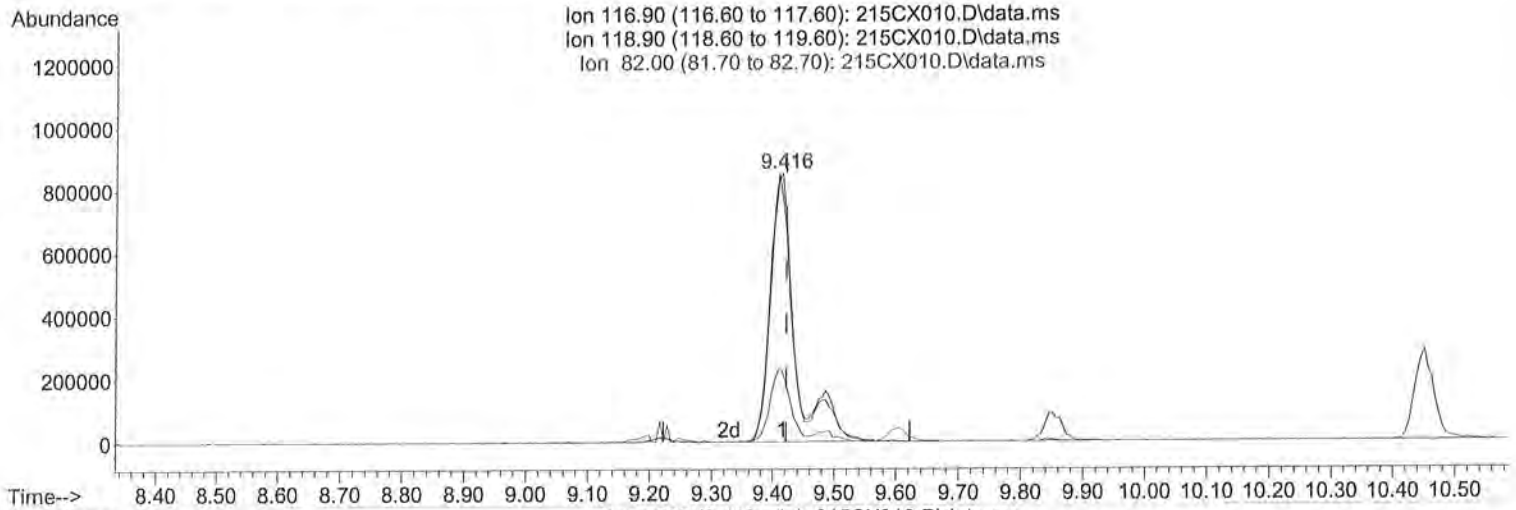
Review by/Date: 10 04/30/21

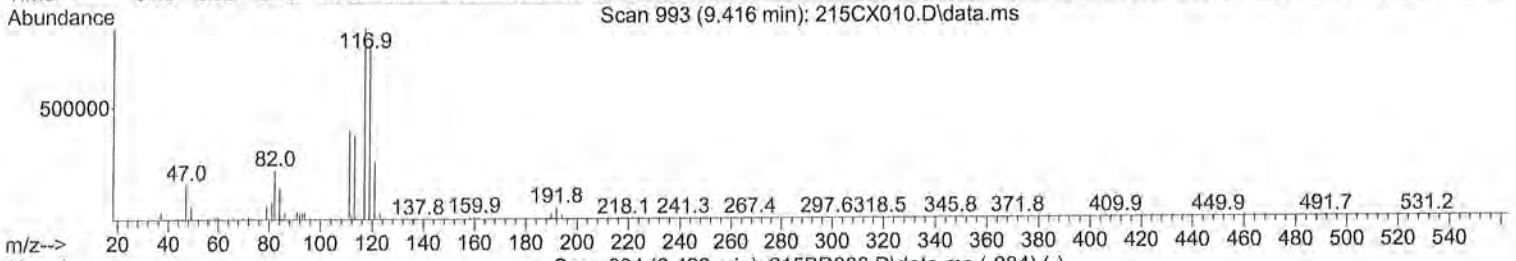
Review by/Date:

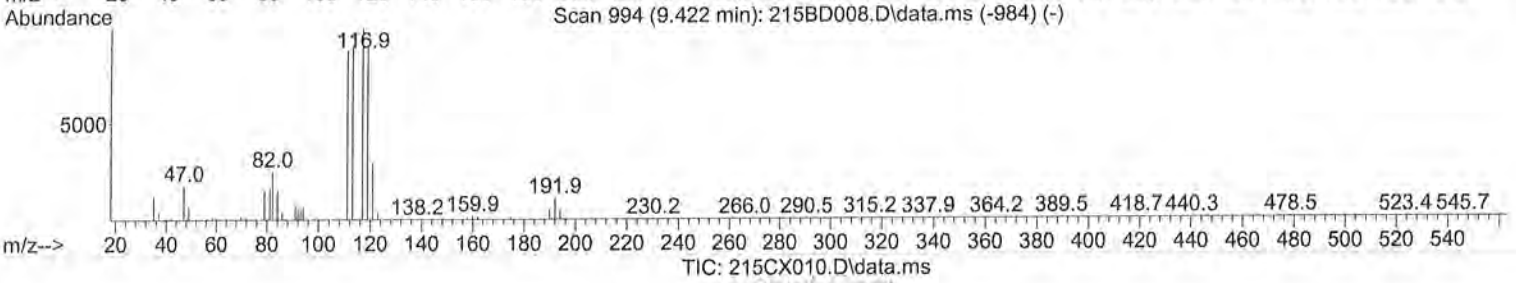
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX010.D
Acq On : 29 Mar 2021 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 12:47:49 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration







TIC: 215CX010.D\data.ms

(40) Carbon Tetrachloride

9.416min (-0.006) 139.17 ug/L

response 2375335

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	94.84
82.00	26.80	25.95
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

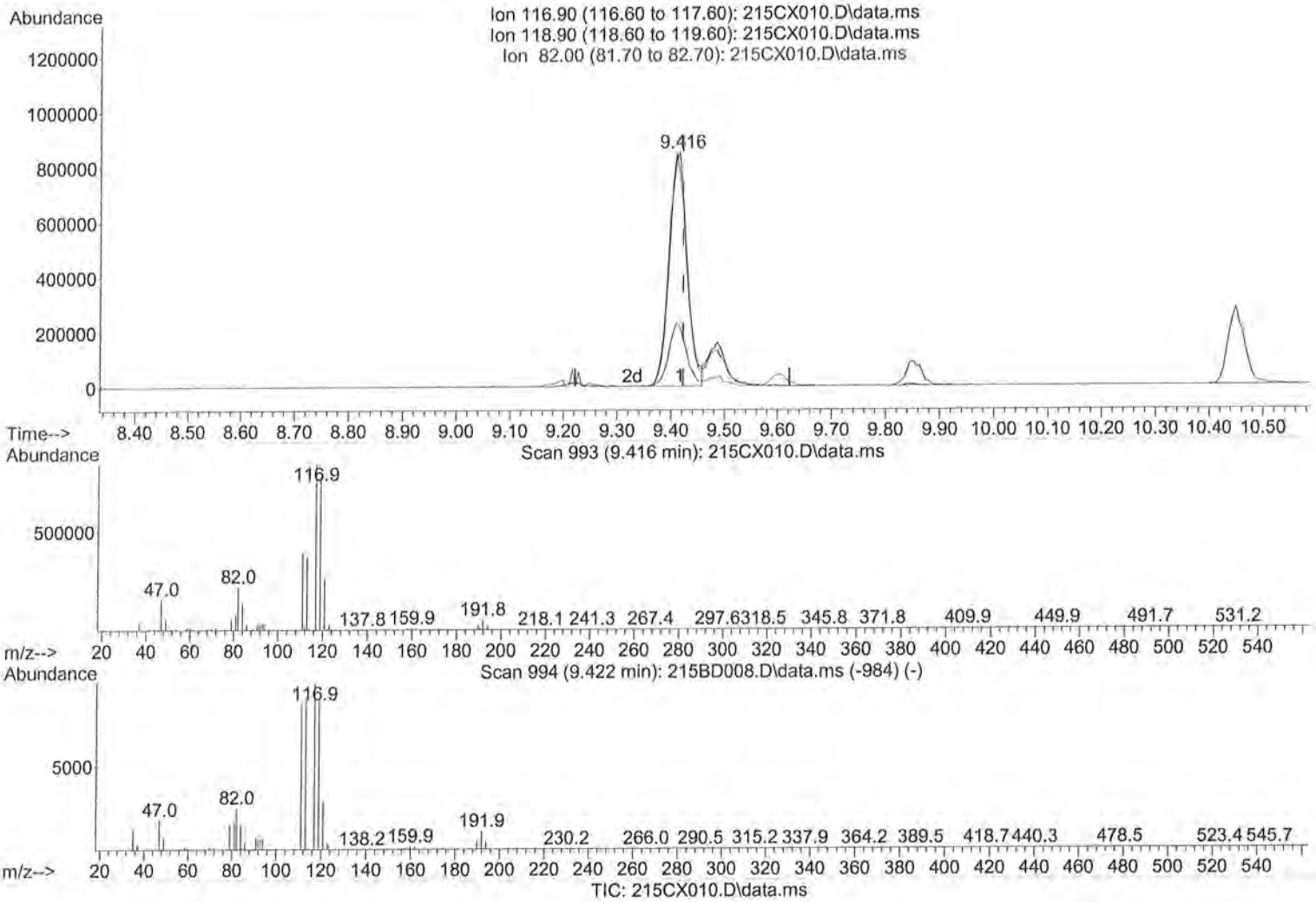
Review by/Date: W 03/30/21

Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX010.D
Acq On : 29 Mar 2021 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 12:47:49 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



(40) Carbon Tetrachloride

9.416min (-0.006) 117.00 ug/L m

response 1996926

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	113.40	112.82
82.00	26.80	30.87
0.00	0.00	0.00

Select One:
[ ] Original Inte [illegible] Manual Integration
Select reason [illegible] Integration:
[X] Poor integ [illegible] (tailing, baseline selection)
[ ] Incorrect [illegible] selection/Peak not found
[ ] Hump in [illegible]
[ ] Baselin [illegible] for split peaks
[ ] ISTD r [illegible]
[ ] Other:
Review by/Date W 03/30/21
Review by/Date:

Sequence Name: C:\msdchem\1\sequence\215CX.s
Comment:
Operator: KKW
Data Path: C:\msdchem\1\DATA\032921\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample Name/Misc Info			
1)	Sample	1	215CX001	8260S	TUN1
2)	Sample	1	215CX002	8260S	TUN1
3)	Sample	2	215CX003	8260S	CAL1
4)	Sample	3	215CX004	8260S	CAL2
5)	Sample	4	215CX005	8260S	CAL3
6)	Sample	5	215CX006	8260S	CAL4
7)	Sample	6	215CX007	8260S	CAL5
8)	Sample	7	215CX008	8260S	CAL6
9)	Sample	8	215CX009	8260S	CAL7
10)	Sample	9	215CX010	8260S	CAL8
11)	Sample	10	215CX011	8260S	RINSE
12)	Sample	11	215CX012	8260S	SCV1
13)	Sample	12	215CX013	8260S	BS1
14)	Sample	13	215CX014	8260S	RINSE
15)	Sample	14	215CX015	8260S	BLK1
16)	Sample	15	215CX016	8260S	AE02079-01
17)	Sample	16	215CX017	8260S	AE02079-02
18)	Sample	17	215CX018	8260S	AE02079-06
19)	Sample	18	215CX019	8260S	AE02079-08
20)	Sample	19	215CX020	8260S	AE02079-12
21)	Sample	20	215CX021	8260S	AE02079-13
22)	Sample	21	215CX022	8260S	AE02079-21
23)	Sample	22	215CX023	8260S	AE02079-25
24)	Sample	23	215CX024	8260S	AE02079-28
25)	Sample	24	215CX025	8260S	AE02079-29
26)	Sample	25	215CX026	8260S	AE02079-30
27)	Sample	26	215CX027	8260S	AE02079-31
28)	Sample	27	215CX028	8260S	AE02079-35
29)	Sample	28	215CX029	8260S	AE02079-49
30)	Sample	29	215CX030	8260S	AE02079-50
31)	Sample	30	215CX031	8260S	AE02079-51
32)	Sample	31	215CX032	8260S	MS1
33)	Sample	31	215CX033	8260S	MSD1

Compound List Report OVGCMS5

Method Path : C:\msdchem\1\methods\
Method File : 032921W.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Mar 29 13:47:27 2021
Response Via : Initial Calibration

Total Cpnds : 96

PK#		Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1	I	PENTAFLUOROBENZENE (IS)	168	9.851	1.000	A	3	A	B
2		Dichlorodifluoromethane	85	3.975	0.404	A	2	A	B
3	P	Chloromethane	50	4.398	0.446	QO	1	A	B
4	C	Vinyl Chloride	62	4.580	0.465	QO	1	A	B
5		Bromomethane	94	5.233	0.531	QO	2	A	B
6		Chloroethane	64	5.462	0.554	A	2	A	B
7		Trichlorofluoromethane	101	5.697	0.578	A	2	A	B
8		Diethyl ether	59	6.173	0.627	QO	2	A	B
9	C	1,1-Dichloroethene	96	6.531	0.663	A	2	A	B
10		Trichlorotrifluoroethane	151	6.555	0.665	LO	2	A	B
11		Acrolein	56	7.013	0.712	QO	1	A	B
12		Iodomethane	142	6.778	0.688	LO	2	A	B
13		Carbon Disulfide	76	6.619	0.672	A	2	A	B
14		3-chloropropene	41	7.195	0.730	QO	2	A	B
15		Acetone	43	7.389	0.750	QO	1	A	R
16		Methylene Chloride	84	7.342	0.745	QO	1	A	R
17		Methyl Acetate	43	7.518	0.763	QO	2	A	B
18		t-1,2-Dichloroethene	96	7.542	0.766	QO	2	A	B
19		Methyl tert-butyl ether	73	7.624	0.774	QO	2	A	B
20		Acetonitrile	41	8.035	0.816	QO	2	A	B
21		Isopropyl ether	45	8.047	0.817	QO	2	A	B
22		Chloroprene	88	8.270	0.840	QO	2	A	B
23	P	1,1-Dichloroethane	63	8.311	0.844	QO	3	A	B
24		Acrylonitrile	53	8.382	0.851	QO	2	A	B
25		Vinyl Acetate	43	8.535	0.866	QO	1	A	B
26		c-1,2-Dichloroethene	96	8.946	0.908	QO	2	A	B
27		2,2-Dichloropropane	77	9.069	0.921	QO	2	A	B
28		Bromochloromethane	128	9.181	0.932	LO	1	A	B
29		Cyclohexane	56	9.187	0.933	QO	2	A	B
30	C	Chloroform	83	9.216	0.936	A	2	A	B
31	S	Dibromofluoromethane	113	9.422	0.956	A	2	A	B
32		Dibromofluoromethane	113	9.445	0.959	A	2	A	B
33		2-Butanone	72	9.539	0.968	QO	1	A	R
34		1,1,1-Trichloroethane	97	9.487	0.963	A	2	A	B
35		1,1-Dichloropropene	75	9.604	0.975	QO	2	A	B
36		Propionitrile	54	9.892	1.004	QO	2	A	B
37		Methacrylonitrile	41	9.904	1.005	QO	1	A	R
38		Isobutyl Alcohol	43	9.898	1.005	QO	2	A	B
39	I	1,4-DIFLUOROBENZENE (IS)	114	10.444	1.000	A	2	A	B
40		Carbon Tetrachloride	117	9.410	0.901	A	2	A	B
41		Benzene	78	9.874	0.945	LO	1	A	B
42		1,2-Dichloroethane	62	10.086	0.966	LO	2	A	B
43		Trichloroethene	130	10.450	1.001	LO	2	A	B
44		Methyl cyclohexane	83	10.450	1.001	LO	2	A	B
45		Dibromomethane	93	10.903	1.044	A	2	A	B
46	C	1,2-Dichloropropane	63	10.985	1.052	QO	2	A	B
47		Bromodichloromethane	83	11.014	1.055	A	2	A	B
48		Methyl Methacrylate	69	11.079	1.061	QO	2	A	B
49		1,4-Dioxane	88	11.196	1.072	QO	1	A	R
50		2-Chloroethyl vinyl ether	63	11.490	1.100	QO	2	A	B
51		C-1,3-Dichloropropene	75	11.608	1.111	QO	2	A	B
52	S	D8-Toluene	98	11.778	1.128	A	2	A	B
53		D8-Toluene	98	11.804	1.130	A	2	A	B
54		4-Methyl-2-pentanone	100	12.131	1.161	A	2	A	B

55	I	CHLOROBENZENE-D5 (IS)	82	13.223	1.000	A	2	A	B
56	C	Toluene	92	11.831	0.895	LO	2	A	B
57		T-1,3-Dichloropropene	75	12.195	0.922	LO	2	A	B
58		Tetrachloroethene	164	12.207	0.923	A	2	A	B
59		Ethyl methacrylate	69	12.242	0.926	QO	2	A	B
60		1,1,2-Trichloroethane	97	12.360	0.935	LO	2	A	B
61		Dibromochloromethane	129	12.548	0.949	LO	2	A	B
62		1,3-Dichloropropane	76	12.630	0.955	LO	2	A	B
63		1,2-Dibromoethane	107	12.812	0.969	A	2	A	B
64		2-Hexanone	43	12.877	0.974	QO	2	A	B
65	C	Ethylbenzene	106	13.206	0.999	LO	2	A	B
66	P	Chlorobenzene	112	13.241	1.001	LO	1	A	B
67		1,1,1,2-Tetrachloroethane	131	13.282	1.004	LO	2	A	B
68		m-xylene & p-xylene	106	13.323	1.008	A	1	A	B
69		o-xylene	106	13.735	1.039	A	1	A	B
70		Styrene	104	13.776	1.042	A	2	A	B
71	P	Bromoform	173	13.876	1.049	LO	1	A	B
72		Isopropylbenzene	105	13.999	1.059	A	2	A	B
73	S	Bromofluorobenzene	95	14.328	1.084	A	2	A	B
74		Bromofluorobenzene	95	14.347	1.085	A	2	A	B
75		n-Propylbenzene	91	14.387	1.088	A	2	A	B
76	P	1,1,2,2-Tetrachloroethane	83	14.469	1.094	LO	3	A	B
77		1,2,3-Trichloropropane	61	14.645	1.108	LO	2	A	B
78		T-1,4-Dichloro-2-Butene	53	14.352	1.085	LO	2	A	B
79	I	1,4-DICHLOROBENZENE-D4 (IS)	152	15.486	1.000	A	3	A	B
80		Bromobenzene	156	14.469	0.934	LO	2	A	B
81		1,2,4-Trimethylbenzene	105	14.957	0.966	QO	2	A	B
82		2-Chlorotoluene	91	14.610	0.943	A	2	A	R
83		4-Chlorotoluene	91	14.769	0.954	QO	2	A	R
84		tert-Butylbenzene	119	14.898	0.962	QO	2	A	B
85		1,3,5-Trimethylbenzene	105	14.540	0.939	QO	2	A	B
86		p-Isopropyltoluene	119	15.192	0.981	LO	2	A	B
87		s-Butylbenzene	105	15.074	0.973	LO	2	A	B
88		1,3-Dichlorobenzene	146	15.415	0.995	LO	2	A	R
89		1,4-Dichlorobenzene	146	15.509	1.002	LO	2	A	R
90		n-Butylbenzene	91	15.674	1.012	QO	2	A	B
91		1,2-Dichlorobenzene	146	16.020	1.035	QO	2	A	B
92		DBCP	157	17.084	1.103	QO	1	A	B
93		Hexachlorobutadiene	225	17.983	1.161	QO	2	A	B
94		1,2,4-Trichlorobenzene	180	18.141	1.171	QO	2	A	B
95		Naphthalene	128	18.782	1.213	QO	2	A	B
96		1,2,3-Trichlorobenzene	180	19.152	1.237	QO	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

Compound Name Duplication Report

Quant Method: C:\msdchem\1\methods\032921W.M
Number of Compounds: 96

31 Dibromofluoromethane = 32 Dibromofluoromethane
52 D8-Toluene = 53 D8-Toluene
73 Bromofluorobenzene = 74 Bromofluorobenzene

3 Duplicate Names Detected!!!

032921W.M Tue Mar 30 10:00:26 2021

Response Factor Report OVGCMS5

Method Path : C:\msdchem\1\methods\
Method File : 032921W.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Mar 29 13:47:27 2021
Response Via : Initial Calibration

Calibration Files
1 =215CX003.D 2 =215CX004.D 5 =215CX005.D 20 =215CX007.D 100 =215CX010.D 50 =215CX008.D 80 =215CX009.D
10 =215CX006.D

		Compound	1	2	5	20	100	50	80	10	Avg	%RSD
1)	I	PENTAFLUOROBENZENE...	ISTD									
2)		Dichlorodifluo...	0.564	0.580	0.546	0.637	0.681	0.609	0.629	0.557	0.600	7.81
3)	P	Chloromethane	0.390	0.451	0.393	0.366	0.573	0.399	0.483	0.340	0.424	17.68
4)	C	Vinyl Chloride	0.440	0.444	0.408	0.484	0.591	0.496	0.539	0.403	0.475	13.74
5)		Bromomethane	0.753	0.462	0.314	0.190	0.235	0.195	0.206	0.216	0.321	61.20
6)		Chloroethane	0.347	0.301	0.263	0.291	0.288	0.272	0.260	0.234	0.282	11.96
7)		Trichlorofluor...	0.743	0.679	0.671	0.723	0.832	0.733	0.773	0.614	0.721	9.32
8)		Diethyl ether	0.372	0.252	0.312	0.280	0.394	0.294	0.342	0.230	0.309	18.48
9)	C	1,1-Dichloroet...	0.433	0.378	0.376	0.360	0.477	0.415	0.474	0.338	0.406	12.80
10)		Trichlorotrifl...	0.414	0.255	0.301	0.284	0.329	0.297	0.337	0.241	0.307	17.62
11)		Acrolein	0.031	0.054	0.057	0.055	0.090	0.063	0.079	0.050	0.060#	30.12
12)		Iodomethane	0.155	0.242	0.308	0.460	0.546	0.496	0.532	0.365	0.388	37.14
13)		Carbon Disulfide	1.265	1.387	1.220	1.230	1.389	1.240	1.348	1.163	1.280	6.58
14)		3-chloropropene	0.491	0.418	0.419	0.444	0.663	0.460	0.589	0.386	0.484	19.69
15)		Acetone	0.082	0.079	0.067	0.063	0.095	0.068	0.084	0.068	0.076#	14.58
16)		Methylene Chlo...	0.708	0.447	0.492	0.405	0.548	0.463	0.509	0.379	0.494	20.72
17)		Methyl Acetate	0.103	0.229	0.200	0.137	0.264	0.170	0.215	0.145	0.183	29.27
18)		t-1,2-Dichloro...	0.620	0.354	0.415	0.406	0.550	0.476	0.533	0.368	0.465	20.53
19)		Methyl tert-bu...	1.211	0.813	1.071	0.957	1.378	1.065	1.233	0.874	1.075	17.85
20)		Acetonitrile	0.040	0.046	0.046	0.043	0.067	0.047	0.059	0.040	0.048#	19.60
21)		Isopropyl ether	0.971	0.783	0.916	0.864	1.470	1.061	1.274	0.724	1.008	25.13
22)		Chloroprene	0.356	0.296	0.319	0.391	0.534	0.418	0.504	0.291	0.389	23.66
23)	P	1,1-Dichloroet...	1.156	0.747	0.910	0.715	0.976	0.790	0.881	0.643	0.852	19.29
24)		Acrylonitrile	0.082	0.116	0.105	0.100	0.150	0.116	0.136	0.087	0.111	20.86
25)		Vinyl Acetate	0.546	0.560	0.514	0.605	0.908	0.674	0.823	0.540	0.646	22.54
26)		c-1,2-Dichloro...	0.643	0.434	0.538	0.445	0.640	0.553	0.596	0.417	0.533	17.21
27)		2,2-Dichloropr...	1.027	0.778	0.725	0.732	0.910	0.796	0.863	0.613	0.805	15.79
28)		Bromochloromet...	0.338	0.215	0.272	0.214	0.262	0.243	0.242	0.211	0.250	16.90
29)		Cyclohexane	0.632	0.533	0.623	0.595	0.945	0.748	0.870	0.509	0.682	23.16
30)	C	Chloroform	1.182	0.953	1.031	0.852	1.067	0.958	0.994	0.799	0.980	12.32
31)	s	Dibromofluorom...	0.518	0.515	0.535	0.488	0.534	0.526	0.499	0.538	0.519	3.50
32)		Dibromofluorom...	0.518	0.515	0.535	0.488	0.534	0.526	0.499	0.538	0.519	3.50
33)		2-Butanone	0.074	0.031	0.022	0.042	0.056	0.042	0.051	0.039	0.045#	35.44
34)		1,1,1-Trichlor...	1.024	0.756	0.848	0.780	0.900	0.846	0.852	0.674	0.835	12.44
35)		1,1-Dichloropr...	0.721	0.483	0.680	0.659	0.817	0.722	0.769	0.541	0.674	16.68
36)		Propionitrile	0.050	0.039	0.042	0.039	0.059	0.043	0.053	0.037	0.045#	17.51
37)		Methacrylonitrile	0.190	0.198	0.182	0.191	0.269	0.208	0.248	0.178	0.208	15.90
38)		Isobutyl Alcohol	0.024	0.015	0.024	0.022	0.033	0.025	0.029	0.021	0.024#	22.49
39)	I	1,4-DIFLUOROBENZEN...	ISTD									
40)		Carbon Tetrach...	0.420	0.312	0.324	0.300	0.327	0.316	0.344	0.276	0.328	12.99

Method Path : C:\msdchem\1\methods\
Method File : 032921W.M
Title : ENCO SOP VGCMS05; Element Cal

41)		Benzene	1.455	0.948	1.097	0.921	1.020	0.953	1.065	0.829	1.036	18.27
42)		1,2-Dichloroet...	0.496	0.344	0.373	0.315	0.354	0.337	0.354	0.287	0.357	17.31
43)		Trichloroethene	0.394	0.246	0.259	0.244	0.250	0.255	0.267	0.212	0.266	20.45
44)		Methyl cyclohe...	1.300	0.855	0.586	0.445	0.503	0.476	0.521	0.441	0.641	46.52
45)		Dibromomethane	0.150	0.149	0.167	0.130	0.158	0.147	0.159	0.123	0.148	10.17
46)	C	1,2-Dichloropr...	0.335	0.179	0.211	0.203	0.266	0.229	0.263	0.183	0.234	22.46
47)		Bromodichlorom...	0.401	0.266	0.325	0.317	0.362	0.332	0.363	0.273	0.330	13.95
48)		Methyl Methacr...	0.080	0.093	0.097	0.110	0.161	0.125	0.160	0.085	0.114	28.30
49)		1,4-Dioxane	0.002	0.001	0.001	0.001	0.002	0.001	0.002	0.001	0.001#	26.33
50)		2-Chloroethyl ...	0.089	0.099	0.098	0.116	0.149	0.126	0.149	0.103	0.116	20.05
51)		C-1,3-Dichloro...	0.492	0.372	0.389	0.370	0.471	0.438	0.478	0.326	0.417	14.61
52)	s	D8-Toluene	1.103	1.103	1.068	1.057	1.075	1.138	1.093	1.136	1.097	2.73
53)		D8-Toluene	1.103	1.103	1.068	1.057	1.075	1.138	1.093	1.136	1.097	2.73
54)		4-Methyl-2-pen...	0.034	0.028	0.027	0.024	0.032	0.029	0.033	0.026	0.029#	12.11
55)		CHLOROBENZENE-D5 (IS) ----------ISTD----------										
56)	C	Toluene	1.458	1.150	1.193	1.032	1.077	1.100	1.129	0.883	1.128	14.45
57)		T-1,3-Dichloro...	0.840	0.572	0.575	0.526	0.608	0.602	0.612	0.505	0.605	16.97
58)		Tetrachloroethene	0.366	0.355	0.314	0.307	0.279	0.324	0.296	0.259	0.313	11.55
59)		Ethyl methacry...	0.452	0.357	0.318	0.399	0.506	0.442	0.490	0.367	0.416	16.09
60)		1,1,2-Trichlor...	0.451	0.255	0.416	0.360	0.357	0.349	0.361	0.310	0.357	16.79
61)		Dibromochlorom...	0.472	0.310	0.438	0.354	0.383	0.382	0.388	0.326	0.382	14.09
62)		1,3-Dichloropr...	0.859	0.578	0.652	0.580	0.639	0.605	0.645	0.556	0.639	14.94
63)		1,2-Dibromoethane	0.439	0.359	0.369	0.337	0.371	0.358	0.378	0.300	0.364	10.77
64)		2-Hexanone	0.115	0.154	0.118	0.138	0.180	0.146	0.178	0.117	0.143	18.30
65)	C	Ethylbenzene	0.931	0.558	0.697	0.639	0.663	0.679	0.707	0.553	0.678	17.34
66)	P	Chlorobenzene	1.834	1.295	1.374	1.214	1.139	1.220	1.193	1.082	1.294	18.21
67)		1,1,1,2-Tetrac...	0.544	0.431	0.422	0.387	0.387	0.395	0.409	0.337	0.414	14.47
68)		m-xylene & p-x...	1.073	0.821	0.953	0.855	0.801	0.875	0.856	0.808	0.880	10.40
69)		o-xylene	0.941	0.770	0.889	0.798	0.829	0.868	0.879	0.685	0.832	9.65
70)		Styrene	1.487	1.046	1.409	1.329	1.451	1.457	1.489	1.100	1.346	13.13
71)	P	Bromoform	0.321	0.176	0.183	0.168	0.194	0.188	0.196	0.146	0.196	26.79
72)		Isopropylbenzene	2.342	1.835	2.154	2.075	2.103	2.222	2.232	1.853	2.102	8.53
73)	s	Bromofluoroben...	0.904	0.912	0.861	0.849	0.812	0.913	0.819	0.909	0.872	4.88
74)		Bromofluoroben...	0.904	0.912	0.861	0.849	0.812	0.913	0.819	0.909	0.872	4.88
75)		n-Propylbenzene	3.084	2.395	2.801	2.714	2.626	2.801	2.752	2.362	2.692	8.70
76)	P	1,1,2,2-Tetrac...	0.810	0.452	0.514	0.465	0.479	0.471	0.486	0.429	0.513	23.81
77)		1,2,3-Trichlor...	0.181	0.065	0.128	0.099	0.086	0.087	0.095	0.090	0.104	34.21
78)		T-1,4-Dichloro...	0.351	0.026	0.133	0.144	0.165	0.151	0.164	0.148	0.160	55.49
79)		1,4-DICHLOROBENZEN... ----------ISTD----------										
80)		Bromobenzene	0.795	0.468	0.532	0.489	0.538	0.527	0.532	0.426	0.538	20.60
81)		1,2,4-Trimethy...	2.233	1.452	2.081	2.008	2.356	2.288	2.361	1.726	2.063	15.80
82)		2-Chlorotoluene	2.001	1.534	1.840	1.637	2.024	1.868	1.997	1.460	1.795	12.42
83)		4-Chlorotoluene	2.051	1.497	1.732	1.672	2.122	1.929	2.065	1.472	1.817	14.28
84)		tert-Butylbenzene	1.575	1.335	1.574	1.588	1.926	1.808	1.940	1.358	1.638	14.30
85)		1,3,5-Trimethy...	2.242	1.575	2.027	1.969	2.374	2.223	2.390	1.646	2.056	15.20
86)		p-Isopropyltol...	1.612	1.571	1.930	2.013	2.399	2.298	2.406	1.733	1.995	17.19
87)		s-Butylbenzene	2.403	1.748	2.406	2.292	2.804	2.668	2.773	1.974	2.383	15.78
88)		1,3-Dichlorobe...	1.363	0.817	1.041	1.007	1.138	1.103	1.106	0.825	1.050	16.84
89)		1,4-Dichlorobe...	1.476	1.108	1.176	1.026	1.145	1.114	1.105	0.922	1.134	14.03

Method Path : C:\msdchem\1\methods\
Method File : 032921W.M
Title : ENCO SOP VGCMS05; Element Cal

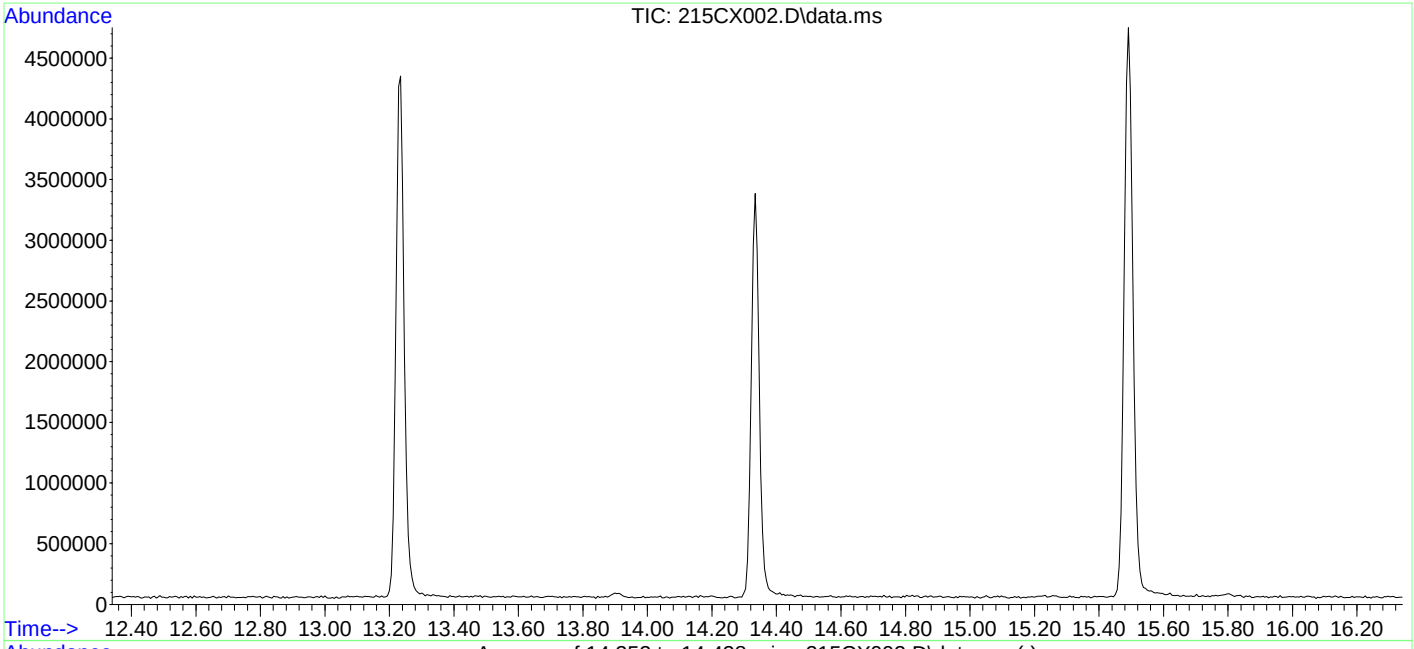
90)	n-Butylbenzene	1.669	1.259	1.741	1.810	2.320	2.123	2.256	1.522	1.838	20.17
91)	1,2-Dichlorobe...	1.282	0.722	0.952	0.887	1.047	0.992	1.005	0.821	0.963	17.35
92)	DBCP	0.088	0.038	0.047	0.054	0.077	0.067	0.077	0.047	0.062#	28.91
93)	Hexachlorobuta...	0.138	0.079	0.124	0.104	0.120	0.111	0.112	0.092	0.110	16.68
94)	1,2,4-Trichlor...	0.204	0.114	0.162	0.205	0.323	0.239	0.282	0.129	0.207	35.10
95)	Naphthalene	0.289	0.213	0.254	0.298	0.693	0.428	0.602	0.268	0.380	46.66
96)	1,2,3-Trichlor...	0.126	0.068	0.071	0.076	0.146	0.095	0.124	0.065	0.096#	32.79

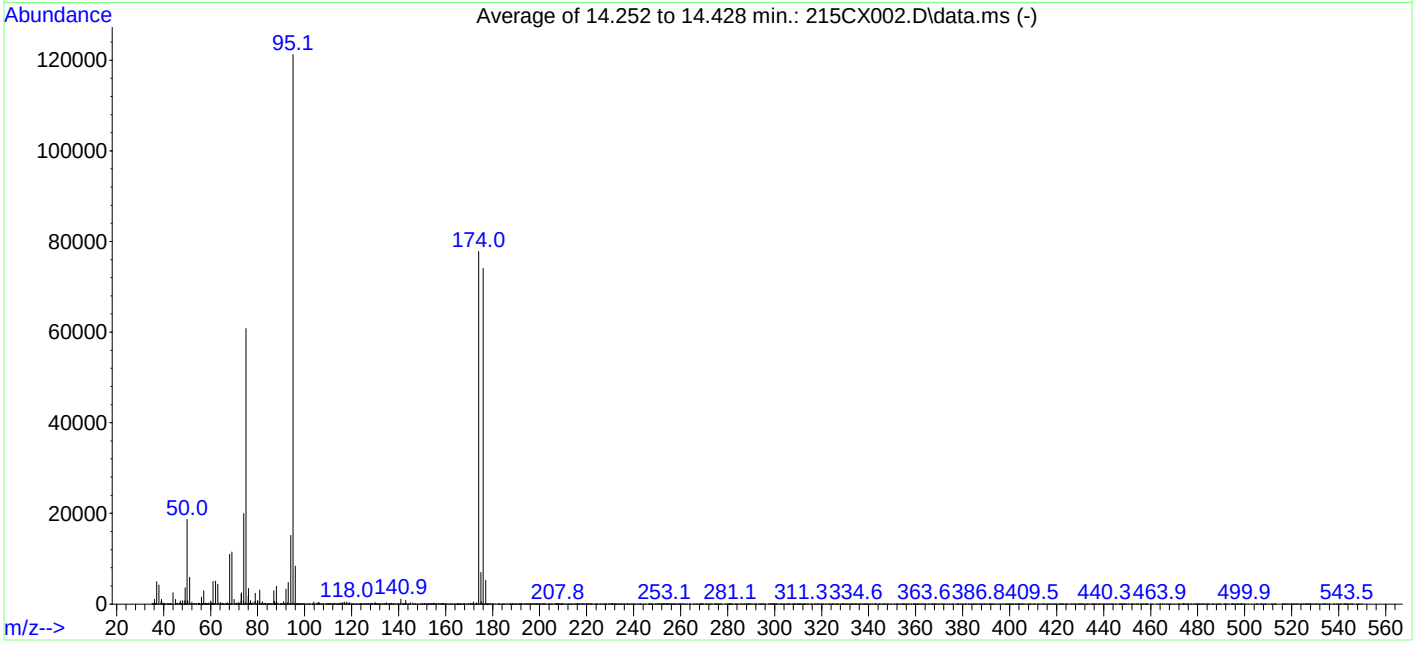
(#) = Out of Range

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX002.D
Acq On : 29 Mar 2021 8:34 am
Operator : KKW
Sample : TUN1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\032921W.M
Title : ENCO SOP VGCMS05; Element Cal
Last Update : Mon Mar 29 13:47:27 2021





Spectrum Information: Average of 14.252 to 14.428 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	155.8	121226	PASS
96	95	5	9	6.9	8387	PASS
173	174	0.00	2	0.3	240	PASS
174	95	50	200	64.2	77828	PASS
175	174	5	9	8.9	6951	PASS
176	174	95	105	95.1	74038	PASS
177	176	5	10	7.1	5277	PASS

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1346004	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2604384	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1476739	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1485351	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	697532	49.57	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.14%				
52) D8-Toluene	11.784	98	2871980	49.16	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 98.32%				
73) Bromofluorobenzene	14.334	95	1335006	48.84	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.68%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	15173	0.91	ug/L	#	89
3) Chloromethane	4.404	50	10512	1.01	ug/L	#	84
4) Vinyl Chloride	4.592	62	11846	0.90	ug/L	#	1
5) Bromomethane	5.239	94	20266	4.70	ug/L	#	82
6) Chloroethane	5.474	64	9338	1.15	ug/L	#	93
7) Trichlorofluoromethane	5.714	101	20005	1.01	ug/L	#	93
8) Diethyl ether	6.184	59	10011	1.47	ug/L	#	86
9) 1,1-Dichloroethene	6.537	96	11667	1.14	ug/L		92
10) Trichlorotrifluoroethane	6.566	151	11133	1.55	ug/L	#	66
11) Acrolein	7.025	56	8379	5.53	ug/L	#	71
12) Iodomethane	6.778	142	20828	3.12	ug/L	#	81
13) Carbon Disulfide	6.631	76	170244	6.26	ug/L	#	91
14) 3-chloropropene	7.201	41	13216	1.28	ug/L	#	86
15) Acetone	7.424	43	11020	6.93	ug/L		90
16) Methylene Chloride	7.342	84	19056	1.53	ug/L		87
17) Methyl Acetate	7.548	43	2786	0.55	ug/L	#	21
18) t-1,2-Dichloroethene	7.559	96	16702	1.51	ug/L		100
19) Methyl tert-butyl ether	7.636	73	32597	1.27	ug/L	#	86
20) Acetonitrile	8.035	41	10810	9.35	ug/L	#	84
21) Isopropyl ether	8.053	45	26147	1.07	ug/L	#	86
22) Chloroprene	8.288	88	9593	1.08	ug/L	#	76
23) 1,1-Dichloroethane	8.323	63	31124	1.52	ug/L		99
24) Acrylonitrile	8.400	53	22133	7.29	ug/L		97
25) Vinyl Acetate	8.558	43	73494	5.10	ug/L		99
26) c-1,2-Dichloroethene	8.958	96	17299	1.36	ug/L	#	83
27) 2,2-Dichloropropane	9.081	77	27656	1.49	ug/L	#	91
28) Bromochloromethane	9.193	128	9100	1.59	ug/L		87
29) Cyclohexane	9.193	56	17006	1.07	ug/L	#	84
30) Chloroform	9.234	83	31830	1.36	ug/L		98
32) Dibromofluoromethane	9.434	113	697532	49.57	ug/L	#	90
33) 2-Butanone	9.581	72	9924m	8.99	ug/L		
34) 1,1,1-Trichloroethane	9.498	97	27570	1.42	ug/L	#	89
35) 1,1-Dichloropropene	9.616	75	19402	1.23	ug/L	#	88
36) Propionitrile	9.927	54	13496	11.76	ug/L	#	70
37) Methacrylonitrile	9.921	41	51184	9.53	ug/L		86
38) Isobutyl Alcohol	9.915	43	12950	22.74	ug/L	#	78
40) Carbon Tetrachloride	9.428	117	21898	1.50	ug/L	#	67
41) Benzene	9.892	78	75762	1.59	ug/L		98
42) 1,2-Dichloroethane	10.092	62	25821	1.66	ug/L	#	90
43) Trichloroethene	10.456	130	20535	1.64	ug/L	#	1
44) Methyl cyclohexane	10.450	83	67716	2.27	ug/L	#	63
45) Dibromomethane	10.914	93	7826	1.09	ug/L	#	62
46) 1,2-Dichloropropane	10.997	63	17460	1.61	ug/L	#	87
47) Bromodichloromethane	11.032	83	20904	1.35	ug/L		99
48) Methyl Methacrylate	11.108	69	4160	0.71	ug/L	#	33
49) 1,4-Dioxane	11.243	88	2167	20.97	ug/L	#	20
50) 2-Chloroethyl vinyl ether	11.508	63	23139	4.47	ug/L	#	98
51) C-1,3-Dichloropropene	11.619	75	25622	1.38	ug/L	#	83

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

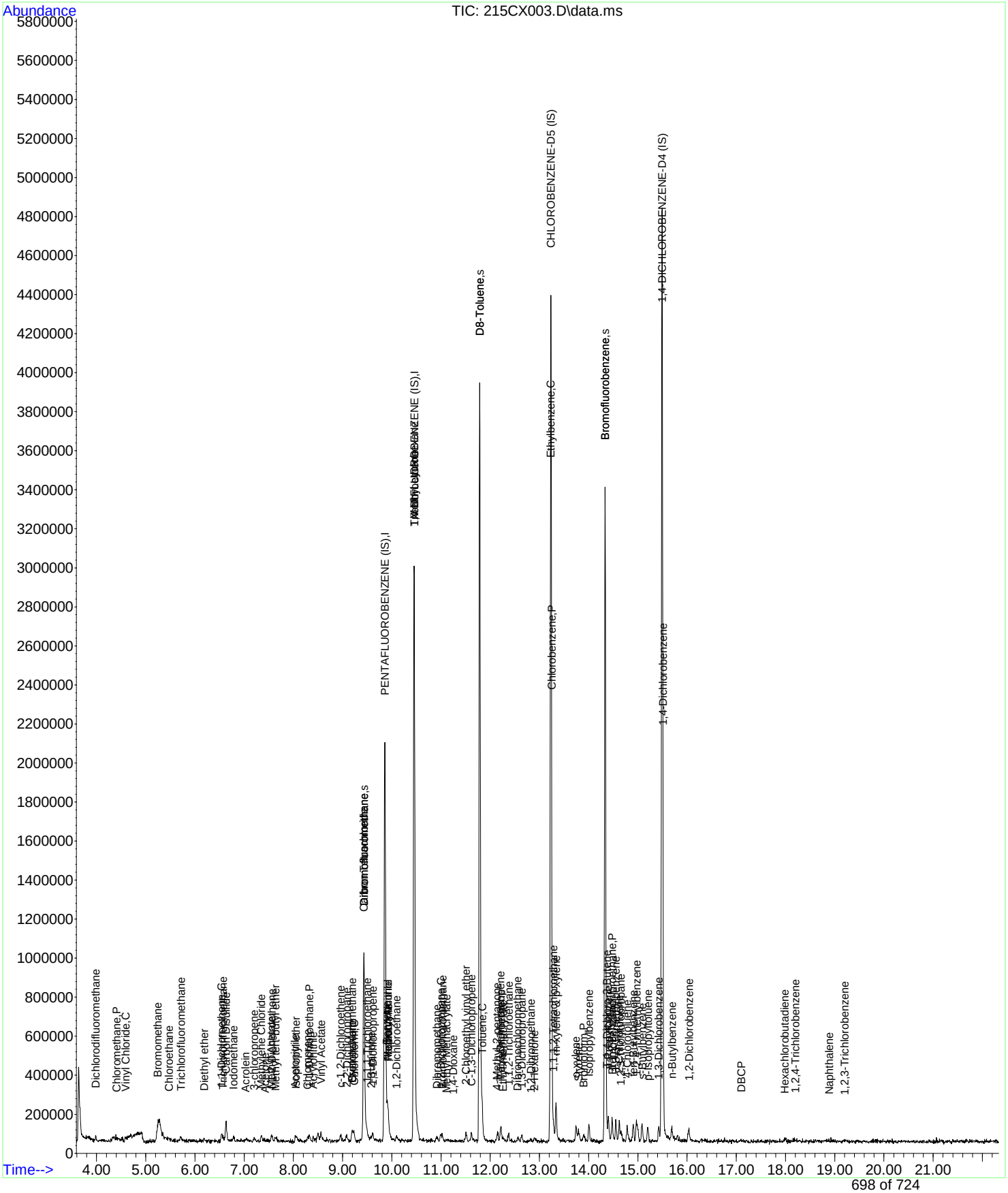
Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	2871980	49.16	ug/L	#	96
54) 4-Methyl-2-pentanone	12.131	100	8813	5.50	ug/L	#	66
56) Toluene	11.837	92	43065	1.29	ug/L	#	89
57) T-1,3-Dichloropropene	12.207	75	24821	1.45	ug/L	#	84
58) Tetrachloroethene	12.219	164	10797	1.22	ug/L		93
59) Ethyl methacrylate	12.254	69	13362	0.98	ug/L	#	85
60) 1,1,2-Trichloroethane	12.377	97	13330	1.16	ug/L	#	82
61) Dibromochloromethane	12.554	129	13931	1.31	ug/L	#	97
62) 1,3-Dichloropropane	12.642	76	25370	1.37	ug/L	#	39
63) 1,2-Dibromoethane	12.824	107	12959	1.26	ug/L	#	72
64) 2-Hexanone	12.894	43	17037	3.51	ug/L	#	87
65) Ethylbenzene	13.223	106	27483	1.38	ug/L	#	81
66) Chlorobenzene	13.247	112	54155	1.42	ug/L		89
67) 1,1,1,2-Tetrachloroethane	13.282	131	16064	1.31	ug/L		90
68) m-xylene & p-xylene	13.335	106	63381	2.50	ug/L		94
69) o-xylene	13.740	106	27798	1.11	ug/L		98
70) Styrene	13.793	104	43921	1.08	ug/L	#	95
71) Bromoform	13.893	173	9466	1.75	ug/L	#	76
72) Isopropylbenzene	14.005	105	69164	1.07	ug/L		95
74) Bromofluorobenzene	14.334	95	1335006	48.84	ug/L		89
75) n-Propylbenzene	14.399	91	91098	1.04	ug/L	#	94
76) 1,1,2,2-Tetrachloroethane	14.475	83	23910	1.44	ug/L	#	88
77) 1,2,3-Trichloropropane	14.651	61	5332	1.59	ug/L	#	83
78) T-1,4-Dichloro-2-Butene	14.369	53	10360	2.41	ug/L	#	50
80) Bromobenzene	14.481	156	23609	1.49	ug/L	#	68
81) 1,2,4-Trimethylbenzene	14.974	105	66338	1.02	ug/L	#	92
82) 2-Chlorotoluene	14.622	91	59438	1.05	ug/L	#	89
83) 4-Chlorotoluene	14.780	91	60926	1.07	ug/L		96
84) tert-Butylbenzene	14.904	119	46798	0.89	ug/L		90
85) 1,3,5-Trimethylbenzene	14.551	105	66597	1.05	ug/L		99
86) p-Isopropyltoluene	15.204	119	47896	0.73	ug/L		96
87) s-Butylbenzene	15.092	105	71395	0.92	ug/L	#	95
88) 1,3-Dichlorobenzene	15.421	146	40499	1.23	ug/L		97
89) 1,4-Dichlorobenzene	15.509	146	43846	1.22	ug/L	#	1
90) n-Butylbenzene	15.691	91	49575	0.83	ug/L		94
91) 1,2-Dichlorobenzene	16.038	146	38089	1.30	ug/L	#	88
92) DBCP	17.101	157	2629m	1.27	ug/L		
93) Hexachlorobutadiene	17.983	225	4092	1.04	ug/L	#	28
94) 1,2,4-Trichlorobenzene	18.200	180	6070	0.63	ug/L	#	87
95) Naphthalene	18.887	128	8572	0.42	ug/L	#	95
96) 1,2,3-Trichlorobenzene	19.199	180	3745m	0.66	ug/L		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX003.D
Acq On : 29 Mar 2021 9:08 am
Operator : KKW
Sample : CAL1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Mar 29 11:42:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1328802	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2614044	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1465646	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1484001	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	752059	54.13	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.26%				
52) D8-Toluene	11.778	98	3173381	54.12	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 108.24%				
73) Bromofluorobenzene	14.328	95	1471089	54.23	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.46%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	30835	1.88	ug/L		93
3) Chloromethane	4.410	50	23986	2.34	ug/L		99
4) Vinyl Chloride	4.580	62	23575	1.82	ug/L	#	47
5) Bromomethane	5.239	94	24555	5.77	ug/L	#	81
6) Chloroethane	5.468	64	16014m	2.00	ug/L		
7) Trichlorofluoromethane	5.709	101	36080	1.84	ug/L	#	90
8) Diethyl ether	6.179	59	13385	2.00	ug/L	#	73
9) 1,1-Dichloroethene	6.555	96	20096	2.00	ug/L		95
10) Trichlorotrifluoroethane	6.561	151	13554	1.91	ug/L		90
11) Acrolein	7.019	56	28837	19.28	ug/L		96
12) Iodomethane	6.784	142	64204	9.74	ug/L		93
13) Carbon Disulfide	6.631	76	368582	13.73	ug/L		97
14) 3-chloropropene	7.207	41	22191	2.18	ug/L	#	80
15) Acetone	7.401	43	21080	13.42	ug/L		90
16) Methylene Chloride	7.342	84	23782	1.94	ug/L		97
17) Methyl Acetate	7.548	43	12165	2.42	ug/L	#	53
18) t-1,2-Dichloroethene	7.559	96	18795	1.72	ug/L		86
19) Methyl tert-butyl ether	7.624	73	43199	1.71	ug/L	#	90
20) Acetonitrile	8.047	41	24538	21.50	ug/L	#	63
21) Isopropyl ether	8.059	45	41616	1.72	ug/L		94
22) Chloroprene	8.288	88	15728	1.79	ug/L	#	79
23) 1,1-Dichloroethane	8.329	63	39712	1.97	ug/L		99
24) Acrylonitrile	8.400	53	61623	20.57	ug/L		95
25) Vinyl Acetate	8.558	43	148921	10.48	ug/L		98
26) c-1,2-Dichloroethene	8.952	96	23065	1.84	ug/L	#	81
27) 2,2-Dichloropropane	9.075	77	41344	2.25	ug/L	#	92
28) Bromochloromethane	9.181	128	11421	2.03	ug/L		90
29) Cyclohexane	9.187	56	28345	1.80	ug/L	#	91
30) Chloroform	9.228	83	50671	2.19	ug/L		96
32) Dibromofluoromethane	9.428	113	752059	54.13	ug/L	#	90
33) 2-Butanone	9.563	72	8198	7.52	ug/L	#	47
34) 1,1,1-Trichloroethane	9.492	97	40208	2.10	ug/L		91
35) 1,1-Dichloropropene	9.616	75	25667	1.65	ug/L	#	83
36) Propionitrile	9.904	54	20908	18.46	ug/L	#	28
37) Methacrylonitrile	9.915	41	105052	19.82	ug/L		86
38) Isobutyl Alcohol	9.915	43	15783	28.08	ug/L	#	42
40) Carbon Tetrachloride	9.416	117	32641	2.23	ug/L	#	81
41) Benzene	9.880	78	99163	2.08	ug/L		96
42) 1,2-Dichloroethane	10.103	62	35974	2.30	ug/L		96
43) Trichloroethene	10.468	130	25702	2.05	ug/L	#	1
44) Methyl cyclohexane	10.450	83	89368	2.98	ug/L	#	67
45) Dibromomethane	10.903	93	15579	2.16	ug/L		87
46) 1,2-Dichloropropane	10.991	63	18694	1.72	ug/L	#	77
47) Bromodichloromethane	11.020	83	27764	1.79	ug/L	#	89
48) Methyl Methacrylate	11.091	69	9691	1.66	ug/L	#	80
49) 1,4-Dioxane	11.208	88	2015	19.42	ug/L	#	70
50) 2-Chloroethyl vinyl ether	11.496	63	51809	9.98	ug/L	#	92
51) C-1,3-Dichloropropene	11.614	75	38936	2.09	ug/L	#	88

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

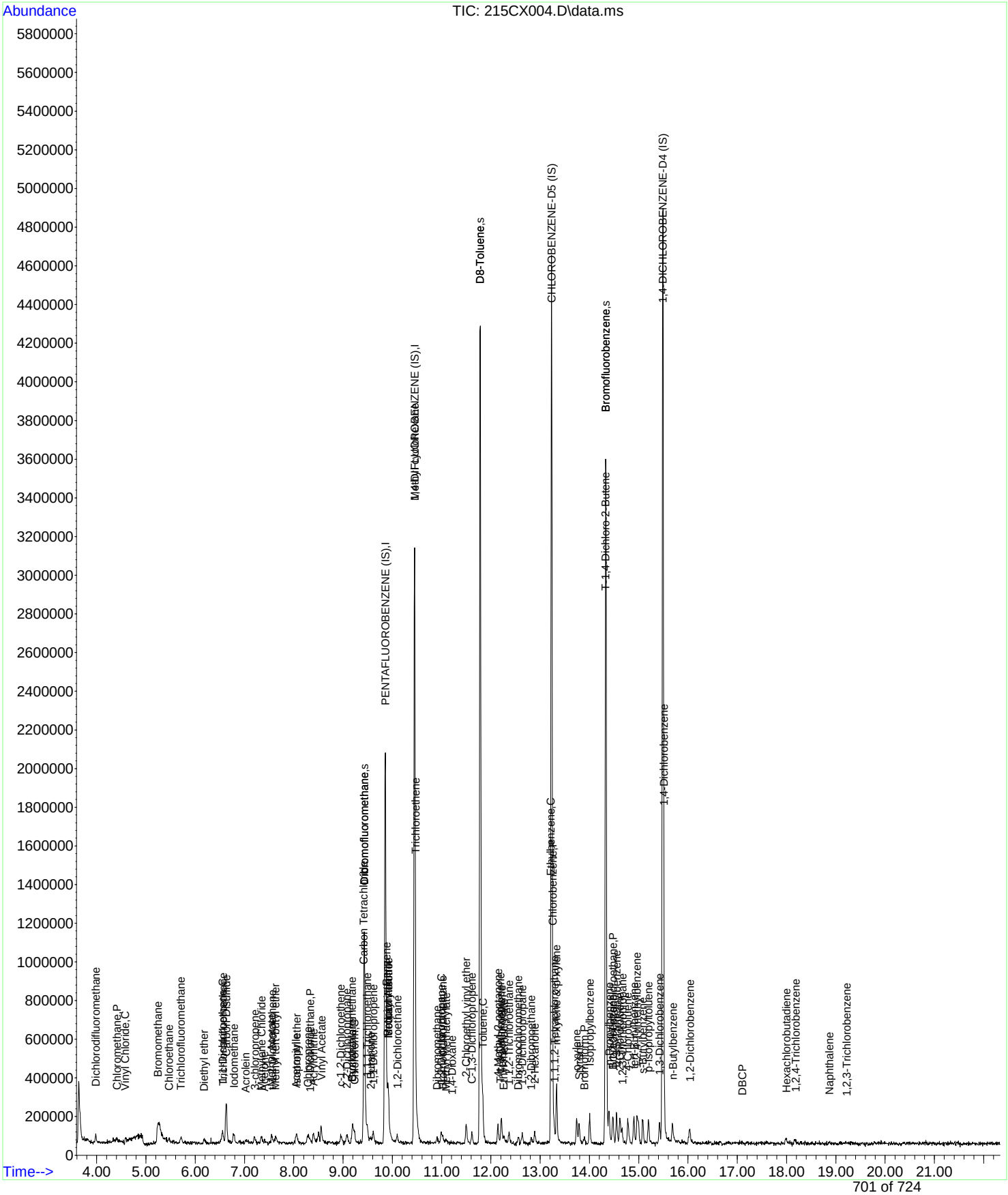
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	3172761	54.11 ug/L #	96
54) 4-Methyl-2-pentanone	12.142	100	14732	9.16 ug/L	91
56) Toluene	11.837	92	67403	2.03 ug/L #	96
57) T-1,3-Dichloropropene	12.195	75	33539	1.98 ug/L	95
58) Tetrachloroethene	12.219	164	20839	2.38 ug/L	91
59) Ethyl methacrylate	12.260	69	20905	1.54 ug/L	94
60) 1,1,2-Trichloroethane	12.366	97	14937	1.31 ug/L #	44
61) Dibromochloromethane	12.554	129	18186	1.72 ug/L #	95
62) 1,3-Dichloropropane	12.636	76	33913	1.84 ug/L	99
63) 1,2-Dibromoethane	12.818	107	21026	2.07 ug/L #	96
64) 2-Hexanone	12.889	43	45154	9.37 ug/L	86
65) Ethylbenzene	13.212	106	32719	1.65 ug/L #	84
66) Chlorobenzene	13.253	112	75925	2.00 ug/L	92
67) 1,1,1,2-Tetrachloroethane	13.294	131	25240	2.08 ug/L	88
68) m-xylene & p-xylene	13.329	106	96244	3.83 ug/L	97
69) o-xylene	13.740	106	45151	1.81 ug/L	81
70) Styrene	13.793	104	61329	1.52 ug/L #	80
71) Bromoform	13.893	173	10308	1.92 ug/L #	78
72) Isopropylbenzene	14.005	105	107603	1.68 ug/L	95
74) Bromofluorobenzene	14.328	95	1471089	54.23 ug/L	88
75) n-Propylbenzene	14.404	91	140390	1.62 ug/L	97
76) 1,1,2,2-Tetrachloroethane	14.475	83	26520	1.61 ug/L #	89
77) 1,2,3-Trichloropropane	14.669	61	3809	1.14 ug/L #	59
78) T-1,4-Dichloro-2-Butene	14.322	53	1545	0.36 ug/L #	1
80) Bromobenzene	14.469	156	27760	1.75 ug/L	83
81) 1,2,4-Trimethylbenzene	14.963	105	86195	1.32 ug/L #	96
82) 2-Chlorotoluene	14.616	91	91072	1.62 ug/L	92
83) 4-Chlorotoluene	14.775	91	88861	1.56 ug/L	94
84) tert-Butylbenzene	14.904	119	79263	1.51 ug/L	98
85) 1,3,5-Trimethylbenzene	14.551	105	93491	1.48 ug/L #	92
86) p-Isopropyltoluene	15.198	119	93247	1.43 ug/L	94
87) s-Butylbenzene	15.080	105	103773	1.34 ug/L #	94
88) 1,3-Dichlorobenzene	15.421	146	48473	1.47 ug/L	96
89) 1,4-Dichlorobenzene	15.509	146	65762	1.84 ug/L #	1
90) n-Butylbenzene	15.691	91	74752	1.25 ug/L	96
91) 1,2-Dichlorobenzene	16.038	146	42862	1.46 ug/L	97
92) DBCP	17.101	157	2263m	1.09 ug/L	
93) Hexachlorobutadiene	17.994	225	4704m	1.19 ug/L	
94) 1,2,4-Trichlorobenzene	18.188	180	6744m	0.70 ug/L	
95) Naphthalene	18.870	128	12668	0.62 ug/L #	84
96) 1,2,3-Trichlorobenzene	19.217	180	4028m	0.71 ug/L	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX004.D
Acq On : 29 Mar 2021 9:36 am
Operator : KKW
Sample : CAL2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Mar 29 11:44:32 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX005.D
Acq On : 29 Mar 2021 10:04 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 29 11:47:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1303609	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2636527	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1519825	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1521127	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	837287	61.43	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 122.86%				
52) D8-Toluene	11.778	98	3379211	57.14	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 114.28%				
73) Bromofluorobenzene	14.328	95	1570211	55.82	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 111.64%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	71190	4.42	ug/L		93
3) Chloromethane	4.398	50	51228	5.09	ug/L		98
4) Vinyl Chloride	4.586	62	53188	4.18	ug/L	#	43
5) Bromomethane	5.232	94	40977	9.82	ug/L	#	96
6) Chloroethane	5.467	64	34320	4.38	ug/L		97
7) Trichlorofluoromethane	5.714	101	87426	4.54	ug/L		98
8) Diethyl ether	6.178	59	40677	6.19	ug/L		85
9) 1,1-Dichloroethene	6.537	96	48972	4.96	ug/L	#	78
10) Trichlorotrifluoroethane	6.566	151	39285	5.65	ug/L		96
11) Acrolein	7.019	56	74786	50.96	ug/L		96
12) Iodomethane	6.778	142	200791	31.06	ug/L		99
13) Carbon Disulfide	6.625	76	795138	30.19	ug/L		97
14) 3-chloropropene	7.201	41	54613	5.47	ug/L	#	89
15) Acetone	7.401	43	43683	28.36	ug/L		94
16) Methylene Chloride	7.342	84	64086	5.32	ug/L		91
17) Methyl Acetate	7.536	43	26135	5.30	ug/L		90
18) t-1,2-Dichloroethene	7.553	96	54041	5.03	ug/L		97
19) Methyl tert-butyl ether	7.636	73	139620	5.62	ug/L	#	92
20) Acetonitrile	8.053	41	59685	53.30	ug/L		97
21) Isopropyl ether	8.047	45	119390	5.02	ug/L		95
22) Chloroprene	8.276	88	41543	4.82	ug/L	#	91
23) 1,1-Dichloroethane	8.317	63	118582	6.00	ug/L		96
24) Acrylonitrile	8.393	53	136827	46.56	ug/L	#	97
25) Vinyl Acetate	8.546	43	335017	24.02	ug/L		99
26) c-1,2-Dichloroethene	8.952	96	70106	5.69	ug/L		95
27) 2,2-Dichloropropane	9.075	77	94468	5.25	ug/L		97
28) Bromochloromethane	9.193	128	35395	6.40	ug/L		96
29) Cyclohexane	9.187	56	81246	5.27	ug/L		93
30) Chloroform	9.222	83	134466	5.94	ug/L		90
32) Dibromofluoromethane	9.428	113	837287	61.43	ug/L	#	93
33) 2-Butanone	9.557	72	14508	13.57	ug/L	#	20
34) 1,1,1-Trichloroethane	9.480	97	110578	5.88	ug/L		94
35) 1,1-Dichloropropene	9.610	75	88659	5.82	ug/L	#	88
36) Propionitrile	9.904	54	54571	49.11	ug/L	#	84
37) Methacrylonitrile	9.909	41	237368	45.64	ug/L		98
38) Isobutyl Alcohol	9.909	43	63611	115.35	ug/L	#	41
40) Carbon Tetrachloride	9.410	117	85459	5.79	ug/L	#	82
41) Benzene	9.880	78	289120	6.00	ug/L		99
42) 1,2-Dichloroethane	10.092	62	98401	6.25	ug/L		96
43) Trichloroethene	10.450	130	68234	5.38	ug/L	#	20
44) Methyl cyclohexane	10.450	83	154573	5.11	ug/L		85
45) Dibromomethane	10.902	93	44146	6.06	ug/L		95
46) 1,2-Dichloropropane	10.991	63	55564	5.06	ug/L	#	79
47) Bromodichloromethane	11.020	83	85663	5.48	ug/L	#	93
48) Methyl Methacrylate	11.090	69	25666	4.35	ug/L		92
49) 1,4-Dioxane	11.226	88	6774	64.74	ug/L	#	73
50) 2-Chloroethyl vinyl ether	11.490	63	129803	24.80	ug/L	#	97
51) C-1,3-Dichloropropene	11.613	75	102600	5.46	ug/L	#	90

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX005.D
Acq On : 29 Mar 2021 10:04 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

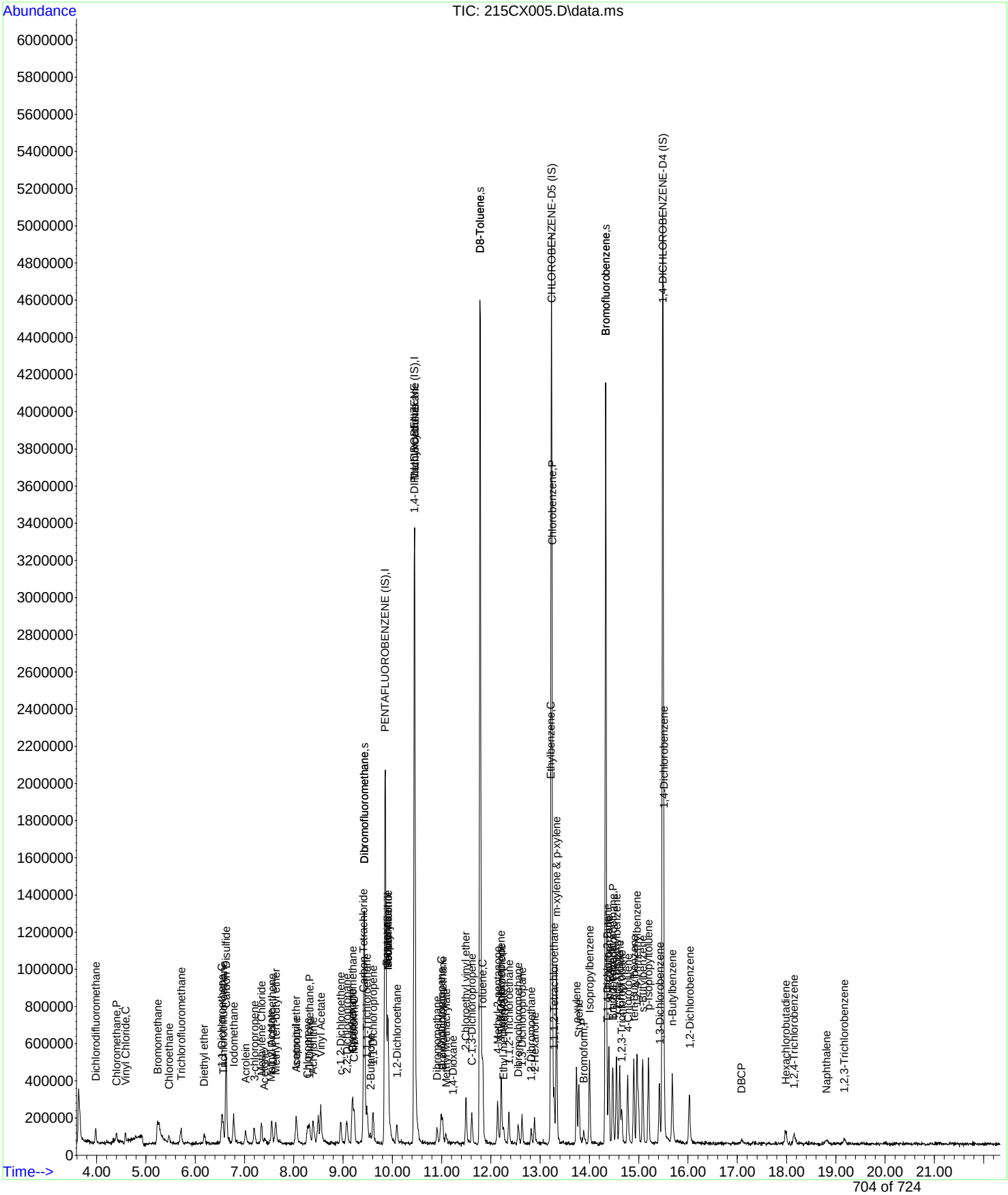
Quant Time: Mar 29 11:47:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3379211	57.14	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	35178	21.68	ug/L		80
56) Toluene	11.831	92	181325	5.28	ug/L		99
57) T-1,3-Dichloropropene	12.201	75	87397	4.97	ug/L	#	92
58) Tetrachloroethene	12.213	164	47764	5.26	ug/L		89
59) Ethyl methacrylate	12.248	69	48326	3.44	ug/L	#	91
60) 1,1,2-Trichloroethane	12.365	97	63267	5.36	ug/L		97
61) Dibromochloromethane	12.553	129	66507	6.07	ug/L	#	95
62) 1,3-Dichloropropane	12.630	76	99078	5.19	ug/L	#	95
63) 1,2-Dibromoethane	12.818	107	56072	5.31	ug/L	#	91
64) 2-Hexanone	12.888	43	89628	17.94	ug/L		98
65) Ethylbenzene	13.211	106	105895	5.16	ug/L	#	91
66) Chlorobenzene	13.241	112	208785	5.31	ug/L		95
67) 1,1,1,2-Tetrachloroethane	13.282	131	64189	5.10	ug/L		92
68) m-xylene & p-xylene	13.329	106	289617	11.11	ug/L		95
69) o-xylene	13.740	106	135108	5.23	ug/L		98
70) Styrene	13.781	104	214155	5.11	ug/L		98
71) Bromoform	13.881	173	27867	5.01	ug/L	#	88
72) Isopropylbenzene	13.999	105	327340	4.92	ug/L		97
74) Bromofluorobenzene	14.328	95	1570211	55.82	ug/L		91
75) n-Propylbenzene	14.392	91	425679	4.72	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.475	83	78139	4.58	ug/L		99
77) 1,2,3-Trichloropropane	14.651	61	19398	5.60	ug/L		84
78) T-1,4-Dichloro-2-Butene	14.357	53	20247	4.57	ug/L	#	1
80) Bromobenzene	14.469	156	80917	4.98	ug/L		91
81) 1,2,4-Trimethylbenzene	14.962	105	316547	4.73	ug/L		99
82) 2-Chlorotoluene	14.616	91	279842	4.85	ug/L		96
83) 4-Chlorotoluene	14.780	91	263457	4.51	ug/L		96
84) tert-Butylbenzene	14.904	119	239393	4.45	ug/L		97
85) 1,3,5-Trimethylbenzene	14.551	105	308391	4.77	ug/L		99
86) p-Isopropyltoluene	15.197	119	293519	4.38	ug/L		95
87) s-Butylbenzene	15.080	105	365921	4.62	ug/L		96
88) 1,3-Dichlorobenzene	15.427	146	158311	4.70	ug/L		94
89) 1,4-Dichlorobenzene	15.509	146	178959	4.88	ug/L	#	39
90) n-Butylbenzene	15.679	91	264901	4.34	ug/L		98
91) 1,2-Dichlorobenzene	16.032	146	144830	4.81	ug/L		98
92) DBCP	17.083	157	7172	3.38	ug/L	#	35
93) Hexachlorobutadiene	17.982	225	18849	4.66	ug/L	#	45
94) 1,2,4-Trichlorobenzene	18.147	180	24677	2.50	ug/L	#	85
95) Naphthalene	18.805	128	38668	1.86	ug/L	#	92
96) 1,2,3-Trichlorobenzene	19.169	180	10735	1.85	ug/L	#	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX005.D
Acq On : 29 Mar 2021 10:04 am
Operator : KKW
Sample : CAL3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Mar 29 11:47:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX006.D
Acq On : 29 Mar 2021 10:31 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 11:49:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1312838	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2602591	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1563138	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1552067	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	706811	51.50	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.00%				
52) D8-Toluene	11.778	98	2957557	50.66	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.32%				
73) Bromofluorobenzene	14.328	95	1420293	49.09	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	146271	9.02	ug/L		98
3) Chloromethane	4.410	50	89288	8.81	ug/L		97
4) Vinyl Chloride	4.586	62	105794	8.26	ug/L	#	68
5) Bromomethane	5.227	94	56808	13.52	ug/L		91
6) Chloroethane	5.473	64	61346	7.77	ug/L		94
7) Trichlorofluoromethane	5.708	101	161086	8.31	ug/L		98
8) Diethyl ether	6.179	59	60478	9.13	ug/L		98
9) 1,1-Dichloroethene	6.537	96	88790	8.93	ug/L		97
10) Trichlorotrifluoroethane	6.555	151	63232	9.02	ug/L		98
11) Acrolein	7.019	56	131505	88.98	ug/L		98
12) Iodomethane	6.778	142	479389	73.63	ug/L		99
13) Carbon Disulfide	6.625	76	1526774	57.56	ug/L		98
14) 3-chloropropene	7.195	41	101438	10.08	ug/L		88
15) Acetone	7.395	43	89485	57.68	ug/L		96
16) Methylene Chloride	7.348	84	99409	8.20	ug/L		94
17) Methyl Acetate	7.518	43	38026	7.65	ug/L	#	81
18) t-1,2-Dichloroethene	7.548	96	96666	8.94	ug/L		100
19) Methyl tert-butyl ether	7.636	73	229561	9.18	ug/L		95
20) Acetonitrile	8.047	41	103747	92.00	ug/L	#	92
21) Isopropyl ether	8.053	45	189968	7.94	ug/L		98
22) Chloroprene	8.282	88	76493	8.81	ug/L	#	88
23) 1,1-Dichloroethane	8.311	63	168949	8.48	ug/L		95
24) Acrylonitrile	8.394	53	227456	76.85	ug/L		95
25) Vinyl Acetate	8.541	43	708931	50.48	ug/L		100
26) c-1,2-Dichloroethene	8.952	96	109502	8.83	ug/L		96
27) 2,2-Dichloropropane	9.075	77	161029	8.89	ug/L		99
28) Bromochloromethane	9.187	128	55518	9.97	ug/L		85
29) Cyclohexane	9.187	56	133647	8.61	ug/L	#	81
30) Chloroform	9.216	83	209739	9.20	ug/L		96
32) Dibromofluoromethane	9.434	113	706811	51.50	ug/L	#	89
33) 2-Butanone	9.557	72	51818	48.14	ug/L		87
34) 1,1,1-Trichloroethane	9.481	97	177056	9.34	ug/L		97
35) 1,1-Dichloropropene	9.610	75	142116	9.27	ug/L		97
36) Propionitrile	9.898	54	97374	87.01	ug/L		95
37) Methacrylonitrile	9.910	41	466488	89.07	ug/L		97
38) Isobutyl Alcohol	9.904	43	109843	197.79	ug/L	#	41
40) Carbon Tetrachloride	9.410	117	143765	9.87	ug/L		86
41) Benzene	9.874	78	431460	9.07	ug/L		99
42) 1,2-Dichloroethane	10.086	62	149145	9.59	ug/L		95
43) Trichloroethene	10.456	130	110333	8.82	ug/L	#	52
44) Methyl cyclohexane	10.450	83	229516	7.69	ug/L		91
45) Dibromomethane	10.903	93	63786	8.87	ug/L		95
46) 1,2-Dichloropropane	10.991	63	95181	8.79	ug/L	#	82
47) Bromodichloromethane	11.014	83	142014	9.20	ug/L		97
48) Methyl Methacrylate	11.085	69	44042	7.56	ug/L	#	78
49) 1,4-Dioxane	11.208	88	15150	146.68	ug/L		95
50) 2-Chloroethyl vinyl ether	11.490	63	268011	51.87	ug/L	#	95
51) C-1,3-Dichloropropene	11.613	75	169737	9.15	ug/L		94

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX006.D
Acq On : 29 Mar 2021 10:31 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 11:49:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

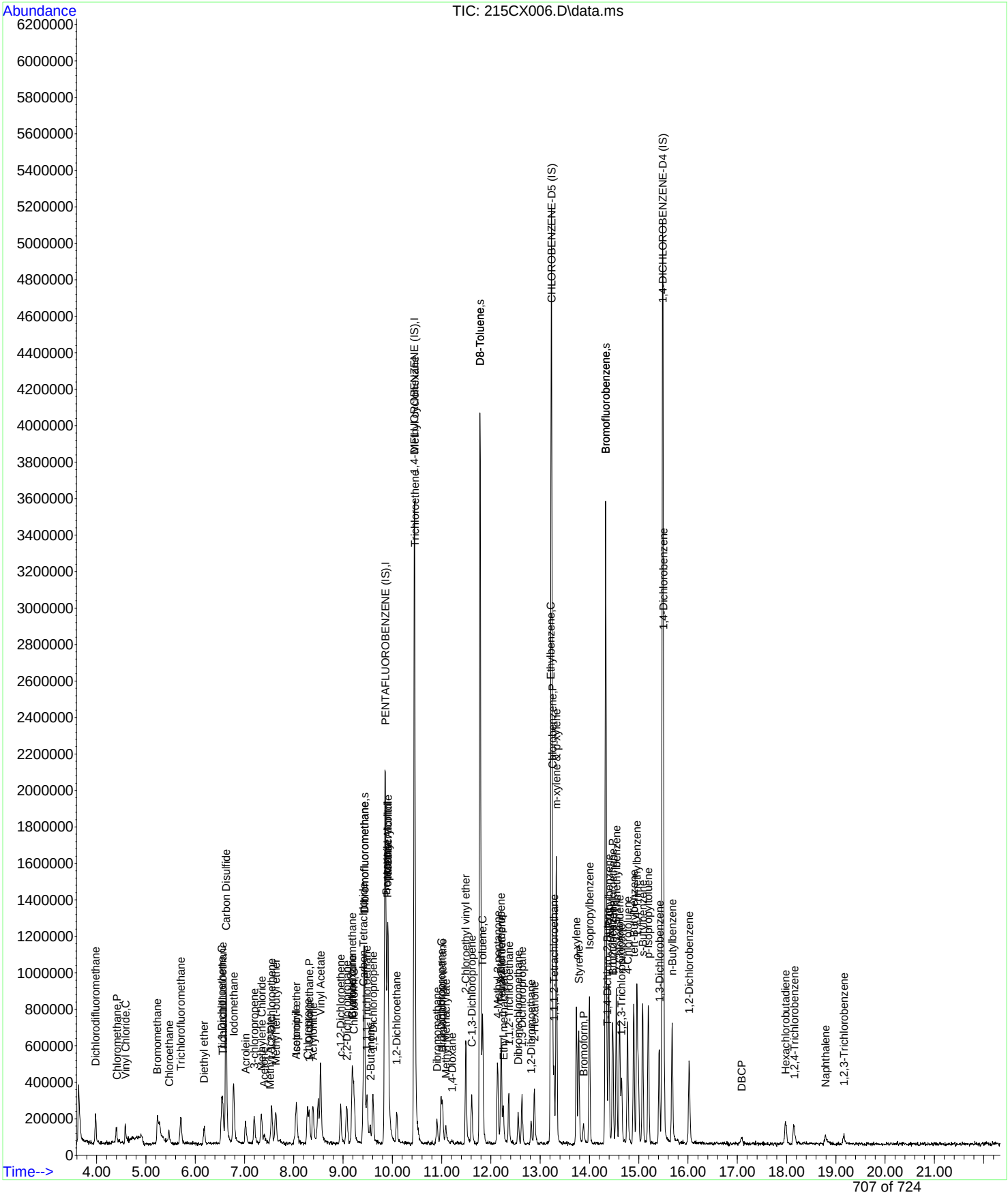
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	2957557	50.66	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	67685	42.25	ug/L		89
56) Toluene	11.831	92	276199	7.82	ug/L		92
57) T-1,3-Dichloropropene	12.201	75	157861	8.72	ug/L		97
58) Tetrachloroethene	12.213	164	80898	8.66	ug/L		96
59) Ethyl methacrylate	12.254	69	114796	7.94	ug/L		97
60) 1,1,2-Trichloroethane	12.366	97	96790	7.98	ug/L		98
61) Dibromochloromethane	12.554	129	101879	9.04	ug/L		94
62) 1,3-Dichloropropane	12.630	76	173716	8.84	ug/L		98
63) 1,2-Dibromoethane	12.812	107	93758	8.64	ug/L	#	100
64) 2-Hexanone	12.883	43	183191	35.65	ug/L		93
65) Ethylbenzene	13.212	106	172736	8.19	ug/L	#	91
66) Chlorobenzene	13.247	112	338149	8.36	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.282	131	105209	8.13	ug/L		93
68) m-xylene & p-xylene	13.329	106	505058	18.84	ug/L		94
69) o-xylene	13.735	106	214198	8.06	ug/L		94
70) Styrene	13.782	104	343805	7.98	ug/L		98
71) Bromoform	13.881	173	45658	7.98	ug/L	#	85
72) Isopropylbenzene	13.999	105	579330	8.47	ug/L		99
74) Bromofluorobenzene	14.328	95	1420293	49.09	ug/L		89
75) n-Propylbenzene	14.393	91	738420	7.97	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.469	83	134109	7.64	ug/L	#	96
77) 1,2,3-Trichloropropane	14.645	61	28151	7.91	ug/L		91
78) T-1,4-Dichloro-2-Butene	14.357	53	46415	10.19	ug/L	#	1
80) Bromobenzene	14.469	156	132106	7.97	ug/L		86
81) 1,2,4-Trimethylbenzene	14.963	105	535927	7.85	ug/L		96
82) 2-Chlorotoluene	14.610	91	453207	7.69	ug/L		98
83) 4-Chlorotoluene	14.775	91	456869	7.67	ug/L		100
84) tert-Butylbenzene	14.898	119	421423	7.68	ug/L		98
85) 1,3,5-Trimethylbenzene	14.545	105	510919	7.74	ug/L		95
86) p-Isopropyltoluene	15.192	119	538025	7.87	ug/L		98
87) s-Butylbenzene	15.080	105	612624	7.58	ug/L		98
88) 1,3-Dichlorobenzene	15.421	146	256171	7.45	ug/L		99
89) 1,4-Dichlorobenzene	15.503	146	286233	7.65	ug/L	#	63
90) n-Butylbenzene	15.679	91	472389	7.58	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	254747	8.30	ug/L		94
92) DBCP	17.090	157	14707	6.79	ug/L		92
93) Hexachlorobutadiene	17.977	225	28681	6.95	ug/L		96
94) 1,2,4-Trichlorobenzene	18.159	180	40015	3.98	ug/L		99
95) Naphthalene	18.788	128	83121	3.91	ug/L		98
96) 1,2,3-Trichlorobenzene	19.164	180	20119	3.40	ug/L	#	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX006.D
Acq On : 29 Mar 2021 10:31 am
Operator : KKW
Sample : CAL4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Mar 29 11:49:14 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX007.D
Acq On : 29 Mar 2021 10:59 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 11:52:17 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1341958	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2685709	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1578295	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1585703	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	850973	60.65	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 121.30%				
52) D8-Toluene	11.778	98	3690099	61.25	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 122.50%#				
73) Bromofluorobenzene	14.328	95	1741465	59.61	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 119.22%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	341772	20.63	ug/L		99
3) Chloromethane	4.398	50	196364	18.96	ug/L		95
4) Vinyl Chloride	4.580	62	259580	19.82	ug/L		92
5) Bromomethane	5.227	94	102243	23.80	ug/L		98
6) Chloroethane	5.456	64	156102	19.35	ug/L		97
7) Trichlorofluoromethane	5.708	101	387847	19.57	ug/L		98
8) Diethyl ether	6.178	59	150031	22.16	ug/L		95
9) 1,1-Dichloroethene	6.531	96	193025	18.99	ug/L		86
10) Trichlorotrifluoroethane	6.566	151	152193	21.25	ug/L		96
11) Acrolein	7.013	56	296679	196.39	ug/L		98
12) Iodomethane	6.778	142	1233574	185.36	ug/L		98
13) Carbon Disulfide	6.625	76	3301943	121.79	ug/L		98
14) 3-chloropropene	7.195	41	238579	23.19	ug/L		99
15) Acetone	7.395	43	169247	106.73	ug/L		97
16) Methylene Chloride	7.342	84	217479	17.55	ug/L		95
17) Methyl Acetate	7.524	43	73535	14.48	ug/L		91
18) t-1,2-Dichloroethene	7.548	96	218175	19.74	ug/L		96
19) Methyl tert-butyl ether	7.630	73	513925	20.11	ug/L		97
20) Acetonitrile	8.041	41	231916	201.20	ug/L		93
21) Isopropyl ether	8.047	45	463793	18.96	ug/L		99
22) Chloroprene	8.282	88	209725	23.62	ug/L		98
23) 1,1-Dichloroethane	8.311	63	383748	18.85	ug/L	#	98
24) Acrylonitrile	8.382	53	536011	177.17	ug/L		99
25) Vinyl Acetate	8.540	43	1624154	113.14	ug/L		100
26) c-1,2-Dichloroethene	8.952	96	238649	18.82	ug/L		95
27) 2,2-Dichloropropane	9.075	77	392785	21.21	ug/L		97
28) Bromochloromethane	9.193	128	115066	20.22	ug/L		94
29) Cyclohexane	9.193	56	319650	20.15	ug/L		87
30) Chloroform	9.222	83	457145	19.61	ug/L		98
32) Dibromofluoromethane	9.422	113	850973	60.65	ug/L	#	88
33) 2-Butanone	9.545	72	112013	101.80	ug/L		79
34) 1,1,1-Trichloroethane	9.486	97	418695	21.61	ug/L		98
35) 1,1-Dichloropropene	9.604	75	353575	22.55	ug/L		95
36) Propionitrile	9.898	54	209568	183.20	ug/L		93
37) Methacrylonitrile	9.909	41	1027557	191.94	ug/L		96
38) Isobutyl Alcohol	9.898	43	232440	409.47	ug/L	#	81
40) Carbon Tetrachloride	9.410	117	322273m	21.44	ug/L		
41) Benzene	9.880	78	989312	20.16	ug/L		99
42) 1,2-Dichloroethane	10.086	62	338745	21.11	ug/L		96
43) Trichloroethene	10.456	130	261850	20.28	ug/L		84
44) Methyl cyclohexane	10.456	83	478241	15.52	ug/L		99
45) Dibromomethane	10.902	93	139825	18.84	ug/L		98
46) 1,2-Dichloropropane	10.985	63	218455	19.54	ug/L	#	89
47) Bromodichloromethane	11.014	83	340787	21.39	ug/L		98
48) Methyl Methacrylate	11.079	69	118251	19.67	ug/L		97
49) 1,4-Dioxane	11.208	88	21159	198.52	ug/L		89
50) 2-Chloroethyl vinyl ether	11.490	63	623649	116.96	ug/L	#	94
51) C-1,3-Dichloropropene	11.613	75	397363	20.77	ug/L		93

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX007.D
Acq On : 29 Mar 2021 10:59 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 11:52:17 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

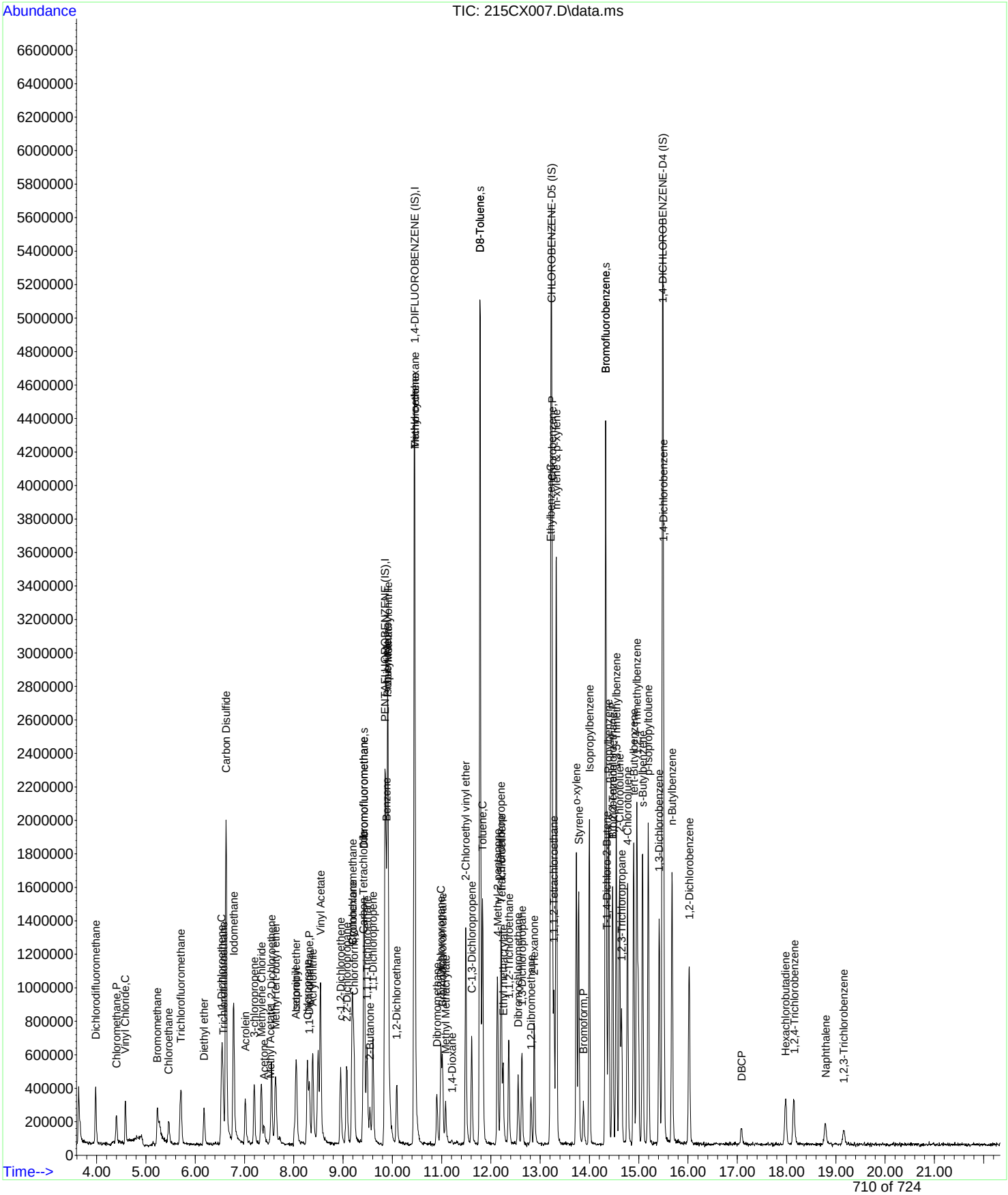
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	3690099	61.25 ug/L	97
54) 4-Methyl-2-pentanone	12.136	100	130988	79.24 ug/L	95
56) Toluene	11.831	92	651706	18.27 ug/L	99
57) T-1,3-Dichloropropene	12.201	75	331843	18.16 ug/L	98
58) Tetrachloroethene	12.213	164	193851	20.55 ug/L	99
59) Ethyl methacrylate	12.248	69	251711	17.23 ug/L	95
60) 1,1,2-Trichloroethane	12.365	97	227096	18.53 ug/L	93
61) Dibromochloromethane	12.554	129	223598	19.65 ug/L	99
62) 1,3-Dichloropropane	12.630	76	366030	18.45 ug/L	99
63) 1,2-Dibromoethane	12.812	107	212782	19.42 ug/L #	95
64) 2-Hexanone	12.877	43	435827	84.00 ug/L	98
65) Ethylbenzene	13.212	106	403504	18.95 ug/L	98
66) Chlorobenzene	13.241	112	766525	18.78 ug/L	99
67) 1,1,1,2-Tetrachloroethane	13.276	131	244117	18.69 ug/L	98
68) m-xylene & p-xylene	13.329	106	1078933	39.87 ug/L	95
69) o-xylene	13.735	106	503860	18.79 ug/L	95
70) Styrene	13.781	104	838716	19.29 ug/L	98
71) Bromoform	13.876	173	106349	18.41 ug/L	90
72) Isopropylbenzene	13.999	105	1309786	18.97 ug/L	98
74) Bromofluorobenzene	14.328	95	1741465	59.61 ug/L	87
75) n-Propylbenzene	14.387	91	1713353	18.31 ug/L	98
76) 1,1,2,2-Tetrachloroethane	14.469	83	293476	16.55 ug/L	97
77) 1,2,3-Trichloropropane	14.651	61	62412	17.36 ug/L	90
78) T-1,4-Dichloro-2-Butene	14.351	53	91059	19.80 ug/L #	16
80) Bromobenzene	14.469	156	310067	18.31 ug/L	86
81) 1,2,4-Trimethylbenzene	14.962	105	1273442	18.26 ug/L	98
82) 2-Chlorotoluene	14.610	91	1038424	17.25 ug/L	99
83) 4-Chlorotoluene	14.769	91	1060440	17.42 ug/L	99
84) tert-Butylbenzene	14.898	119	1007159	17.96 ug/L	95
85) 1,3,5-Trimethylbenzene	14.545	105	1248765	18.52 ug/L	99
86) p-Isopropyltoluene	15.192	119	1276958	18.28 ug/L	99
87) s-Butylbenzene	15.080	105	1453495	17.60 ug/L	98
88) 1,3-Dichlorobenzene	15.415	146	638934	18.18 ug/L	96
89) 1,4-Dichlorobenzene	15.503	146	650974	17.03 ug/L #	89
90) n-Butylbenzene	15.673	91	1148091	18.03 ug/L	98
91) 1,2-Dichlorobenzene	16.026	146	562497	17.94 ug/L	99
92) DBCP	17.089	157	34216	15.46 ug/L	88
93) Hexachlorobutadiene	17.977	225	66113	15.69 ug/L	89
94) 1,2,4-Trichlorobenzene	18.153	180	129953	12.65 ug/L	95
95) Naphthalene	18.793	128	188810	8.70 ug/L	96
96) 1,2,3-Trichlorobenzene	19.158	180	47927	7.92 ug/L	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX007.D
Acq On : 29 Mar 2021 10:59 am
Operator : KKW
Sample : CAL5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Mar 29 11:52:17 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX008.D
Acq On : 29 Mar 2021 11:27 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 11:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1384465	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2848520	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1764069	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1623575	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	728045	50.30	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.60%				
52) D8-Toluene	11.778	98	3242314	50.75	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.50%				
73) Bromofluorobenzene	14.328	95	1610221	49.32	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.64%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	842942	49.31	ug/L		99
3) Chloromethane	4.398	50	552902	51.76	ug/L		98
4) Vinyl Chloride	4.580	62	686245	50.79	ug/L		98
5) Bromomethane	5.233	94	269854	60.90	ug/L		94
6) Chloroethane	5.462	64	376843	45.27	ug/L		97
7) Trichlorofluoromethane	5.697	101	1015430	49.66	ug/L		98
8) Diethyl ether	6.173	59	406771	58.25	ug/L		98
9) 1,1-Dichloroethene	6.531	96	574697	54.80	ug/L		98
10) Trichlorotrifluoroethane	6.555	151	411632	55.70	ug/L		100
11) Acrolein	7.013	56	873587	560.54	ug/L		99
12) Iodomethane	6.778	142	3433689	500.13	ug/L		98
13) Carbon Disulfide	6.619	76	8583239	306.87	ug/L		99
14) 3-chloropropene	7.195	41	636804	60.00	ug/L		92
15) Acetone	7.389	43	469054	286.71	ug/L		98
16) Methylene Chloride	7.342	84	641023	50.13	ug/L		99
17) Methyl Acetate	7.518	43	235666	44.98	ug/L		96
18) t-1,2-Dichloroethene	7.542	96	658966	57.79	ug/L		97
19) Methyl tert-butyl ether	7.624	73	1474475	55.92	ug/L		96
20) Acetonitrile	8.035	41	648052	544.95	ug/L		98
21) Isopropyl ether	8.047	45	1469055	58.20	ug/L		97
22) Chloroprene	8.270	88	579314	63.24	ug/L		97
23) 1,1-Dichloroethane	8.311	63	1093844	52.08	ug/L		99
24) Acrylonitrile	8.382	53	1600092	512.65	ug/L		96
25) Vinyl Acetate	8.535	43	4666030	315.06	ug/L		100
26) c-1,2-Dichloroethene	8.946	96	765683	58.54	ug/L		98
27) 2,2-Dichloropropane	9.069	77	1102146	57.70	ug/L		97
28) Bromochloromethane	9.181	128	336951	57.41	ug/L		98
29) Cyclohexane	9.187	56	1035473	63.27	ug/L		95
30) Chloroform	9.216	83	1325941	55.13	ug/L		97
32) Dibromofluoromethane	9.422	113	728045	50.30	ug/L	#	88
33) 2-Butanone	9.539	72	289952	255.42	ug/L		96
34) 1,1,1-Trichloroethane	9.487	97	1171604	58.61	ug/L		97
35) 1,1-Dichloropropene	9.604	75	999273	61.78	ug/L		95
36) Propionitrile	9.892	54	594327	503.58	ug/L		94
37) Methacrylonitrile	9.904	41	2876734	520.86	ug/L		100
38) Isobutyl Alcohol	9.898	43	680971	1162.78	ug/L		99
40) Carbon Tetrachloride	9.410	117	899858m	56.43	ug/L		
41) Benzene	9.874	78	2713781	52.14	ug/L		99
42) 1,2-Dichloroethane	10.086	62	959854	56.40	ug/L		98
43) Trichloroethene	10.450	130	726957	53.09	ug/L		98
44) Methyl cyclohexane	10.450	83	1355811	41.48	ug/L		99
45) Dibromomethane	10.903	93	418135	53.12	ug/L		95
46) 1,2-Dichloropropane	10.985	63	652295	55.02	ug/L		92
47) Bromodichloromethane	11.014	83	945356	55.94	ug/L		100
48) Methyl Methacrylate	11.079	69	355145	55.69	ug/L		93
49) 1,4-Dioxane	11.196	88	69769	617.19	ug/L		88
50) 2-Chloroethyl vinyl ether	11.490	63	1798613	318.02	ug/L		97
51) C-1,3-Dichloropropene	11.608	75	1246629	61.43	ug/L		97

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX008.D
Acq On : 29 Mar 2021 11:27 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 11:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

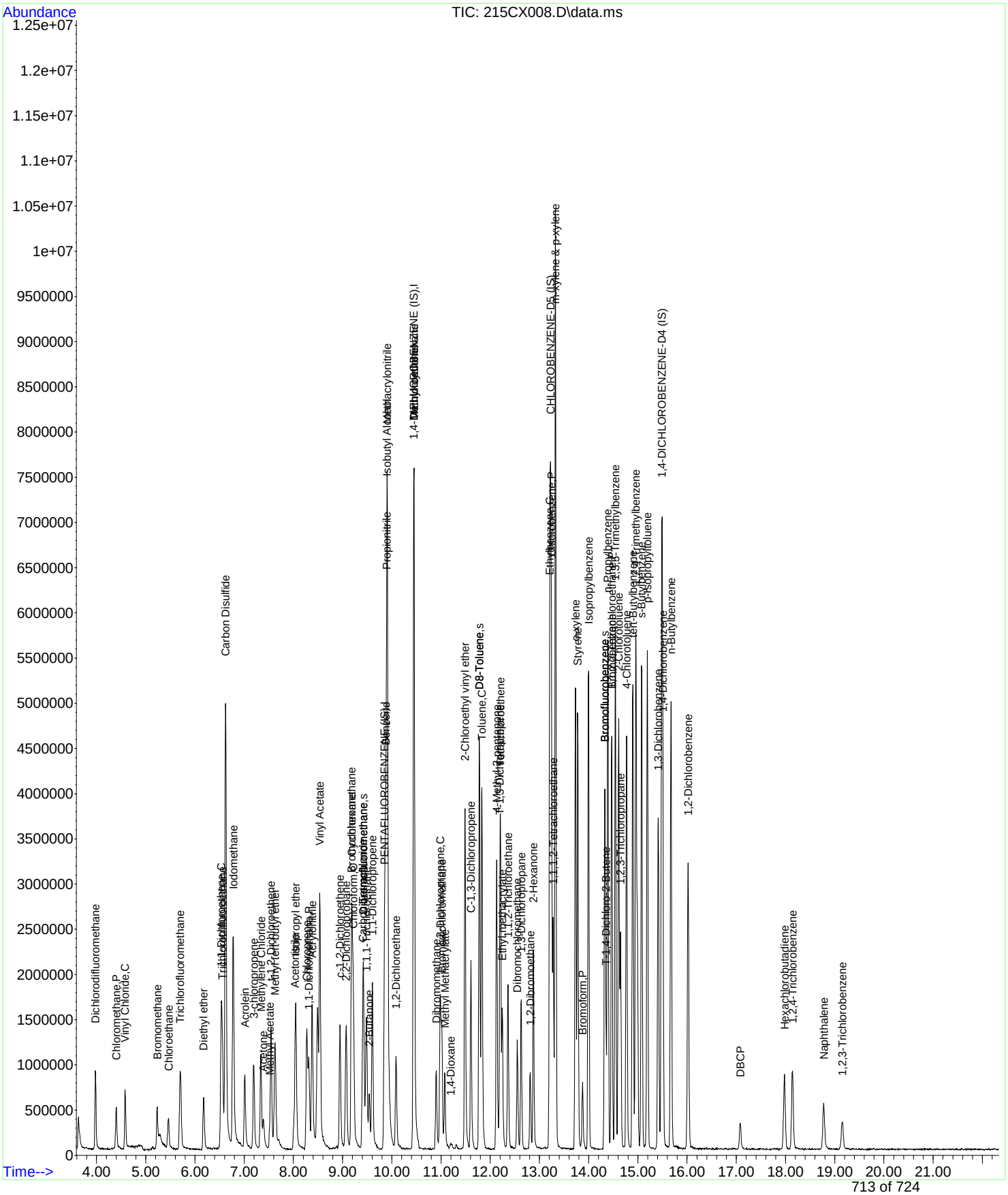
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3242314	50.75	ug/L		96
54) 4-Methyl-2-pentanone	12.131	100	410982	234.42	ug/L		97
56) Toluene	11.831	92	1940713	48.68	ug/L		98
57) T-1,3-Dichloropropene	12.195	75	1061780	51.99	ug/L		99
58) Tetrachloroethene	12.207	164	571752	54.23	ug/L		94
59) Ethyl methacrylate	12.242	69	779001	47.72	ug/L		98
60) 1,1,2-Trichloroethane	12.360	97	615765	44.96	ug/L		97
61) Dibromochloromethane	12.548	129	674618	53.03	ug/L		98
62) 1,3-Dichloropropane	12.630	76	1067862	48.16	ug/L		98
63) 1,2-Dibromoethane	12.812	107	632018	51.61	ug/L		100
64) 2-Hexanone	12.877	43	1289537	222.37	ug/L		97
65) Ethylbenzene	13.206	106	1198114	50.34	ug/L		99
66) Chlorobenzene	13.241	112	2151820	47.16	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	695958	47.68	ug/L		99
68) m-xylene & p-xylene	13.323	106	3087416	102.07	ug/L		95
69) o-xylene	13.735	106	1531316	51.08	ug/L		94
70) Styrene	13.776	104	2570695	52.89	ug/L		99
71) Bromoform	13.876	173	331344	51.33	ug/L		99
72) Isopropylbenzene	13.999	105	3920413	50.79	ug/L		98
74) Bromofluorobenzene	14.328	95	1610221	49.32	ug/L	#	83
75) n-Propylbenzene	14.387	91	4940807	47.24	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	831225	41.94	ug/L		95
77) 1,2,3-Trichloropropane	14.645	61	154264	38.40	ug/L		92
78) T-1,4-Dichloro-2-Butene	14.352	53	266675	51.89	ug/L		94
80) Bromobenzene	14.469	156	856231	49.38	ug/L		93
81) 1,2,4-Trimethylbenzene	14.957	105	3715069	52.03	ug/L		99
82) 2-Chlorotoluene	14.610	91	3033603	49.23	ug/L		100
83) 4-Chlorotoluene	14.769	91	3131630	50.23	ug/L		99
84) tert-Butylbenzene	14.898	119	2935131	51.12	ug/L		98
85) 1,3,5-Trimethylbenzene	14.540	105	3609085	52.28	ug/L		98
86) p-Isopropyltoluene	15.192	119	3730231	52.16	ug/L		99
87) s-Butylbenzene	15.074	105	4331184	51.21	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	1791109	49.78	ug/L		98
89) 1,4-Dichlorobenzene	15.509	146	1809117	46.22	ug/L		99
90) n-Butylbenzene	15.674	91	3446768	52.86	ug/L		100
91) 1,2-Dichlorobenzene	16.020	146	1610197	50.14	ug/L		98
92) DBCP	17.084	157	108086	47.69	ug/L		92
93) Hexachlorobutadiene	17.983	225	180511	41.84	ug/L		97
94) 1,2,4-Trichlorobenzene	18.141	180	388825	36.96	ug/L		97
95) Naphthalene	18.782	128	694114	31.24	ug/L		98
96) 1,2,3-Trichlorobenzene	19.152	180	154391	24.93	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX008.D
Acq On : 29 Mar 2021 11:27 am
Operator : KKW
Sample : CAL6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Mar 29 11:54:18 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX009.D
Acq On : 29 Mar 2021 11:55 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 12:45:44 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1475861	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2951865	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1901860	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1612454	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	1031600	66.86	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 133.72%#				
52) D8-Toluene	11.778	98	4514974	68.19	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 136.38%#				
73) Bromofluorobenzene	14.328	95	2181540	61.97	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 123.94%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	1485656	81.53	ug/L		100
3) Chloromethane	4.398	50	1139772	100.09	ug/L		99
4) Vinyl Chloride	4.580	62	1272503	88.34	ug/L		93
5) Bromomethane	5.227	94	485611	102.80	ug/L		93
6) Chloroethane	5.450	64	613935	69.19	ug/L		98
7) Trichlorofluoromethane	5.697	101	1826383	83.78	ug/L		99
8) Diethyl ether	6.173	59	808372	108.58	ug/L		98
9) 1,1-Dichloroethene	6.531	96	1119106	100.10	ug/L		96
10) Trichlorotrifluoroethane	6.555	151	796608	101.12	ug/L		94
11) Acrolein	7.013	56	1870875	1126.10	ug/L		100
12) Iodomethane	6.772	142	6280278	858.09	ug/L		97
13) Carbon Disulfide	6.619	76	15918696	533.88	ug/L		98
14) 3-chloropropene	7.189	41	1390821	122.93	ug/L		94
15) Acetone	7.389	43	989665	567.47	ug/L		97
16) Methylene Chloride	7.336	84	1202925	88.25	ug/L		98
17) Methyl Acetate	7.512	43	508512	91.05	ug/L		95
18) t-1,2-Dichloroethene	7.542	96	1258334	103.51	ug/L		99
19) Methyl tert-butyl ether	7.624	73	2910757	103.55	ug/L		96
20) Acetonitrile	8.006	41	1384133	1091.85	ug/L		94
21) Isopropyl ether	8.047	45	3009476	111.85	ug/L		96
22) Chloroprene	8.270	88	1189400	121.79	ug/L		93
23) 1,1-Dichloroethane	8.311	63	2081031	92.95	ug/L		97
24) Acrylonitrile	8.376	53	3202176	962.41	ug/L		99
25) Vinyl Acetate	8.535	43	9719633	615.65	ug/L		99
26) c-1,2-Dichloroethene	8.946	96	1406650	100.88	ug/L		98
27) 2,2-Dichloropropane	9.069	77	2037088	100.03	ug/L		98
28) Bromochloromethane	9.181	128	571310	91.30	ug/L		99
29) Cyclohexane	9.187	56	2054573	117.77	ug/L		99
30) Chloroform	9.216	83	2347997	91.58	ug/L		100
32) Dibromofluoromethane	9.428	113	1031600	66.86	ug/L	#	91
33) 2-Butanone	9.539	72	599005	495.00	ug/L		96
34) 1,1,1-Trichloroethane	9.481	97	2010983	94.38	ug/L		99
35) 1,1-Dichloropropene	9.604	75	1816195	105.33	ug/L		97
36) Propionitrile	9.898	54	1256915	999.06	ug/L		94
37) Methacrylonitrile	9.910	41	5854263	994.32	ug/L		99
38) Isobutyl Alcohol	9.898	43	1381188	2212.36	ug/L		91
40) Carbon Tetrachloride	9.410	117	1625229m	98.36	ug/L		
41) Benzene	9.874	78	5031509	93.29	ug/L		98
42) 1,2-Dichloroethane	10.086	62	1674117	94.93	ug/L		97
43) Trichloroethene	10.450	130	1263132	89.02	ug/L		98
44) Methyl cyclohexane	10.450	83	2460234	72.64	ug/L		97
45) Dibromomethane	10.903	93	751649	92.15	ug/L		96
46) 1,2-Dichloropropane	10.979	63	1242461	101.13	ug/L		97
47) Bromodichloromethane	11.014	83	1713108	97.81	ug/L		99
48) Methyl Methacrylate	11.073	69	757694	114.65	ug/L		96
49) 1,4-Dioxane	11.196	88	148872	1270.83	ug/L		91
50) 2-Chloroethyl vinyl ether	11.484	63	3521335	600.83	ug/L	#	98
51) C-1,3-Dichloropropene	11.608	75	2258752	107.41	ug/L		97

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX009.D
Acq On : 29 Mar 2021 11:55 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 12:45:44 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

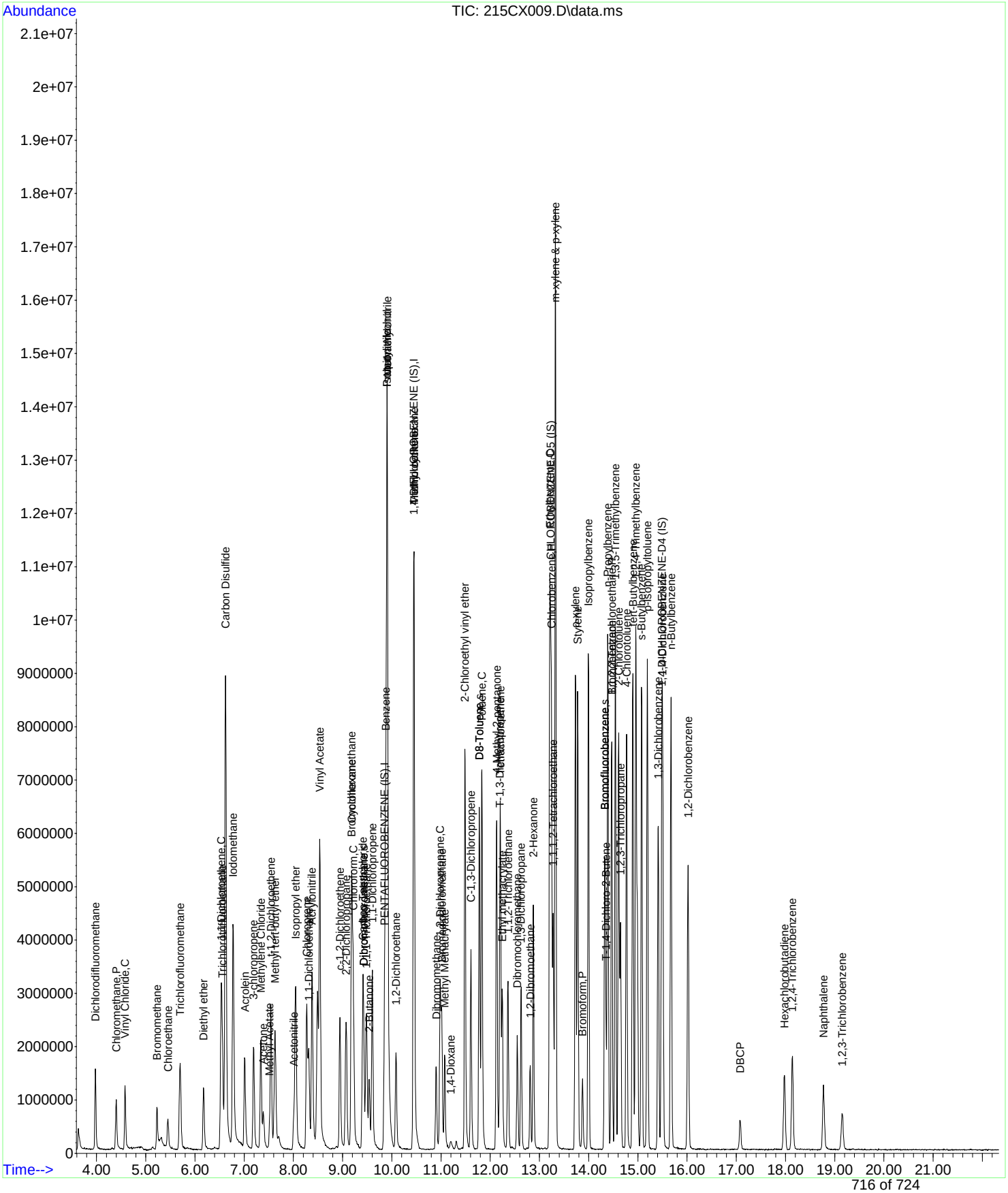
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	4514974	68.19	ug/L		95
54) 4-Methyl-2-pentanone	12.131	100	779123	428.84	ug/L		94
56) Toluene	11.831	92	3437034	79.96	ug/L		99
57) T-1,3-Dichloropropene	12.195	75	1863668	84.64	ug/L		98
58) Tetrachloroethene	12.207	164	901856	79.34	ug/L		98
59) Ethyl methacrylate	12.242	69	1491944	84.76	ug/L		98
60) 1,1,2-Trichloroethane	12.360	97	1099043	74.44	ug/L		98
61) Dibromochloromethane	12.548	129	1180197	86.06	ug/L		99
62) 1,3-Dichloropropane	12.624	76	1963919	82.15	ug/L		98
63) 1,2-Dibromoethane	12.812	107	1150044	87.10	ug/L		96
64) 2-Hexanone	12.877	43	2705378	432.71	ug/L		97
65) Ethylbenzene	13.212	106	2152550	83.88	ug/L		97
66) Chlorobenzene	13.241	112	3630202	73.80	ug/L		97
67) 1,1,1,2-Tetrachloroethane	13.276	131	1245262	79.13	ug/L		97
68) m-xylene & p-xylene	13.323	106	5211593	159.81	ug/L		96
69) o-xylene	13.729	106	2674133	82.75	ug/L		95
70) Styrene	13.776	104	4531457	86.48	ug/L		96
71) Bromoform	13.870	173	596579	85.72	ug/L		99
72) Isopropylbenzene	13.993	105	6791634	81.61	ug/L		99
74) Bromofluorobenzene	14.328	95	2181540	61.97	ug/L	#	80
75) n-Propylbenzene	14.387	91	8375149	74.28	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	1480206	69.27	ug/L		98
77) 1,2,3-Trichloropropane	14.645	61	288725	66.67	ug/L		97
78) T-1,4-Dichloro-2-Butene	14.351	53	498418	89.95	ug/L		90
80) Bromobenzene	14.469	156	1371652	79.64	ug/L		99
81) 1,2,4-Trimethylbenzene	14.957	105	6092350	85.91	ug/L		98
82) 2-Chlorotoluene	14.610	91	5152323	84.18	ug/L		99
83) 4-Chlorotoluene	14.769	91	5326313	86.03	ug/L		99
84) tert-Butylbenzene	14.898	119	5004479	87.76	ug/L		99
85) 1,3,5-Trimethylbenzene	14.539	105	6165805	89.93	ug/L		99
86) p-Isopropyltoluene	15.192	119	6207269	87.39	ug/L		98
87) s-Butylbenzene	15.074	105	7153826	85.17	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	2853426	79.85	ug/L		98
89) 1,4-Dichlorobenzene	15.503	146	2851550	73.35	ug/L		97
90) n-Butylbenzene	15.673	91	5819869	89.88	ug/L		98
91) 1,2-Dichlorobenzene	16.020	146	2592618	81.29	ug/L		96
92) DBCP	17.078	157	198362	88.13	ug/L		98
93) Hexachlorobutadiene	17.977	225	289227	67.50	ug/L		92
94) 1,2,4-Trichlorobenzene	18.135	180	727936	69.67	ug/L		98
95) Naphthalene	18.770	128	1552491	70.35	ug/L		97
96) 1,2,3-Trichlorobenzene	19.146	180	319289	51.92	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX009.D
Acq On : 29 Mar 2021 11:55 am
Operator : KKW
Sample : CAL7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Mar 29 12:45:44 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX010.D
Acq On : 29 Mar 2021 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 12:47:49 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1386898	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	3049005	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1978990	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1622439	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.422	113	1111651	76.66	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 153.32%#				
52) D8-Toluene	11.778	98	4914517	71.86	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 143.72%#				
73) Bromofluorobenzene	14.328	95	2410601	65.81	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 131.62%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	1890288	110.39	ug/L		98
3) Chloromethane	4.398	50	1588645	148.46	ug/L		100
4) Vinyl Chloride	4.580	62	1638442	121.04	ug/L		93
5) Bromomethane	5.227	94	652519	147.00	ug/L		95
6) Chloroethane	5.444	64	799016	95.82	ug/L		98
7) Trichlorofluoromethane	5.697	101	2307699	112.65	ug/L		97
8) Diethyl ether	6.173	59	1093484	156.30	ug/L		96
9) 1,1-Dichloroethene	6.531	96	1323269	125.95	ug/L		91
10) Trichlorotrifluoroethane	6.549	151	912022	123.20	ug/L		97
11) Acrolein	7.013	56	2505190	1604.63	ug/L		100
12) Iodomethane	6.772	142	7576945	1101.67	ug/L		98
13) Carbon Disulfide	6.619	76	19269836	687.73	ug/L		98
14) 3-chloropropene	7.195	41	1839726	173.04	ug/L		92
15) Acetone	7.389	43	1321029	806.06	ug/L		96
16) Methylene Chloride	7.336	84	1521290	118.76	ug/L		97
17) Methyl Acetate	7.512	43	732691	139.61	ug/L		92
18) t-1,2-Dichloroethene	7.547	96	1524850	133.48	ug/L		96
19) Methyl tert-butyl ether	7.624	73	3821172	144.66	ug/L		97
20) Acetonitrile	8.012	41	1851668	1554.36	ug/L		94
21) Isopropyl ether	8.047	45	4076861	161.23	ug/L		94
22) Chloroprene	8.270	88	1480488	161.32	ug/L		97
23) 1,1-Dichloroethane	8.311	63	2706450	128.64	ug/L		99
24) Acrylonitrile	8.382	53	4169767	1333.60	ug/L		99
25) Vinyl Acetate	8.535	43	12594425	848.91	ug/L		98
26) c-1,2-Dichloroethene	8.946	96	1775326	135.49	ug/L		98
27) 2,2-Dichloropropane	9.075	77	2524614	131.93	ug/L		96
28) Bromochloromethane	9.181	128	728060	123.82	ug/L		99
29) Cyclohexane	9.187	56	2622326	159.96	ug/L		98
30) Chloroform	9.216	83	2960563	122.87	ug/L		99
32) Dibromofluoromethane	9.422	113	1111651	76.66	ug/L	#	87
33) 2-Butanone	9.533	72	778174	684.30	ug/L		92
34) 1,1,1-Trichloroethane	9.481	97	2495163	124.61	ug/L		98
35) 1,1-Dichloropropene	9.604	75	2267072	139.92	ug/L		95
36) Propionitrile	9.892	54	1644906	1391.32	ug/L		94
37) Methacrylonitrile	9.909	41	7473226	1350.71	ug/L		98
38) Isobutyl Alcohol	9.904	43	1822705	3106.86	ug/L	#	88
40) Carbon Tetrachloride	9.416	117	1996926m	117.00	ug/L		
41) Benzene	9.874	78	6221829	111.69	ug/L		97
42) 1,2-Dichloroethane	10.086	62	2156197	118.37	ug/L		97
43) Trichloroethene	10.450	130	1523477	103.94	ug/L		98
44) Methyl cyclohexane	10.450	83	3066067	87.64	ug/L		94
45) Dibromomethane	10.902	93	966159	114.68	ug/L		95
46) 1,2-Dichloropropane	10.985	63	1620801	127.72	ug/L		97
47) Bromodichloromethane	11.014	83	2209609	122.14	ug/L		98
48) Methyl Methacrylate	11.073	69	982679	143.95	ug/L		94
49) 1,4-Dioxane	11.190	88	196409	1623.21	ug/L		100
50) 2-Chloroethyl vinyl ether	11.484	63	4549835	751.58	ug/L		97
51) C-1,3-Dichloropropene	11.608	75	2873280	132.28	ug/L		96

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX010.D
Acq On : 29 Mar 2021 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 12:47:49 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration

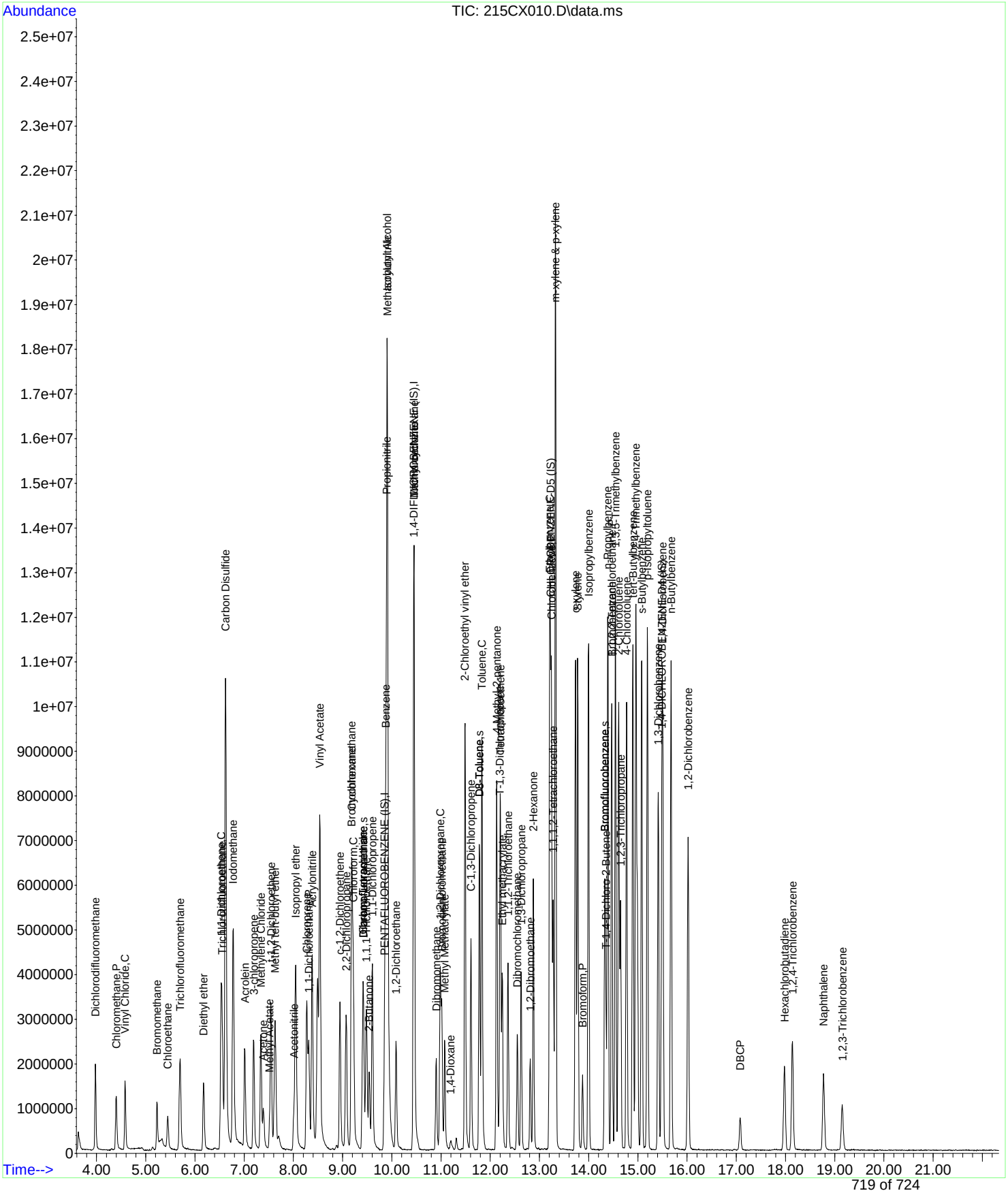
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	4914517	71.86	ug/L		96
54) 4-Methyl-2-pentanone	12.130	100	989389	527.22	ug/L		91
56) Toluene	11.831	92	4263738	95.33	ug/L		99
57) T-1,3-Dichloropropene	12.195	75	2407358	105.08	ug/L		98
58) Tetrachloroethene	12.207	164	1102763	93.24	ug/L		97
59) Ethyl methacrylate	12.242	69	2002770	109.35	ug/L		99
60) 1,1,2-Trichloroethane	12.360	97	1412981	91.97	ug/L		96
61) Dibromochloromethane	12.548	129	1516317	106.26	ug/L		97
62) 1,3-Dichloropropane	12.630	76	2528502	101.65	ug/L		96
63) 1,2-Dibromoethane	12.812	107	1466843	106.77	ug/L		99
64) 2-Hexanone	12.877	43	3568440	548.51	ug/L		96
65) Ethylbenzene	13.206	106	2625240	98.31	ug/L		98
66) Chlorobenzene	13.241	112	4508166	88.07	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	1530712	93.48	ug/L		98
68) m-xylene & p-xylene	13.323	106	6344102	186.95	ug/L		99
69) o-xylene	13.734	106	3279328	97.52	ug/L		94
70) Styrene	13.776	104	5741345	105.30	ug/L		93
71) Bromoform	13.875	173	765955	105.77	ug/L		97
72) Isopropylbenzene	13.999	105	8323991	96.13	ug/L		98
74) Bromofluorobenzene	14.328	95	2410601	65.81	ug/L	#	78
75) n-Propylbenzene	14.387	91	10392486	88.58	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	1897625	85.34	ug/L		96
77) 1,2,3-Trichloropropane	14.651	61	341524	75.78	ug/L		88
78) T-1,4-Dichloro-2-Butene	14.351	53	654373	113.50	ug/L		86
80) Bromobenzene	14.469	156	1746924	100.81	ug/L		94
81) 1,2,4-Trimethylbenzene	14.957	105	7643545	107.12	ug/L		99
82) 2-Chlorotoluene	14.610	91	6567349	106.64	ug/L		98
83) 4-Chlorotoluene	14.769	91	6886222	110.54	ug/L		98
84) tert-Butylbenzene	14.898	119	6250695	108.94	ug/L		96
85) 1,3,5-Trimethylbenzene	14.545	105	7704271	111.68	ug/L		99
86) p-Isopropyltoluene	15.192	119	7785002	108.93	ug/L		97
87) s-Butylbenzene	15.080	105	9097191	107.64	ug/L		98
88) 1,3-Dichlorobenzene	15.415	146	3692933	102.70	ug/L		97
89) 1,4-Dichlorobenzene	15.503	146	3714068	94.95	ug/L		97
90) n-Butylbenzene	15.673	91	7528858	115.55	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	3395884	105.83	ug/L		96
92) DBCP	17.078	157	250712	110.70	ug/L		98
93) Hexachlorobutadiene	17.983	225	390216	90.51	ug/L		93
94) 1,2,4-Trichlorobenzene	18.141	180	1049255	99.81	ug/L		98
95) Naphthalene	18.770	128	2248338	101.25	ug/L		98
96) 1,2,3-Trichlorobenzene	19.158	180	472295	76.32	ug/L		93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX010.D
Acq On : 29 Mar 2021 12:22 pm
Operator : KKW
Sample : CAL8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Mar 29 12:47:49 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 11:41:48 2021
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX012.D
Acq On : 29 Mar 2021 1:33 pm
Operator : KKW
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 29 13:57:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1380525	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2976518	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1834661	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1578523	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	799440	55.77	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 111.54%				
52) D8-Toluene	11.784	98	3514039	53.83	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 107.66%				
73) Bromofluorobenzene	14.334	95	1669634	52.16	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.32%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	872431	52.63	ug/L		99
3) Chloromethane	4.404	50	643787	55.35	ug/L		97
4) Vinyl Chloride	4.586	62	791362	56.57	ug/L		100
5) Bromomethane	5.233	94	233467	44.12	ug/L		90
6) Chloroethane	5.468	64	466748	59.94	ug/L		99
7) Trichlorofluoromethane	5.708	101	1120360	56.28	ug/L		98
8) Diethyl ether	6.178	59	458100	54.45	ug/L		99
9) 1,1-Dichloroethene	6.537	96	599931	53.47	ug/L		97
10) Trichlorotrifluoroethane	6.566	151	404937	44.97	ug/L		97
11) Acrolein	7.019	56	358702	249.48	ug/L		97
12) Iodomethane	6.784	142	832309	56.66	ug/L		99
13) Carbon Disulfide	6.625	76	1864684	52.75	ug/L		99
14) 3-chloropropene	7.195	41	859470	60.04	ug/L		89
15) Acetone	7.395	43	641590	306.61	ug/L		100
16) Methylene Chloride	7.342	84	676959	52.70	ug/L		87
17) Methyl Acetate	7.518	43	314185	60.12	ug/L	#	89
18) t-1,2-Dichloroethene	7.547	96	668456	50.68	ug/L		92
19) Methyl tert-butyl ether	7.630	73	1648300	54.38	ug/L		98
20) Acetonitrile	8.047	41	546264	430.93	ug/L		96
21) Isopropyl ether	8.053	45	1827868	58.79	ug/L		96
22) Chloroprene	8.276	88	640990	53.14	ug/L		99
23) 1,1-Dichloroethane	8.317	63	1225013	54.99	ug/L		99
24) Acrylonitrile	8.394	53	198729	81.93	ug/L	#	92
25) Vinyl Acetate	8.546	43	965458	65.92	ug/L		99
26) c-1,2-Dichloroethene	8.952	96	767660	51.31	ug/L		95
27) 2,2-Dichloropropane	9.075	77	1121537	51.07	ug/L		99
28) Bromochloromethane	9.187	128	338295	48.62	ug/L		96
29) Cyclohexane	9.199	56	1247627	58.21	ug/L		94
30) Chloroform	9.222	83	1334330	49.33	ug/L		99
32) Dibromofluoromethane	9.428	113	799440	55.77	ug/L	#	91
33) 2-Butanone	9.545	72	335903	272.86	ug/L		91
34) 1,1,1-Trichloroethane	9.486	97	1107678	48.04	ug/L		97
35) 1,1-Dichloropropene	9.604	75	1016089	51.42	ug/L		97
36) Propionitrile	9.904	54	70775	80.13	ug/L	#	1
37) Methacrylonitrile	9.915	41	496443	106.48	ug/L	#	70
38) Isobutyl Alcohol	9.904	43	544328	834.57	ug/L		89
40) Carbon Tetrachloride	9.416	117	879898	45.13	ug/L		98
41) Benzene	9.880	78	2935126	48.17	ug/L		97
42) 1,2-Dichloroethane	10.092	62	956112	45.81	ug/L		97
43) Trichloroethene	10.450	130	690846	45.33	ug/L		94
44) Methyl cyclohexane	10.456	83	1400214	46.67	ug/L		96
45) Dibromomethane	10.902	93	421670	47.87	ug/L		97
46) 1,2-Dichloropropane	10.991	63	723531	51.75	ug/L		93
47) Bromodichloromethane	11.020	83	947995	48.28	ug/L		99
48) Methyl Methacrylate	11.079	69	425675	53.39	ug/L		99
49) 1,4-Dioxane	11.202	88	65855	875.98	ug/L	#	75
50) 2-Chloroethyl vinyl ether	11.490	63	1965765	252.32	ug/L	#	95
51) C-1,3-Dichloropropene	11.613	75	1201231	46.46	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX012.D
Acq On : 29 Mar 2021 1:33 pm
Operator : KKW
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

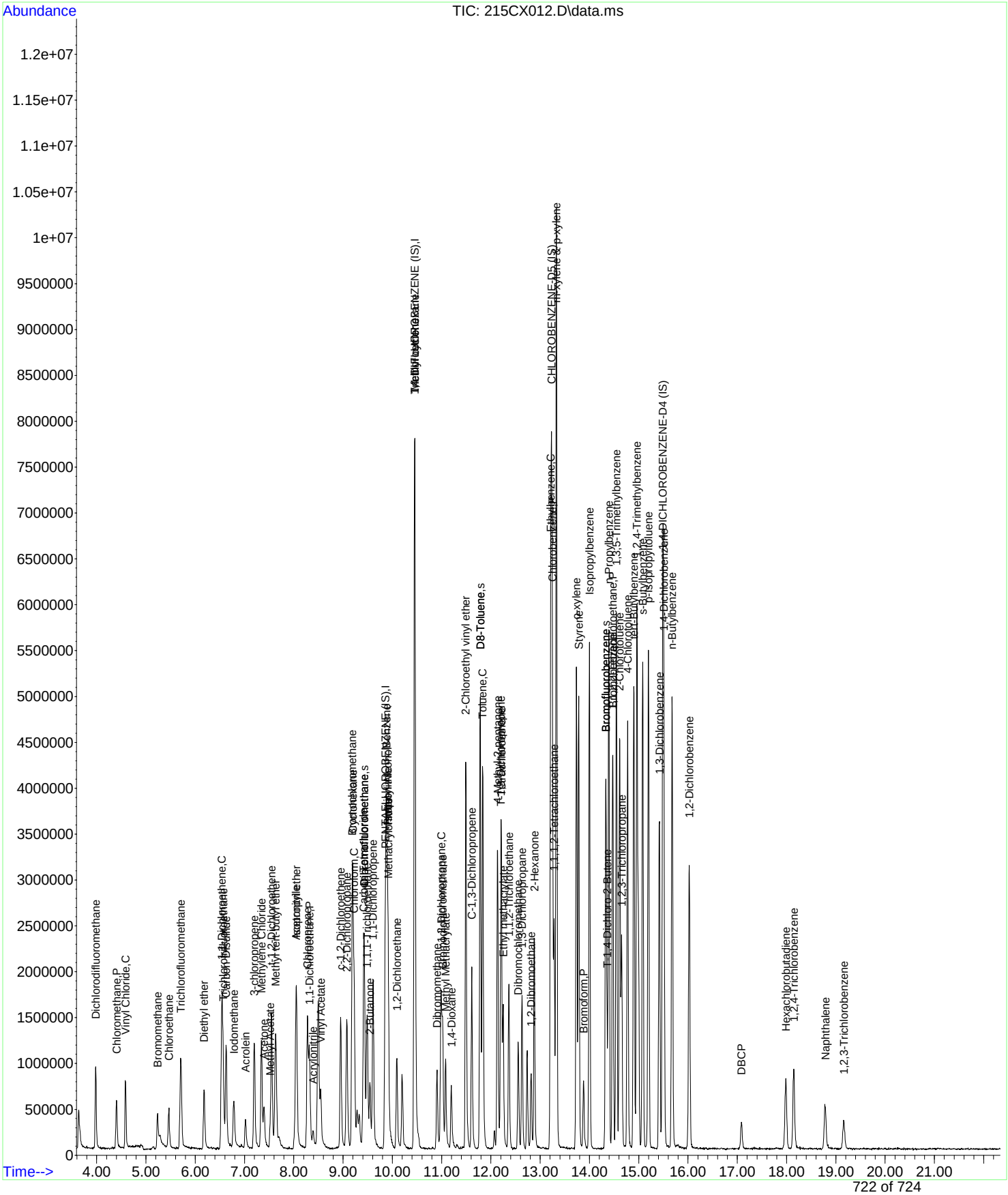
Quant Time: Mar 29 13:57:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3514039	53.83	ug/L		97
54) 4-Methyl-2-pentanone	12.136	100	437825	252.09	ug/L		98
56) Toluene	11.831	92	1949303	48.49	ug/L		96
57) T-1,3-Dichloropropene	12.201	75	1089501	48.95	ug/L		100
58) Tetrachloroethene	12.213	164	505666	44.09	ug/L		98
59) Ethyl methacrylate	12.248	69	805355	49.49	ug/L		98
60) 1,1,2-Trichloroethane	12.365	97	610142	46.55	ug/L		98
61) Dibromochloromethane	12.553	129	643967	45.73	ug/L		94
62) 1,3-Dichloropropane	12.630	76	1057452	45.38	ug/L		95
63) 1,2-Dibromoethane	12.818	107	616288	46.17	ug/L		98
64) 2-Hexanone	12.883	43	1422773	252.82	ug/L		98
65) Ethylbenzene	13.212	106	1178008	47.29	ug/L		97
66) Chlorobenzene	13.247	112	2098849	48.94	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	680601	46.96	ug/L		96
68) m-xylene & p-xylene	13.329	106	2960795	91.67	ug/L		99
69) o-xylene	13.734	106	1509051	49.41	ug/L		100
70) Styrene	13.781	104	2528662	51.20	ug/L		97
71) Bromoform	13.881	173	328437	46.41	ug/L		94
72) Isopropylbenzene	13.999	105	3888412	50.41	ug/L		98
74) Bromofluorobenzene	14.334	95	1669634	52.16	ug/L	#	80
75) n-Propylbenzene	14.393	91	4899910	49.61	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	804594	45.67	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	158354	48.17	ug/L		89
78) T-1,4-Dichloro-2-Butene	14.357	53	272981	45.80	ug/L		99
80) Bromobenzene	14.475	156	794188	47.19	ug/L		91
81) 1,2,4-Trimethylbenzene	14.962	105	3671126	51.61	ug/L		100
82) 2-Chlorotoluene	14.610	91	2949139	52.04	ug/L		99
83) 4-Chlorotoluene	14.774	91	3106696	51.43	ug/L		99
84) tert-Butylbenzene	14.898	119	2917180	51.21	ug/L		97
85) 1,3,5-Trimethylbenzene	14.545	105	3601188	51.32	ug/L		97
86) p-Isopropyltoluene	15.197	119	3728394	49.70	ug/L		99
87) s-Butylbenzene	15.080	105	4339953	49.80	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	1669983	47.29	ug/L		95
89) 1,4-Dichlorobenzene	15.509	146	1714127	48.30	ug/L		98
90) n-Butylbenzene	15.673	91	3421453	51.79	ug/L		100
91) 1,2-Dichlorobenzene	16.026	146	1533682	50.17	ug/L		96
92) DBCP	17.084	157	104509	49.48	ug/L		98
93) Hexachlorobutadiene	17.988	225	173198	50.45	ug/L		94
94) 1,2,4-Trichlorobenzene	18.147	180	367798	49.48	ug/L		96
95) Naphthalene	18.787	128	681916	49.34	ug/L		98
96) 1,2,3-Trichlorobenzene	19.163	180	143624	48.09	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\032921\
Data File : 215CX012.D
Acq On : 29 Mar 2021 1:33 pm
Operator : KKW
Sample : SCV1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Mar 29 13:57:13 2021
Quant Method : C:\msdchem\1\methods\032921W.M
Quant Title : ENCO SOP VGCMS05; Element Cal
QLast Update : Mon Mar 29 13:47:27 2021
Response via : Initial Calibration



TETRA TECH ISG
TtEGS, Information Systems Group

Completion Ticket

On 5/17/2021 at 1:25 PM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AE02766A1.txt, TE015AE02766A3.txt

If you need to identify this session at a later date refer to Ticket Key:

2021517_1118248710_ledd_ENCO

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Print this Page Back To Upload

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: May 20, 2021

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ENCO Laboratories
Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Thursday, July 29, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AE05878

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Thursday, July 22, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Client PM: Chris Hook
Project Number: 112G08982
ENCO Project ID: AE05878
SDG: AE05878-TE015

Overview

All samples submitted were analyzed by Environmental Conservation Laboratories, Inc. in accordance with the methods referenced in the laboratory report. Any particular difficulties encountered during sample handling and processing will be discussed in the Remarks section below.

Remarks

List of instruments used:

Analytical Method / Preparation Method	SOP Reference Instrument
EPA 8260 / EPA_5030B_MS	OVGCMS5 / OVGCMS2

Analysis: 8260D

Manual integrations were performed on samples associated with EPA 8260D. All data & explanations are included in the raw data section of the report

Affected Samples: HMPN-MW0037-010.0-20210720 [AE05878-01],
HMPN-MW0038-020.0-20210720 [AE05878-02], HMPN-MW0046-015.0-20210720 [AE05878-03],
HMPN-MW0039-035.0-20210720 [AE05878-05], HMPN-MW0040-042.5-20210720 [AE05878-06],
HMPN-MW0027-042.5-20210720 [AE05878-07], HMPN-MW0028-047.5-20210720 [AE05878-08],
HMPN-MW0045-030.0-20210721 [AE05878-09], HMPN-MW0036-015.0-20210721 [AE05878-10],
HMPN-MW0041-035.0-20210721 [AE05878-11], HMPN-MW0042-042.5-20210721 [AE05878-12],
HMPN-MW0043-035.0-20210721 [AE05878-13], HMPN-MW0011-025.0-20210721 [AE05878-15],
HMPN-MW0009-010.8-20210721 [AE05878-16], HMPN-MW0034-015.0-20210721 [AE05878-17],
HMPN-MW0035-035.0-20210721 [AE05878-18], AA67497-CCV1
The associated calibration verification standard for 1,2-dibromo-3-chloropropane, bromomethane, chloromethane, and dichlorodifluoromethane exhibited high bias. Analytes not detected in the sample.

Affected Samples: HMPN-MW0047-025.0-20210720 [AE05878-04],
HMPN-MW0039-035.0-20210720 [AE05878-05], HMPN-MW0027-042.5-20210720 [AE05878-07],
HMPN-MW0028-047.5-20210720 [AE05878-08], HMPN-MW0042-042.5-20210721 [AE05878-12],
HMPN-MW0044-042.5-20210721 [AE05878-14], HMPN-MW0044-042.5-20210721 [AE05878-14RE1],
HMPN-MW0016-010.0-20210722 [AE05878-19], HMPN-MW0031-035.0-20210722 [AE05878-22],
HMPN-MW0032-042.5-20210722 [AE05878-23], HMPN-MW0033-047.5-20210722 [AE05878-24],
HMPN-MW0002-035.0-20210722 [AE05878-27], HMPN-MW0002-035.0-20210722 [AE05878-27RE1]
Sample was analyzed at a dilution due to suspected matrix interference.

Affected Samples: HMPN-MW0047-025.0-20210720 [AE05878-04],
HMPN-MW0044-042.5-20210721 [AE05878-14], HMPN-MW0016-010.0-20210722 [AE05878-19],
HMPN-MW0032-042.5-20210722 [AE05878-23], HMPN-MW0002-035.0-20210722 [AE05878-27]
Initial analysis was over diluted. Sample was reanalyzed at a lower dilution.

Affected Samples: HMPN-MW0047-025.0-20210720 [AE05878-04RE1], HMPN-MW0044-042.5-20210721 [AE05878-14RE1], HMPN-MW0016-010.0-20210722 [AE05878-19RE1], HMPN-MW0029-015.0-20210722 [AE05878-20], HMPN-MW0030-025.0-20210722 [AE05878-21], HMPN-MW0031-035.0-20210722 [AE05878-22], HMPN-MW0032-042.5-20210722 [AE05878-23RE1], HMPN-MW0033-047.5-20210722 [AE05878-24], HMPN-MW0008-025.0-20210722 [AE05878-25], HMPN-MW0024-060.0-20210722 [AE05878-26], HMPN-MW0002-035.0-20210722 [AE05878-27RE1], HMPN-MW0004-010.0-20210722 [AE05878-28], AA67520-CCV1, AA67540-CCV1
The associated calibration verification standard for bromomethane and dichlorodifluoromethane exhibited high bias. Analytes not detected in the sample.

Affected Samples: HMPN-MW0042-042.5-20210721 [AE05878-12]
Result for cis-1,2-dichloroethene was above the calibration range of the instrument. Sample was reanalyzed at a dilution.

Affected Samples: 1G27016-MSD1
Precision between the duplicate matrix spikes of the sample was outside acceptance for 1,2,4-Trichlorobenzene.

Affected Batch: 1G28012
Due to autosampler error, the matrix spike duplicate was not analyzed. Batch reported with laboratory control sample and matrix spike.

Affected Samples: AA67497-CCV1, AA67540-CCV1
The continuing calibration verification standard exhibited low bias for chloroethane; the associated sample had ND (non-detect) results, but sensitivity was verified by analyzing a standard with a concentration equivalent to the reporting limit.

Affected Samples: AA67513-CCV1
The associated calibration verification standard for 1,2-dibromo-3-chloropropane, bromomethane, chloroethane, and dichlorodifluoromethane was outside acceptance limits. Reported analytes not affected.

Affected Sequence: AA66932
SCV recovery for dichlorodifluoromethane was outside acceptance limits. Analyte was not detected in the samples.

Affected Sequence: AA67203
SCV recovery for bromomethane was outside acceptance limits. Analyte was not detected in the samples.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy package and in computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures.

Kaitlin Dylnicki
Project Manager

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0037-010.0-20210720 **Lab ID: AE05878-01** **Sampled: 07/20/21 10:15** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 10:58

Client ID: HMPN-MW0038-020.0-20210720 **Lab ID: AE05878-02** **Sampled: 07/20/21 10:50** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 10:30

Client ID: HMPN-MW0046-015.0-20210720 **Lab ID: AE05878-03** **Sampled: 07/20/21 11:20** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 11:26

Client ID: HMPN-MW0047-025.0-20210720 **Lab ID: AE05878-04RE1** **Sampled: 07/20/21 11:50** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/27/21 09:06	07/27/21 10:58

Client ID: HMPN-MW0039-035.0-20210720 **Lab ID: AE05878-05** **Sampled: 07/20/21 12:25** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 12:22

Client ID: HMPN-MW0040-042.5-20210720 **Lab ID: AE05878-06** **Sampled: 07/20/21 12:55** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 12:50

Client ID: HMPN-MW0027-042.5-20210720 **Lab ID: AE05878-07** **Sampled: 07/20/21 14:10** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 13:18

Client ID: HMPN-MW0028-047.5-20210720 **Lab ID: AE05878-08** **Sampled: 07/20/21 14:50** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/03/21	07/26/21 09:21	07/26/21 13:46

Client ID: HMPN-MW0045-030.0-20210721 **Lab ID: AE05878-09** **Sampled: 07/21/21 08:55** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 14:14

Client ID: HMPN-MW0036-015.0-20210721 **Lab ID: AE05878-10** **Sampled: 07/21/21 10:10** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 14:42

Client ID: HMPN-MW0041-035.0-20210721 **Lab ID: AE05878-11** **Sampled: 07/21/21 11:25** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 15:10

Client ID: HMPN-MW0042-042.5-20210721 **Lab ID: AE05878-12** **Sampled: 07/21/21 12:50** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 15:38

Client ID: HMPN-MW0042-042.5-20210721 **Lab ID: AE05878-12RE1** **Sampled: 07/21/21 12:50** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/27/21 08:51	07/27/21 16:18

Client ID: HMPN-MW0043-035.0-20210721 **Lab ID: AE05878-13** **Sampled: 07/21/21 13:25** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 16:07

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SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0044-042.5-20210721 **Lab ID: AE05878-14RE1** **Sampled: 07/21/21 14:15** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/27/21 09:06	07/27/21 11:26

Client ID: HMPN-MW0011-025.0-20210721 **Lab ID: AE05878-15** **Sampled: 07/21/21 14:45** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 17:03

Client ID: HMPN-MW0009-010.8-20210721 **Lab ID: AE05878-16** **Sampled: 07/21/21 15:45** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 17:31

Client ID: HMPN-MW0034-015.0-20210721 **Lab ID: AE05878-17** **Sampled: 07/21/21 16:15** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 17:59

Client ID: HMPN-MW0035-035.0-20210721 **Lab ID: AE05878-18** **Sampled: 07/21/21 16:45** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/04/21	07/26/21 09:21	07/26/21 18:27

Client ID: HMPN-MW0016-010.0-20210722 **Lab ID: AE05878-19RE1** **Sampled: 07/22/21 09:10** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 11:54

Client ID: HMPN-MW0029-015.0-20210722 **Lab ID: AE05878-20** **Sampled: 07/22/21 10:00** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 12:22

Client ID: HMPN-MW0030-025.0-20210722 **Lab ID: AE05878-21** **Sampled: 07/22/21 10:35** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 12:50

Client ID: HMPN-MW0031-035.0-20210722 **Lab ID: AE05878-22** **Sampled: 07/22/21 11:30** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 13:19

Client ID: HMPN-MW0032-042.5-20210722 **Lab ID: AE05878-23** **Sampled: 07/22/21 12:15** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 13:47

Client ID: HMPN-MW0032-042.5-20210722 **Lab ID: AE05878-23RE1** **Sampled: 07/22/21 12:15** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/28/21 08:53	07/28/21 13:33

Client ID: HMPN-MW0033-047.5-20210722 **Lab ID: AE05878-24** **Sampled: 07/22/21 12:40** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 14:15

Client ID: HMPN-MW0008-025.0-20210722 **Lab ID: AE05878-25** **Sampled: 07/22/21 13:15** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 14:43

Client ID: HMPN-MW0024-060.0-20210722 **Lab ID: AE05878-26** **Sampled: 07/22/21 14:05** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 15:11

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-MW0002-035.0-20210722 **Lab ID: AE05878-27RE1** **Sampled: 07/22/21 14:35** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/28/21 08:53	07/28/21 14:01

Client ID: HMPN-MW0004-010.0-20210722 **Lab ID: AE05878-28** **Sampled: 07/22/21 15:00** **Received: 07/22/21 15:15**

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/05/21	07/27/21 09:06	07/27/21 16:07

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0037-010.0-20210720 **Lab ID:** AE05878-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	9.4		0.62	2.5	ug/L	EPA 8260D	
cis-1,2-Dichloroethene	0.84	I	0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	14		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0038-020.0-20210720 **Lab ID:** AE05878-02

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
1,1-Dichloroethane	3.0		0.62	2.5	ug/L	EPA 8260D	
Vinyl chloride	4.0		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0046-015.0-20210720 **Lab ID:** AE05878-03

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	0.60	I	0.53	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0047-025.0-20210720 **Lab ID:** AE05878-04RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	0.76	I	0.53	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0039-035.0-20210720 **Lab ID:** AE05878-05

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	280		2.6	12	ug/L	EPA 8260D	
Trichloroethene	6.0	I	4.4	12	ug/L	EPA 8260D	
Vinyl chloride	150		3.6	12	ug/L	EPA 8260D	

Client ID: HMPN-MW0040-042.5-20210720 **Lab ID:** AE05878-06

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	19		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	2.4	I	0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.7	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0027-042.5-20210720 **Lab ID:** AE05878-07

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	2700		530	2500	ug/L	EPA 8260D	
Freon 113	37000		730	2500	ug/L	EPA 8260D	
Trichloroethene	97000		890	2500	ug/L	EPA 8260D	

Client ID: HMPN-MW0028-047.5-20210720 **Lab ID:** AE05878-08

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	15000		2600	12000	ug/L	EPA 8260D	
Freon 113	120000		3600	12000	ug/L	EPA 8260D	
Trichloroethene	490000		4400	12000	ug/L	EPA 8260D	

Client ID: HMPN-MW0045-030.0-20210721 **Lab ID:** AE05878-09

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	1.8	I	0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.9	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0036-015.0-20210721 **Lab ID:** AE05878-10

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	0.55	I	0.53	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0041-035.0-20210721 **Lab ID:** AE05878-11

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	92		0.53	2.5	ug/L	EPA 8260D	
trans-1,2-Dichloroethene	0.77	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	19		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	28		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0042-042.5-20210721 **Lab ID:** AE05878-12

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	1100		22	62	ug/L	EPA 8260D	
Vinyl chloride	140		18	62	ug/L	EPA 8260D	

Client ID: HMPN-MW0042-042.5-20210721 **Lab ID:** AE05878-12RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	3400		53	250	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0043-035.0-20210721 **Lab ID: AE05878-13**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	15		0.53	2.5	ug/L	EPA 8260D	
Freon 113	0.88	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	2.0	I	0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0044-042.5-20210721 **Lab ID: AE05878-14RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	340	I	110	500	ug/L	EPA 8260D	
Freon 113	17000		150	500	ug/L	EPA 8260D	
Trichloroethene	220	I	180	500	ug/L	EPA 8260D	

Client ID: HMPN-MW0011-025.0-20210721 **Lab ID: AE05878-15**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	5.8		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	8.1		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0009-010.8-20210721 **Lab ID: AE05878-16**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	76		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	7.3		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	11		0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0034-015.0-20210721 **Lab ID: AE05878-17**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	5.7		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	1.1	I	0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0035-035.0-20210721 **Lab ID: AE05878-18**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	7.9		0.53	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0016-010.0-20210722 **Lab ID: AE05878-19RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	6.3		0.53	2.5	ug/L	EPA 8260D	
Vinyl chloride	0.91	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0029-015.0-20210722 **Lab ID: AE05878-20**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	16		0.53	2.5	ug/L	EPA 8260D	
Freon 113	0.96	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	5.6		0.89	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0030-025.0-20210722 **Lab ID: AE05878-21**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	35		0.53	2.5	ug/L	EPA 8260D	
Freon 113	3.4		0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	15		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	2.2	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0031-035.0-20210722 **Lab ID: AE05878-22**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	570		5.3	25	ug/L	EPA 8260D	
Trichloroethene	310		8.9	25	ug/L	EPA 8260D	
Vinyl chloride	22	I	7.1	25	ug/L	EPA 8260D	

Client ID: HMPN-MW0032-042.5-20210722 **Lab ID: AE05878-23**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	4900		53	250	ug/L	EPA 8260D	

Client ID: HMPN-MW0032-042.5-20210722 **Lab ID: AE05878-23RE1**

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Trichloroethene	3600		44	120	ug/L	EPA 8260D	
Vinyl chloride	260		36	120	ug/L	EPA 8260D	

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SAMPLE DETECTION SUMMARY

Client ID: HMPN-MW0033-047.5-20210722 **Lab ID:** AE05878-24

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	15000		110	500	ug/L	EPA 8260D	
Trichloroethene	11000		180	500	ug/L	EPA 8260D	
Vinyl chloride	890		140	500	ug/L	EPA 8260D	

Client ID: HMPN-MW0008-025.0-20210722 **Lab ID:** AE05878-25

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	18		0.53	2.5	ug/L	EPA 8260D	
Freon 113	1.6	I	0.73	2.5	ug/L	EPA 8260D	
Trichloroethene	3.6		0.89	2.5	ug/L	EPA 8260D	
Vinyl chloride	1.2	I	0.71	2.5	ug/L	EPA 8260D	

Client ID: HMPN-MW0002-035.0-20210722 **Lab ID:** AE05878-27RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	51		2.6	12	ug/L	EPA 8260D	
Freon 113	470		3.6	12	ug/L	EPA 8260D	
Trichloroethene	120		4.4	12	ug/L	EPA 8260D	

Client ID: HMPN-MW0004-010.0-20210722 **Lab ID:** AE05878-28

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	3.6		0.53	2.5	ug/L	EPA 8260D	
Trichloroethene	12		0.89	2.5	ug/L	EPA 8260D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0037-010.0-20210720 **Lab Sample ID:** AE05878-01 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 10:15 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,1-Dichloroethane [75-34-3]^	**9.4**		ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**0.84**	I	ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	
Vinyl chloride [75-01-4]^	**14**		ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 10:58	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 10:58*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 10:58*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 10:58*	*kkw*	

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ANALYTICAL RESULTS

Description: HMPN-MW0038-020.0-20210720 **Lab Sample ID:** AE05878-02 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 10:50 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,1-Dichloroethane [75-34-3]^	**3.0**		ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	
Vinyl chloride [75-01-4]^	**4.0**		ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 10:30	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 10:30*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 10:30*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 10:30*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0046-015.0-20210720 **Lab Sample ID:** AE05878-03 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 11:20 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**0.60**	I	ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 11:26	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 11:26*	*kkw*	
Dibromofluoromethane	*53*	*1*	*50.0*	*106 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 11:26*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 11:26*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0047-025.0-20210720 **Lab Sample ID:** AE05878-04 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 11:50 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**0.76**	I	ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 10:58	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 10:58*	*kkw*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 10:58*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 10:58*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0039-035.0-20210720 **Lab Sample ID:** AE05878-05 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 12:25 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,1-Dichloroethane [75-34-3]^	3.1	U	ug/L	5	3.1	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**280**		ug/L	5	2.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Dibromochloromethane [124-48-1]^	2.5	U	ug/L	5	2.5	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	QV-01
Freon 113 [76-13-1]^	3.6	U	ug/L	5	3.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
trans-1,2-Dichloroethene [156-60-5]^	3.6	U	ug/L	5	3.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Trichloroethene [79-01-6]^	**6.0**	I	ug/L	5	4.4	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	
Vinyl chloride [75-01-4]^	**150**		ug/L	5	3.6	12	1G26016	EPA 8260D	07/26/21 12:22	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 12:22*	*kkw*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 12:22*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 12:22*	*kkw*	

ANALYTICAL RESULTS

Description: HMPN-MW0040-042.5-20210720 **Lab Sample ID:** AE05878-06 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 12:55 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**19**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Trichloroethene [79-01-6]^	**2.4**	I	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	
Vinyl chloride [75-01-4]^	**1.7**	I	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 12:50	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 12:50*	*kkw*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 12:50*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 12:50*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0027-042.5-20210720 **Lab Sample ID:** AE05878-07 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 14:10 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	800	U	ug/L	1000	800	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	540	U	ug/L	1000	540	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,1,2-Trichloroethane [79-00-5]^	760	U	ug/L	1000	760	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,1-Dichloroethane [75-34-3]^	620	U	ug/L	1000	620	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,1-Dichloroethene [75-35-4]^	940	U	ug/L	1000	940	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	700	U	ug/L	1000	700	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	960	U	ug/L	1000	960	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	780	U	ug/L	1000	780	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,2-Dichlorobenzene [95-50-1]^	730	U	ug/L	1000	730	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,2-Dichloroethane [107-06-2]^	630	U	ug/L	1000	630	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,2-Dichloropropane [78-87-5]^	800	U	ug/L	1000	800	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,3-Dichlorobenzene [541-73-1]^	770	U	ug/L	1000	770	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
1,4-Dichlorobenzene [106-46-7]^	760	U	ug/L	1000	760	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Bromodichloromethane [75-27-4]^	520	U	ug/L	1000	520	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Bromoform [75-25-2]^	750	U	ug/L	1000	750	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Bromomethane [74-83-9]^	950	U	ug/L	1000	950	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	940	U	ug/L	1000	940	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Chlorobenzene [108-90-7]^	720	U	ug/L	1000	720	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Chloroethane [75-00-3]^	980	U	ug/L	1000	980	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Chloroform [67-66-3]^	800	U	ug/L	1000	800	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Chloromethane [74-87-3]^	820	U	ug/L	1000	820	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**2700**		ug/L	1000	530	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	590	U	ug/L	1000	590	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Dibromochloromethane [124-48-1]^	500	U	ug/L	1000	500	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Dichlorodifluoromethane [75-71-8]^	740	U	ug/L	1000	740	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	QV-01
Freon 113 [76-13-1]^	**37000**		ug/L	1000	730	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Tetrachloroethene [127-18-4]^	760	U	ug/L	1000	760	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
trans-1,2-Dichloroethene [156-60-5]^	730	U	ug/L	1000	730	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	730	U	ug/L	1000	730	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Trichloroethene [79-01-6]^	**97000**		ug/L	1000	890	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Trichlorofluoromethane [75-69-4]^	940	U	ug/L	1000	940	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	
Vinyl chloride [75-01-4]^	710	U	ug/L	1000	710	2500	1G26016	EPA 8260D	07/26/21 13:18	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 13:18*	*kkw*	
Dibromofluoromethane	*56*	*1*	*50.0*	*112 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 13:18*	*kkw*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 13:18*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0028-047.5-20210720 **Lab Sample ID:** AE05878-08 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/20/21 14:50 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4000	U	ug/L	5000	4000	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	2700	U	ug/L	5000	2700	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,1,2-Trichloroethane [79-00-5]^	3800	U	ug/L	5000	3800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,1-Dichloroethane [75-34-3]^	3100	U	ug/L	5000	3100	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,1-Dichloroethene [75-35-4]^	4700	U	ug/L	5000	4700	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	3500	U	ug/L	5000	3500	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	4800	U	ug/L	5000	4800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	3900	U	ug/L	5000	3900	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,2-Dichlorobenzene [95-50-1]^	3600	U	ug/L	5000	3600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,2-Dichloroethane [107-06-2]^	3200	U	ug/L	5000	3200	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,2-Dichloropropane [78-87-5]^	4000	U	ug/L	5000	4000	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,3-Dichlorobenzene [541-73-1]^	3800	U	ug/L	5000	3800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
1,4-Dichlorobenzene [106-46-7]^	3800	U	ug/L	5000	3800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Bromodichloromethane [75-27-4]^	2600	U	ug/L	5000	2600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Bromoform [75-25-2]^	3800	U	ug/L	5000	3800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Bromomethane [74-83-9]^	4800	U	ug/L	5000	4800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	4700	U	ug/L	5000	4700	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Chlorobenzene [108-90-7]^	3600	U	ug/L	5000	3600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Chloroethane [75-00-3]^	4900	U	ug/L	5000	4900	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Chloroform [67-66-3]^	4000	U	ug/L	5000	4000	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Chloromethane [74-87-3]^	4100	U	ug/L	5000	4100	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**15000**		ug/L	5000	2600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	3000	U	ug/L	5000	3000	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Dibromochloromethane [124-48-1]^	2500	U	ug/L	5000	2500	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Dichlorodifluoromethane [75-71-8]^	3700	U	ug/L	5000	3700	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	QV-01
Freon 113 [76-13-1]^	**120000**		ug/L	5000	3600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Tetrachloroethene [127-18-4]^	3800	U	ug/L	5000	3800	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
trans-1,2-Dichloroethene [156-60-5]^	3600	U	ug/L	5000	3600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	3600	U	ug/L	5000	3600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Trichloroethene [79-01-6]^	**490000**		ug/L	5000	4400	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Trichlorofluoromethane [75-69-4]^	4700	U	ug/L	5000	4700	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	
Vinyl chloride [75-01-4]^	3600	U	ug/L	5000	3600	12000	1G26016	EPA 8260D	07/26/21 13:46	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 13:46*	*kkw*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 13:46*	*kkw*	
Toluene-d8	*53*	*1*	*50.0*	*107 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 13:46*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0045-030.0-20210721 **Lab Sample ID:** AE05878-09 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 08:55 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**1.8**	I	ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	
Vinyl chloride [75-01-4]^	**1.9**	I	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 14:14	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 14:14*	*kkw*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 14:14*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 14:14*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0036-015.0-20210721 **Lab Sample ID:** AE05878-10 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 10:10 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**0.55**	I	ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 14:42	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*99 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 14:42*	*kkw*	
Dibromofluoromethane	*55*	*1*	*50.0*	*109 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 14:42*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 14:42*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0041-035.0-20210721 **Lab Sample ID:** AE05878-11 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 11:25 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**92**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
trans-1,2-Dichloroethene [156-60-5]^	**0.77**	I	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Trichloroethene [79-01-6]^	**19**		ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	
Vinyl chloride [75-01-4]^	**28**		ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 15:10	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 15:10*	*kkw*	
Dibromofluoromethane	*56*	*1*	*50.0*	*112 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 15:10*	*kkw*	
Toluene-d8	*53*	*1*	*50.0*	*106 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 15:10*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0042-042.5-20210721 **Lab Sample ID:** AE05878-12 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 12:50 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	20	U	ug/L	25	20	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	14	U	ug/L	25	14	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,1,2-Trichloroethane [79-00-5]^	19	U	ug/L	25	19	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,1-Dichloroethane [75-34-3]^	16	U	ug/L	25	16	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,1-Dichloroethene [75-35-4]^	24	U	ug/L	25	24	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	24	U	ug/L	25	24	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	20	U	ug/L	25	20	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,2-Dichlorobenzene [95-50-1]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,2-Dichloroethane [107-06-2]^	16	U	ug/L	25	16	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,2-Dichloropropane [78-87-5]^	20	U	ug/L	25	20	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,3-Dichlorobenzene [541-73-1]^	19	U	ug/L	25	19	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
1,4-Dichlorobenzene [106-46-7]^	19	U	ug/L	25	19	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Bromodichloromethane [75-27-4]^	13	U	ug/L	25	13	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Bromoform [75-25-2]^	19	U	ug/L	25	19	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Bromomethane [74-83-9]^	24	U	ug/L	25	24	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	24	U	ug/L	25	24	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Chlorobenzene [108-90-7]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Chloroethane [75-00-3]^	24	U	ug/L	25	24	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Chloroform [67-66-3]^	20	U	ug/L	25	20	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Chloromethane [74-87-3]^	20	U	ug/L	25	20	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**3400**		ug/L	100	53	250	1G27015	EPA 8260D	07/27/21 16:18	nmc	
cis-1,3-Dichloropropene [10061-01-5]^	15	U	ug/L	25	15	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Dibromochloromethane [124-48-1]^	12	U	ug/L	25	12	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Dichlorodifluoromethane [75-71-8]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	QV-01
Freon 113 [76-13-1]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Tetrachloroethene [127-18-4]^	19	U	ug/L	25	19	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
trans-1,2-Dichloroethene [156-60-5]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	18	U	ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Trichloroethene [79-01-6]^	**1100**		ug/L	25	22	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Trichlorofluoromethane [75-69-4]^	24	U	ug/L	25	24	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	
Vinyl chloride [75-01-4]^	**140**		ug/L	25	18	62	1G26016	EPA 8260D	07/26/21 15:38	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 15:38*	*kkw*	
4-Bromofluorobenzene	*48*	*1*	*50.0*	*96 %*	*41-142*	*1G27015*	*EPA 8260D*	*07/27/21 16:18*	*nmc*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 15:38*	*kkw*	
Dibromofluoromethane	*57*	*1*	*50.0*	*113 %*	*53-146*	*1G27015*	*EPA 8260D*	*07/27/21 16:18*	*nmc*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 15:38*	*kkw*	
Toluene-d8	*49*	*1*	*50.0*	*98 %*	*41-146*	*1G27015*	*EPA 8260D*	*07/27/21 16:18*	*nmc*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0043-035.0-20210721 **Lab Sample ID:** AE05878-13 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 13:25 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**15**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	QV-01
Freon 113 [76-13-1]^	**0.88**	I	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Trichloroethene [79-01-6]^	**2.0**	I	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 16:07	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 16:07*	*kkw*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 16:07*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 16:07*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0044-042.5-20210721 **Lab Sample ID:** AE05878-14 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 14:15 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Bromoform [75-25-2]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Chloroform [67-66-3]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**340**	I	ug/L	200	110	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Dibromochloromethane [124-48-1]^	100	U	ug/L	200	100	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	QV-01
Freon 113 [76-13-1]^	**17000**		ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Trichloroethene [79-01-6]^	**220**	I	ug/L	200	180	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	
Vinyl chloride [75-01-4]^	140	U	ug/L	200	140	500	1G27016	EPA 8260D	07/27/21 11:26	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 11:26*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 11:26*	*kkw*	
Toluene-d8	*50*	*1*	*50.0*	*100 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 11:26*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0011-025.0-20210721 **Lab Sample ID:** AE05878-15 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 14:45 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**5.8**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	
Vinyl chloride [75-01-4]^	**8.1**		ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 17:03	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 17:03*	*kkw*	
Dibromofluoromethane	*54*	*1*	*50.0*	*107 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 17:03*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 17:03*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0009-010.8-20210721 **Lab Sample ID:** AE05878-16 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 15:45 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**76**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Trichloroethene [79-01-6]^	**7.3**		ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	
Vinyl chloride [75-01-4]^	**11**		ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 17:31	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 17:31*	*kkw*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 17:31*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 17:31*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0034-015.0-20210721 **Lab Sample ID:** AE05878-17 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 16:15 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**5.7**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Trichloroethene [79-01-6]^	**1.1**	I	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 17:59	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 17:59*	*kkw*	
Dibromofluoromethane	*54*	*1*	*50.0*	*109 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 17:59*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 17:59*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0035-035.0-20210721 **Lab Sample ID:** AE05878-18 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/21/21 16:45 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	QV-01
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	QV-01
cis-1,2-Dichloroethene [156-59-2]^	**7.9**		ug/L	1	0.53	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G26016	EPA 8260D	07/26/21 18:27	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*1G26016*	*EPA 8260D*	*07/26/21 18:27*	*kkw*	
Dibromofluoromethane	*53*	*1*	*50.0*	*107 %*	*53-146*	*1G26016*	*EPA 8260D*	*07/26/21 18:27*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*1G26016*	*EPA 8260D*	*07/26/21 18:27*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0016-010.0-20210722 **Lab Sample ID:** AE05878-19 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 09:10 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**6.3**		ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	
Vinyl chloride [75-01-4]^	**0.91**	I	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 11:54	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*102 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 11:54*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*104 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 11:54*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*101 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 11:54*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0029-015.0-20210722 **Lab Sample ID:** AE05878-20 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 10:00 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**16**		ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	QV-01
Freon 113 [76-13-1]^	**0.96**	I	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Trichloroethene [79-01-6]^	**5.6**		ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 12:22	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*99 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 12:22*	*kkw*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 12:22*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 12:22*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0030-025.0-20210722 **Lab Sample ID:** AE05878-21 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 10:35 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**35**		ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	QV-01
Freon 113 [76-13-1]^	**3.4**		ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Trichloroethene [79-01-6]^	**15**		ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	
Vinyl chloride [75-01-4]^	**2.2**	I	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 12:50	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*99 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 12:50*	*kkw*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 12:50*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 12:50*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0031-035.0-20210722 **Lab Sample ID:** AE05878-22 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 11:30 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**570**		ug/L	10	5.3	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	QV-01
Freon 113 [76-13-1]^	7.3	U	ug/L	10	7.3	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Trichloroethene [79-01-6]^	**310**		ug/L	10	8.9	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	
Vinyl chloride [75-01-4]^	**22**	I	ug/L	10	7.1	25	1G27016	EPA 8260D	07/27/21 13:19	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*100 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 13:19*	*kkw*	
Dibromofluoromethane	*54*	*1*	*50.0*	*108 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 13:19*	*kkw*	
Toluene-d8	*53*	*1*	*50.0*	*107 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 13:19*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0032-042.5-20210722 **Lab Sample ID:** AE05878-23 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 12:15 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	40	U	ug/L	50	40	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	27	U	ug/L	50	27	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,1,2-Trichloroethane [79-00-5]^	38	U	ug/L	50	38	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,1-Dichloroethane [75-34-3]^	31	U	ug/L	50	31	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,1-Dichloroethene [75-35-4]^	47	U	ug/L	50	47	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	35	U	ug/L	50	35	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	48	U	ug/L	50	48	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,2-Dibromoethane [106-93-4]^	39	U	ug/L	50	39	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,2-Dichlorobenzene [95-50-1]^	36	U	ug/L	50	36	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,2-Dichloroethane [107-06-2]^	32	U	ug/L	50	32	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,2-Dichloropropane [78-87-5]^	40	U	ug/L	50	40	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,3-Dichlorobenzene [541-73-1]^	38	U	ug/L	50	38	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
1,4-Dichlorobenzene [106-46-7]^	38	U	ug/L	50	38	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Bromodichloromethane [75-27-4]^	26	U	ug/L	50	26	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Bromoform [75-25-2]^	38	U	ug/L	50	38	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Bromomethane [74-83-9]^	48	U	ug/L	50	48	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	47	U	ug/L	50	47	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Chlorobenzene [108-90-7]^	36	U	ug/L	50	36	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Chloroethane [75-00-3]^	49	U	ug/L	50	49	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Chloroform [67-66-3]^	40	U	ug/L	50	40	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Chloromethane [74-87-3]^	41	U	ug/L	50	41	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**4900**		ug/L	100	53	250	1G27016	EPA 8260D	07/27/21 13:47	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	30	U	ug/L	50	30	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Dibromochloromethane [124-48-1]^	25	U	ug/L	50	25	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Dichlorodifluoromethane [75-71-8]^	37	U	ug/L	50	37	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	QV-01
Freon 113 [76-13-1]^	36	U	ug/L	50	36	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Tetrachloroethene [127-18-4]^	38	U	ug/L	50	38	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
trans-1,2-Dichloroethene [156-60-5]^	36	U	ug/L	50	36	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	36	U	ug/L	50	36	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Trichloroethene [79-01-6]^	**3600**		ug/L	50	44	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Trichlorofluoromethane [75-69-4]^	47	U	ug/L	50	47	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	
Vinyl chloride [75-01-4]^	**260**		ug/L	50	36	120	1G28012	EPA 8260D	07/28/21 13:33	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*99 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 13:47*	*kkw*	
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G28012*	*EPA 8260D*	*07/28/21 13:33*	*kkw*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 13:47*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*105 %*	*53-146*	*1G28012*	*EPA 8260D*	*07/28/21 13:33*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 13:47*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*105 %*	*41-146*	*1G28012*	*EPA 8260D*	*07/28/21 13:33*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0033-047.5-20210722 **Lab Sample ID:** AE05878-24 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 12:40 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	110	U	ug/L	200	110	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,1,2-Trichloroethane [79-00-5]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,1-Dichloroethane [75-34-3]^	120	U	ug/L	200	120	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,1-Dichloroethene [75-35-4]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	140	U	ug/L	200	140	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,2-Dibromoethane [106-93-4]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,2-Dichlorobenzene [95-50-1]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,2-Dichloroethane [107-06-2]^	130	U	ug/L	200	130	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,2-Dichloropropane [78-87-5]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,3-Dichlorobenzene [541-73-1]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
1,4-Dichlorobenzene [106-46-7]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Bromodichloromethane [75-27-4]^	100	U	ug/L	200	100	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Bromoform [75-25-2]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Bromomethane [74-83-9]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Chlorobenzene [108-90-7]^	140	U	ug/L	200	140	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Chloroethane [75-00-3]^	200	U	ug/L	200	200	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Chloroform [67-66-3]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Chloromethane [74-87-3]^	160	U	ug/L	200	160	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**15000**		ug/L	200	110	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	120	U	ug/L	200	120	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Dibromochloromethane [124-48-1]^	100	U	ug/L	200	100	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Dichlorodifluoromethane [75-71-8]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	QV-01
Freon 113 [76-13-1]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Tetrachloroethene [127-18-4]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
trans-1,2-Dichloroethene [156-60-5]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	150	U	ug/L	200	150	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Trichloroethene [79-01-6]^	**11000**		ug/L	200	180	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Trichlorofluoromethane [75-69-4]^	190	U	ug/L	200	190	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	
Vinyl chloride [75-01-4]^	**890**		ug/L	200	140	500	1G27016	EPA 8260D	07/27/21 14:15	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*51*	*1*	*50.0*	*101 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 14:15*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 14:15*	*kkw*	
Toluene-d8	*53*	*1*	*50.0*	*107 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 14:15*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0008-025.0-20210722 **Lab Sample ID:** AE05878-25 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 13:15 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**18**		ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	QV-01
Freon 113 [76-13-1]^	**1.6**	I	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Trichloroethene [79-01-6]^	**3.6**		ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	
Vinyl chloride [75-01-4]^	**1.2**	I	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 14:43	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 14:43*	*kkw*	
Dibromofluoromethane	*52*	*1*	*50.0*	*103 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 14:43*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*103 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 14:43*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0024-060.0-20210722 **Lab Sample ID:** AE05878-26 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 14:05 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
cis-1,2-Dichloroethene [156-59-2]^	0.53	U	ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Trichloroethene [79-01-6]^	0.89	U	ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 15:11	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*49*	*1*	*50.0*	*98 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 15:11*	*kkw*	
Dibromofluoromethane	*51*	*1*	*50.0*	*103 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 15:11*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*103 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 15:11*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0002-035.0-20210722 **Lab Sample ID:** AE05878-27 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 14:35 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	4.0	U	ug/L	5	4.0	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	2.7	U	ug/L	5	2.7	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,1,2-Trichloroethane [79-00-5]^	3.8	U	ug/L	5	3.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,1-Dichloroethane [75-34-3]^	3.1	U	ug/L	5	3.1	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,1-Dichloroethene [75-35-4]^	4.7	U	ug/L	5	4.7	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	3.5	U	ug/L	5	3.5	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	4.8	U	ug/L	5	4.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,2-Dibromoethane [106-93-4]^	3.9	U	ug/L	5	3.9	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,2-Dichlorobenzene [95-50-1]^	3.6	U	ug/L	5	3.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,2-Dichloroethane [107-06-2]^	3.2	U	ug/L	5	3.2	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,2-Dichloropropane [78-87-5]^	4.0	U	ug/L	5	4.0	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,3-Dichlorobenzene [541-73-1]^	3.8	U	ug/L	5	3.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
1,4-Dichlorobenzene [106-46-7]^	3.8	U	ug/L	5	3.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Bromodichloromethane [75-27-4]^	2.6	U	ug/L	5	2.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Bromoform [75-25-2]^	3.8	U	ug/L	5	3.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Bromomethane [74-83-9]^	4.8	U	ug/L	5	4.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	4.7	U	ug/L	5	4.7	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Chlorobenzene [108-90-7]^	3.6	U	ug/L	5	3.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Chloroethane [75-00-3]^	4.9	U	ug/L	5	4.9	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Chloroform [67-66-3]^	4.0	U	ug/L	5	4.0	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Chloromethane [74-87-3]^	4.1	U	ug/L	5	4.1	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**51**		ug/L	5	2.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	3.0	U	ug/L	5	3.0	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Dibromochloromethane [124-48-1]^	2.5	U	ug/L	5	2.5	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Dichlorodifluoromethane [75-71-8]^	3.7	U	ug/L	5	3.7	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	QV-01
Freon 113 [76-13-1]^	**470**		ug/L	5	3.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Tetrachloroethene [127-18-4]^	3.8	U	ug/L	5	3.8	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
trans-1,2-Dichloroethene [156-60-5]^	3.6	U	ug/L	5	3.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	3.6	U	ug/L	5	3.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Trichloroethene [79-01-6]^	**120**		ug/L	5	4.4	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Trichlorofluoromethane [75-69-4]^	4.7	U	ug/L	5	4.7	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	
Vinyl chloride [75-01-4]^	3.6	U	ug/L	5	3.6	12	1G28012	EPA 8260D	07/28/21 14:01	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G28012*	*EPA 8260D*	*07/28/21 14:01*	*kkw*	
Dibromofluoromethane	*51*	*1*	*50.0*	*102 %*	*53-146*	*1G28012*	*EPA 8260D*	*07/28/21 14:01*	*kkw*	
Toluene-d8	*51*	*1*	*50.0*	*102 %*	*41-146*	*1G28012*	*EPA 8260D*	*07/28/21 14:01*	*kkw*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-MW0004-010.0-20210722 **Lab Sample ID:** AE05878-28 **Received:** 07/22/21 15:15

Matrix: Ground Water **Sampled:** 07/22/21 15:00 **Work Order:** AE05878

Project: NASA KSC HMFN **Sampled By:** Chuck Sorden

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,1,2,2-Tetrachloroethane [79-34-5]^	0.54	U	ug/L	1	0.54	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,1,2-Trichloroethane [79-00-5]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,1-Dichloroethane [75-34-3]^	0.62	U	ug/L	1	0.62	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,1-Dichloroethene [75-35-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,2,4-Trichlorobenzene [120-82-1]^	0.70	U	ug/L	1	0.70	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,2-Dibromo-3-chloropropane [96-12-8]^	0.96	U	ug/L	1	0.96	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,2-Dibromoethane [106-93-4]^	0.78	U	ug/L	1	0.78	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,2-Dichlorobenzene [95-50-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,2-Dichloroethane [107-06-2]^	0.63	U	ug/L	1	0.63	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,2-Dichloropropane [78-87-5]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,3-Dichlorobenzene [541-73-1]^	0.77	U	ug/L	1	0.77	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
1,4-Dichlorobenzene [106-46-7]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Bromodichloromethane [75-27-4]^	0.52	U	ug/L	1	0.52	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Bromoform [75-25-2]^	0.75	U	ug/L	1	0.75	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Bromomethane [74-83-9]^	0.95	U	ug/L	1	0.95	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	QV-01
Carbon Tetrachloride [56-23-5]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Chlorobenzene [108-90-7]^	0.72	U	ug/L	1	0.72	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Chloroethane [75-00-3]^	0.98	U	ug/L	1	0.98	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Chloroform [67-66-3]^	0.80	U	ug/L	1	0.80	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Chloromethane [74-87-3]^	0.82	U	ug/L	1	0.82	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
cis-1,2-Dichloroethene [156-59-2]^	**3.6**		ug/L	1	0.53	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
cis-1,3-Dichloropropene [10061-01-5]^	0.59	U	ug/L	1	0.59	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Dibromochloromethane [124-48-1]^	0.50	U	ug/L	1	0.50	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Dichlorodifluoromethane [75-71-8]^	0.74	U	ug/L	1	0.74	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	QV-01
Freon 113 [76-13-1]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Tetrachloroethene [127-18-4]^	0.76	U	ug/L	1	0.76	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
trans-1,2-Dichloroethene [156-60-5]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
trans-1,3-Dichloropropene [10061-02-6]^	0.73	U	ug/L	1	0.73	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Trichloroethene [79-01-6]^	**12**		ug/L	1	0.89	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Trichlorofluoromethane [75-69-4]^	0.94	U	ug/L	1	0.94	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	
Vinyl chloride [75-01-4]^	0.71	U	ug/L	1	0.71	2.5	1G27016	EPA 8260D	07/27/21 16:07	kkw	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*50*	*1*	*50.0*	*101 %*	*41-142*	*1G27016*	*EPA 8260D*	*07/27/21 16:07*	*kkw*	
Dibromofluoromethane	*53*	*1*	*50.0*	*105 %*	*53-146*	*1G27016*	*EPA 8260D*	*07/27/21 16:07*	*kkw*	
Toluene-d8	*52*	*1*	*50.0*	*104 %*	*41-146*	*1G27016*	*EPA 8260D*	*07/27/21 16:07*	*kkw*	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G26016 - EPA 5030B_MS

Blank (1G26016-BLK1) Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 10:02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*99*	*41-142*			
Dibromofluoromethane	*51*			*ug/L*	*50.0*		*102*	*53-146*			
Toluene-d8	*50*			*ug/L*	*50.0*		*101*	*41-146*			

LCS (1G26016-BS1) Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 09:06

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0		109	57-148			
1,1,2,2-Tetrachloroethane	22		2.5	ug/L	20.0		108	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0		104	57-141			
1,1-Dichloroethane	22		2.5	ug/L	20.0		108	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		107	47-139			
1,2,4-Trichlorobenzene	28		2.5	ug/L	20.0		139	52-159			
1,2-Dibromo-3-chloropropane	27		2.5	ug/L	20.0		134	48-150			
1,2-Dibromoethane	21		2.5	ug/L	20.0		103	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0		102	63-131			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G26016 - EPA 5030B_MS - Continued

LCS (1G26016-BS1) Continued Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 09:06

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	19		2.5	ug/L	20.0		97	50-156			
1,2-Dichloropropane	21		2.5	ug/L	20.0		105	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0		110	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		106	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0		106	58-135			
Bromoform	20		2.5	ug/L	20.0		100	46-148			
Bromomethane	8.0		2.5	ug/L	20.0		40	10-173			
Carbon Tetrachloride	20		2.5	ug/L	20.0		102	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		107	51-139			
Chloroethane	16		2.5	ug/L	20.0		78	27-180			
Chloroform	21		2.5	ug/L	20.0		103	58-139			
Chloromethane	9.5		2.5	ug/L	20.0		48	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0		108	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		101	64-128			
Dibromochloromethane	20		2.5	ug/L	20.0		98	50-140			
Dichlorodifluoromethane	3.3		2.5	ug/L	20.0		17	10-180			
Freon 113	20		2.5	ug/L	20.0		100	47-173			
Tetrachloroethene	22		2.5	ug/L	20.0		108	60-147			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0		108	54-134			
trans-1,3-Dichloropropene	23		2.5	ug/L	20.0		117	65-149			
Trichloroethene	21		2.5	ug/L	20.0		104	62-135			
Trichlorofluoromethane	18		2.5	ug/L	20.0		88	56-155			
Vinyl chloride	13		2.5	ug/L	20.0		63	20-167			
4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*101*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*103*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*41-146*			

Matrix Spike (1G26016-MS1) Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 19:23

Source: AE05878-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	25		2.5	ug/L	20.0	0.80 U	123	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	105	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	106	57-141			
1,1-Dichloroethane	27		2.5	ug/L	20.0	3.0	119	57-142			
1,1-Dichloroethene	22		2.5	ug/L	20.0	0.94 U	112	47-139			
1,2,4-Trichlorobenzene	24		2.5	ug/L	20.0	0.70 U	121	52-159			
1,2-Dibromo-3-chloropropane	23		2.5	ug/L	20.0	0.96 U	115	48-150			
1,2-Dibromoethane	20		2.5	ug/L	20.0	0.78 U	100	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	106	63-131			
1,2-Dichloroethane	21		2.5	ug/L	20.0	0.63 U	104	50-156			
1,2-Dichloropropane	21		2.5	ug/L	20.0	0.80 U	104	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	111	66-129			
1,4-Dichlorobenzene	22		2.5	ug/L	20.0	0.76 U	110	65-133			
Bromodichloromethane	22		2.5	ug/L	20.0	0.52 U	110	58-135			
Bromoform	18		2.5	ug/L	20.0	0.75 U	90	46-148			
Bromomethane	15		2.5	ug/L	20.0	0.95 U	73	10-173			
Carbon Tetrachloride	21		2.5	ug/L	20.0	0.94 U	106	54-156			
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	110	51-139			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G26016 - EPA 5030B_MS - Continued

Matrix Spike (1G26016-MS1) Continued Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 19:23

Source: AE05878-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	18		2.5	ug/L	20.0	0.98 U	92	27-180			
Chloroform	22		2.5	ug/L	20.0	0.80 U	112	58-139			
Chloromethane	10		2.5	ug/L	20.0	0.82 U	52	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.53 U	111	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0	0.59 U	98	64-128			
Dibromochloromethane	19		2.5	ug/L	20.0	0.50 U	93	50-140			
Dichlorodifluoromethane	3.4		2.5	ug/L	20.0	0.74 U	17	10-180			
Freon 113	22		2.5	ug/L	20.0	0.73 U	110	47-173			
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	107	60-147			
trans-1,2-Dichloroethene	23		2.5	ug/L	20.0	0.73 U	116	54-134			
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0	0.73 U	109	65-149			
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	112	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0	0.94 U	98	56-155			
Vinyl chloride	17		2.5	ug/L	20.0	4.0	66	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*101*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*108*	*53-146*			
Toluene-d8	*54*			*ug/L*	*50.0*		*108*	*41-146*			

Matrix Spike Dup (1G26016-MSD1) Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 19:51

Source: AE05878-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0	0.80 U	116	57-148	6	25	
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	103	60-139	2	17	
1,1,2-Trichloroethane	20		2.5	ug/L	20.0	0.76 U	102	57-141	4	16	
1,1-Dichloroethane	25		2.5	ug/L	20.0	3.0	112	57-142	5	24	
1,1-Dichloroethene	22		2.5	ug/L	20.0	0.94 U	111	47-139	1	16	
1,2,4-Trichlorobenzene	24		2.5	ug/L	20.0	0.70 U	121	52-159	0.2	24	
1,2-Dibromo-3-chloropropane	23		2.5	ug/L	20.0	0.96 U	117	48-150	1	21	QV-01
1,2-Dibromoethane	21		2.5	ug/L	20.0	0.78 U	104	57-140	3	16	
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	105	63-131	0.7	25	
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	97	50-156	7	18	
1,2-Dichloropropane	21		2.5	ug/L	20.0	0.80 U	103	61-133	1	26	
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	110	66-129	1	23	
1,4-Dichlorobenzene	22		2.5	ug/L	20.0	0.76 U	109	65-133	1	23	
Bromodichloromethane	21		2.5	ug/L	20.0	0.52 U	107	58-135	3	19	
Bromoform	17		2.5	ug/L	20.0	0.75 U	85	46-148	5	18	
Bromomethane	14		2.5	ug/L	20.0	0.95 U	68	10-173	7	29	
Carbon Tetrachloride	24		2.5	ug/L	20.0	0.94 U	122	54-156	14	27	
Chlorobenzene	21		2.5	ug/L	20.0	0.72 U	107	51-139	3	13	
Chloroethane	17		2.5	ug/L	20.0	0.98 U	86	27-180	7	22	
Chloroform	22		2.5	ug/L	20.0	0.80 U	111	58-139	1	17	
Chloromethane	10		2.5	ug/L	20.0	0.82 U	50	33-154	4	31	
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.53 U	109	56-128	2	17	
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0	0.59 U	94	64-128	4	20	
Dibromochloromethane	19		2.5	ug/L	20.0	0.50 U	93	50-140	0.2	18	
Dichlorodifluoromethane	3.5		2.5	ug/L	20.0	0.74 U	17	10-180	1	26	
Freon 113	21		2.5	ug/L	20.0	0.73 U	104	47-173	6	30	
Tetrachloroethene	21		2.5	ug/L	20.0	0.76 U	103	60-147	4	21	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G26016 - EPA 5030B_MS - Continued

Matrix Spike Dup (1G26016-MSD1) Continued Prepared: 07/26/2021 00:00 Analyzed: 07/26/2021 19:51

Source: AE05878-02

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	21		2.5	ug/L	20.0	0.73 U	106	54-134	8	20	
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	106	65-149	2	17	
Trichloroethene	20		2.5	ug/L	20.0	0.89 U	100	62-135	11	20	
Trichlorofluoromethane	18		2.5	ug/L	20.0	0.94 U	89	56-155	10	22	
Vinyl chloride	16		2.5	ug/L	20.0	4.0	59	20-167	9	24	
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*101*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*41-146*			

Batch 1G27015 - EPA 5030B_MS

Blank (1G27015-BLK1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 09:07

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*99*	*41-142*			
Dibromofluoromethane	*57*			*ug/L*	*50.0*		*115*	*53-146*			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G27015 - EPA 5030B_MS - Continued

Blank (1G27015-BLK1) Continued Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 09:07

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*50*			*ug/L*	*50.0*		*101*	*41-146*			

LCS (1G27015-BS1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 08:09

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	24		2.5	ug/L	20.0		119	57-148			
1,1,2,2-Tetrachloroethane	16		2.5	ug/L	20.0		82	60-139			
1,1,2-Trichloroethane	18		2.5	ug/L	20.0		90	57-141			
1,1-Dichloroethane	24		2.5	ug/L	20.0		120	57-142			
1,1-Dichloroethene	24		2.5	ug/L	20.0		121	47-139			
1,2,4-Trichlorobenzene	20		2.5	ug/L	20.0		100	52-159			
1,2-Dibromo-3-chloropropane	18		2.5	ug/L	20.0		90	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0		94	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0		96	63-131			
1,2-Dichloroethane	21		2.5	ug/L	20.0		103	50-156			
1,2-Dichloropropane	19		2.5	ug/L	20.0		96	61-133			
1,3-Dichlorobenzene	19		2.5	ug/L	20.0		96	66-129			
1,4-Dichlorobenzene	19		2.5	ug/L	20.0		95	65-133			
Bromodichloromethane	20		2.5	ug/L	20.0		102	58-135			
Bromoform	19		2.5	ug/L	20.0		93	46-148			
Bromomethane	11		2.5	ug/L	20.0		55	10-173			
Carbon Tetrachloride	22		2.5	ug/L	20.0		109	54-156			
Chlorobenzene	20		2.5	ug/L	20.0		101	51-139			
Chloroethane	26		2.5	ug/L	20.0		128	27-180			
Chloroform	23		2.5	ug/L	20.0		116	58-139			
Chloromethane	21		2.5	ug/L	20.0		104	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0		109	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0		96	64-128			
Dibromochloromethane	19		2.5	ug/L	20.0		94	50-140			
Dichlorodifluoromethane	24		2.5	ug/L	20.0		122	10-180			
Freon 113	25		2.5	ug/L	20.0		124	47-173			
Tetrachloroethene	19		2.5	ug/L	20.0		95	60-147			
trans-1,2-Dichloroethene	23		2.5	ug/L	20.0		115	54-134			
trans-1,3-Dichloropropene	19		2.5	ug/L	20.0		95	65-149			
Trichloroethene	22		2.5	ug/L	20.0		109	62-135			
Trichlorofluoromethane	22		2.5	ug/L	20.0		108	56-155			
Vinyl chloride	22		2.5	ug/L	20.0		109	20-167			
4-Bromofluorobenzene	*49*	*I*		*ug/L*	*50.0*		*97*	*41-142*			
Dibromofluoromethane	*55*			*ug/L*	*50.0*		*110*	*53-146*			
Toluene-d8	*49*	*I*		*ug/L*	*50.0*		*99*	*41-146*			

Matrix Spike (1G27015-MS1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 11:59

Source: AE06066-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2800		250	ug/L	2000	80 U	138	57-148			
1,1,2,2-Tetrachloroethane	1800		250	ug/L	2000	54 U	92	60-139			
1,1,2-Trichloroethane	2000		250	ug/L	2000	76 U	99	57-141			
1,1-Dichloroethane	2700		250	ug/L	2000	62 U	137	57-142			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G27015 - EPA 5030B_MS - Continued

Matrix Spike (1G27015-MS1) Continued Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 11:59

Source: AE06066-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	2800		250	ug/L	2000	94 U	138	47-139			
1,2,4-Trichlorobenzene	1900		250	ug/L	2000	70 U	96	52-159			
1,2-Dibromo-3-chloropropane	2000		250	ug/L	2000	96 U	100	48-150			
1,2-Dibromoethane	2000		250	ug/L	2000	78 U	100	57-140			
1,2-Dichlorobenzene	2000		250	ug/L	2000	73 U	98	63-131			
1,2-Dichloroethane	2400		250	ug/L	2000	63 U	118	50-156			
1,2-Dichloropropane	2200		250	ug/L	2000	80 U	109	61-133			
1,3-Dichlorobenzene	2000		250	ug/L	2000	77 U	98	66-129			
1,4-Dichlorobenzene	1900		250	ug/L	2000	76 U	97	65-133			
Bromodichloromethane	2200		250	ug/L	2000	52 U	112	58-135			
Bromoform	2000		250	ug/L	2000	75 U	102	46-148			
Bromomethane	1300		250	ug/L	2000	95 U	67	10-173			
Carbon Tetrachloride	2500		250	ug/L	2000	94 U	125	54-156			
Chlorobenzene	2200		250	ug/L	2000	72 U	108	51-139			
Chloroethane	2500		250	ug/L	2000	98 U	125	27-180			
Chloroform	2600		250	ug/L	2000	80 U	130	58-139			
Chloromethane	2300		250	ug/L	2000	82 U	115	33-154			
cis-1,2-Dichloroethene	2400		250	ug/L	2000	53 U	120	56-128			
cis-1,3-Dichloropropene	2000		250	ug/L	2000	59 U	101	64-128			
Dibromochloromethane	2000		250	ug/L	2000	50 U	101	50-140			
Dichlorodifluoromethane	2600		250	ug/L	2000	74 U	130	10-180			
Freon 113	2800		250	ug/L	2000	73 U	141	47-173			
Tetrachloroethene	2000		250	ug/L	2000	76 U	99	60-147			
trans-1,2-Dichloroethene	2500		250	ug/L	2000	73 U	124	54-134			
trans-1,3-Dichloropropene	2000		250	ug/L	2000	73 U	100	65-149			
Trichloroethene	2400		250	ug/L	2000	89 U	121	62-135			
Trichlorofluoromethane	2300		250	ug/L	2000	94 U	116	56-155			
Vinyl chloride	2300		250	ug/L	2000	71 U	117	20-167			
4-Bromofluorobenzene	*5000*			*ug/L*	*5000*		*100*	*41-142*			
Dibromofluoromethane	*5600*			*ug/L*	*5000*		*113*	*53-146*			
Toluene-d8	*5000*			*ug/L*	*5000*		*100*	*41-146*			

Matrix Spike Dup (1G27015-MSD1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 12:28

Source: AE06066-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2800		250	ug/L	2000	80 U	138	57-148	0.3	25	
1,1,2,2-Tetrachloroethane	1900		250	ug/L	2000	54 U	94	60-139	2	17	
1,1,2-Trichloroethane	2000		250	ug/L	2000	76 U	99	57-141	0.6	16	
1,1-Dichloroethane	2700		250	ug/L	2000	62 U	137	57-142	0	24	
1,1-Dichloroethene	2800		250	ug/L	2000	94 U	139	47-139	1	16	
1,2,4-Trichlorobenzene	2100		250	ug/L	2000	70 U	104	52-159	8	24	
1,2-Dibromo-3-chloropropane	2000		250	ug/L	2000	96 U	99	48-150	0.8	21	
1,2-Dibromoethane	2100		250	ug/L	2000	78 U	103	57-140	3	16	
1,2-Dichlorobenzene	2000		250	ug/L	2000	73 U	102	63-131	4	25	
1,2-Dichloroethane	2300		250	ug/L	2000	63 U	116	50-156	1	18	
1,2-Dichloropropane	2200		250	ug/L	2000	80 U	108	61-133	2	26	
1,3-Dichlorobenzene	2000		250	ug/L	2000	77 U	101	66-129	3	23	
1,4-Dichlorobenzene	2000		250	ug/L	2000	76 U	102	65-133	5	23	

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G27015 - EPA 5030B_MS - Continued

Matrix Spike Dup (1G27015-MSD1) Continued Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 12:28

Source: AE06066-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	2300		250	ug/L	2000	52 U	114	58-135	2	19	
Bromoform	2100		250	ug/L	2000	75 U	106	46-148	4	18	
Bromomethane	1600		250	ug/L	2000	95 U	79	10-173	16	29	
Carbon Tetrachloride	2500		250	ug/L	2000	94 U	127	54-156	1	27	
Chlorobenzene	2200		250	ug/L	2000	72 U	108	51-139	0.05	13	
Chloroethane	2500		250	ug/L	2000	98 U	125	27-180	0.3	22	
Chloroform	2600		250	ug/L	2000	80 U	131	58-139	1	17	
Chloromethane	2300		250	ug/L	2000	82 U	116	33-154	0.8	31	
cis-1,2-Dichloroethene	2400		250	ug/L	2000	53 U	122	56-128	2	17	
cis-1,3-Dichloropropene	2100		250	ug/L	2000	59 U	103	64-128	2	20	
Dibromochloromethane	2000		250	ug/L	2000	50 U	102	50-140	1	18	
Dichlorodifluoromethane	2600		250	ug/L	2000	74 U	129	10-180	1	26	
Freon 113	2900		250	ug/L	2000	73 U	143	47-173	2	30	
Tetrachloroethene	2000		250	ug/L	2000	76 U	99	60-147	0.5	21	
trans-1,2-Dichloroethene	2600		250	ug/L	2000	73 U	129	54-134	4	20	
trans-1,3-Dichloropropene	2000		250	ug/L	2000	73 U	102	65-149	3	17	
Trichloroethene	2400		250	ug/L	2000	89 U	121	62-135	0.08	20	
Trichlorofluoromethane	2300		250	ug/L	2000	94 U	114	56-155	0.9	22	
Vinyl chloride	2300		250	ug/L	2000	71 U	116	20-167	1	24	
4-Bromofluorobenzene	*5000*			*ug/L*	*5000*		*100*	*41-142*			
Dibromofluoromethane	*5800*			*ug/L*	*5000*		*117*	*53-146*			
Toluene-d8	*5100*			*ug/L*	*5000*		*102*	*41-146*			

Batch 1G27016 - EPA 5030B_MS

Blank (1G27016-BLK1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 09:34

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G27016 - EPA 5030B_MS - Continued

Blank (1G27016-BLK1) Continued Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 09:34

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*99*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*101*	*41-146*			

LCS (1G27016-BS1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 08:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0		113	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0		105	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0		103	57-141			
1,1-Dichloroethane	22		2.5	ug/L	20.0		111	57-142			
1,1-Dichloroethene	22		2.5	ug/L	20.0		109	47-139			
1,2,4-Trichlorobenzene	27		2.5	ug/L	20.0		134	52-159			
1,2-Dibromo-3-chloropropane	24		2.5	ug/L	20.0		118	48-150			
1,2-Dibromoethane	21		2.5	ug/L	20.0		103	57-140			
1,2-Dichlorobenzene	21		2.5	ug/L	20.0		105	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0		97	50-156			
1,2-Dichloropropane	21		2.5	ug/L	20.0		103	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0		111	66-129			
1,4-Dichlorobenzene	22		2.5	ug/L	20.0		108	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0		104	58-135			
Bromoform	19		2.5	ug/L	20.0		96	46-148			
Bromomethane	15		2.5	ug/L	20.0		75	10-173			
Carbon Tetrachloride	19		2.5	ug/L	20.0		95	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		105	51-139			
Chloroethane	23		2.5	ug/L	20.0		113	27-180			
Chloroform	22		2.5	ug/L	20.0		108	58-139			
Chloromethane	23		2.5	ug/L	20.0		116	33-154			
cis-1,2-Dichloroethene	23		2.5	ug/L	20.0		114	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		102	64-128			
Dibromochloromethane	19		2.5	ug/L	20.0		95	50-140			
Dichlorodifluoromethane	28		2.5	ug/L	20.0		141	10-180			
Freon 113	20		2.5	ug/L	20.0		102	47-173			
Tetrachloroethene	21		2.5	ug/L	20.0		104	60-147			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0		108	54-134			
trans-1,3-Dichloropropene	23		2.5	ug/L	20.0		115	65-149			
Trichloroethene	20		2.5	ug/L	20.0		100	62-135			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G27016 - EPA 5030B_MS - Continued

LCS (1G27016-BS1) Continued Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 08:38

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Trichlorofluoromethane	21		2.5	ug/L	20.0		106	56-155			
Vinyl chloride	23		2.5	ug/L	20.0		115	20-167			
4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*102*	*41-142*			
Dibromofluoromethane	*57*			*ug/L*	*50.0*		*113*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*102*	*41-146*			

Matrix Spike (1G27016-MS1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 18:28

Source: AE06178-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	24		2.5	ug/L	20.0	0.80 U	118	57-148			
1,1,2,2-Tetrachloroethane	21		2.5	ug/L	20.0	0.54 U	103	60-139			
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	103	57-141			
1,1-Dichloroethane	22		2.5	ug/L	20.0	0.62 U	111	57-142			
1,1-Dichloroethene	22		2.5	ug/L	20.0	0.94 U	111	47-139			
1,2,4-Trichlorobenzene	20		2.5	ug/L	20.0	0.70 U	101	52-159			QM-11
1,2-Dibromo-3-chloropropane	22		2.5	ug/L	20.0	0.96 U	110	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	97	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0	0.73 U	102	63-131			
1,2-Dichloroethane	20		2.5	ug/L	20.0	0.63 U	100	50-156			
1,2-Dichloropropane	19		2.5	ug/L	20.0	0.80 U	96	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	108	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	106	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0	0.52 U	104	58-135			
Bromoform	17		2.5	ug/L	20.0	0.75 U	84	46-148			
Bromomethane	24		2.5	ug/L	20.0	0.95 U	120	10-173			
Carbon Tetrachloride	24		2.5	ug/L	20.0	0.94 U	120	54-156			
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	108	51-139			
Chloroethane	26		2.5	ug/L	20.0	0.98 U	129	27-180			
Chloroform	22		2.5	ug/L	20.0	0.80 U	111	58-139			
Chloromethane	24		2.5	ug/L	20.0	0.82 U	122	33-154			
cis-1,2-Dichloroethene	23		2.5	ug/L	20.0	0.53 U	114	56-128			
cis-1,3-Dichloropropene	19		2.5	ug/L	20.0	0.59 U	93	64-128			
Dibromochloromethane	19		2.5	ug/L	20.0	0.50 U	95	50-140			
Dichlorodifluoromethane	30		2.5	ug/L	20.0	0.74 U	148	10-180			
Freon 113	20		2.5	ug/L	20.0	0.73 U	100	47-173			
Tetrachloroethene	20		2.5	ug/L	20.0	0.76 U	100	60-147			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.73 U	112	54-134			
trans-1,3-Dichloropropene	22		2.5	ug/L	20.0	0.73 U	109	65-149			
Trichloroethene	21		2.5	ug/L	20.0	0.89 U	106	62-135			
Trichlorofluoromethane	23		2.5	ug/L	20.0	0.94 U	116	56-155			
Vinyl chloride	35		2.5	ug/L	20.0	12	115	20-167			
4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*103*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*108*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*41-146*			

Matrix Spike Dup (1G27016-MSD1) Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 18:56

Source: AE06178-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G27016 - EPA 5030B_MS - Continued

Matrix Spike Dup (1G27016-MSD1) Continued Prepared: 07/27/2021 00:00 Analyzed: 07/27/2021 18:56

Source: AE06178-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0	0.80 U	111	57-148	6	25	
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0	0.54 U	100	60-139	2	17	
1,1,2-Trichloroethane	21		2.5	ug/L	20.0	0.76 U	104	57-141	0.7	16	
1,1-Dichloroethane	22		2.5	ug/L	20.0	0.62 U	110	57-142	1	24	
1,1-Dichloroethene	22		2.5	ug/L	20.0	0.94 U	108	47-139	3	16	
1,2,4-Trichlorobenzene	26		2.5	ug/L	20.0	0.70 U	129	52-159	25	24	QM-11
1,2-Dibromo-3-chloropropane	25		2.5	ug/L	20.0	0.96 U	124	48-150	12	21	
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	94	57-140	3	16	
1,2-Dichlorobenzene	21		2.5	ug/L	20.0	0.73 U	106	63-131	4	25	
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	96	50-156	4	18	
1,2-Dichloropropane	20		2.5	ug/L	20.0	0.80 U	102	61-133	5	26	
1,3-Dichlorobenzene	22		2.5	ug/L	20.0	0.77 U	109	66-129	1	23	
1,4-Dichlorobenzene	21		2.5	ug/L	20.0	0.76 U	105	65-133	1	23	
Bromodichloromethane	21		2.5	ug/L	20.0	0.52 U	103	58-135	1	19	
Bromoform	17		2.5	ug/L	20.0	0.75 U	83	46-148	1	18	
Bromomethane	22		2.5	ug/L	20.0	0.95 U	109	10-173	10	29	
Carbon Tetrachloride	20		2.5	ug/L	20.0	0.94 U	102	54-156	17	27	
Chlorobenzene	21		2.5	ug/L	20.0	0.72 U	106	51-139	2	13	
Chloroethane	22		2.5	ug/L	20.0	0.98 U	111	27-180	15	22	
Chloroform	22		2.5	ug/L	20.0	0.80 U	108	58-139	3	17	
Chloromethane	23		2.5	ug/L	20.0	0.82 U	116	33-154	5	31	
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.53 U	108	56-128	5	17	
cis-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.59 U	92	64-128	0.6	20	
Dibromochloromethane	18		2.5	ug/L	20.0	0.50 U	91	50-140	4	18	
Dichlorodifluoromethane	28		2.5	ug/L	20.0	0.74 U	142	10-180	5	26	
Freon 113	20		2.5	ug/L	20.0	0.73 U	102	47-173	2	30	
Tetrachloroethene	20		2.5	ug/L	20.0	0.76 U	101	60-147	0.3	21	
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.73 U	109	54-134	3	20	
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	106	65-149	3	17	
Trichloroethene	20		2.5	ug/L	20.0	0.89 U	101	62-135	5	20	
Trichlorofluoromethane	23		2.5	ug/L	20.0	0.94 U	113	56-155	3	22	
Vinyl chloride	34		2.5	ug/L	20.0	12	110	20-167	3	24	
4-Bromofluorobenzene	*51*			*ug/L*	*50.0*		*102*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*104*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

Batch 1G28012 - EPA 5030B_MS

Blank (1G28012-BLK1) Prepared: 07/28/2021 00:00 Analyzed: 07/28/2021 09:48

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G28012 - EPA 5030B_MS - Continued

Blank (1G28012-BLK1) Continued Prepared: 07/28/2021 00:00 Analyzed: 07/28/2021 09:48

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*99*	*41-142*			
Dibromofluoromethane	*49*	*I*		*ug/L*	*50.0*		*99*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*41-146*			

LCS (1G28012-BS1) Prepared: 07/28/2021 00:00 Analyzed: 07/28/2021 08:52

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0		110	57-148			
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0		102	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0		101	57-141			
1,1-Dichloroethane	21		2.5	ug/L	20.0		107	57-142			
1,1-Dichloroethene	21		2.5	ug/L	20.0		105	47-139			
1,2,4-Trichlorobenzene	27		2.5	ug/L	20.0		133	52-159			
1,2-Dibromo-3-chloropropane	23		2.5	ug/L	20.0		114	48-150			
1,2-Dibromoethane	20		2.5	ug/L	20.0		98	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0		100	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0		93	50-156			
1,2-Dichloropropane	20		2.5	ug/L	20.0		98	61-133			
1,3-Dichlorobenzene	22		2.5	ug/L	20.0		108	66-129			
1,4-Dichlorobenzene	21		2.5	ug/L	20.0		105	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0		103	58-135			
Bromoform	18		2.5	ug/L	20.0		91	46-148			
Bromomethane	14		2.5	ug/L	20.0		68	10-173			
Carbon Tetrachloride	18		2.5	ug/L	20.0		91	54-156			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G28012 - EPA 5030B_MS - Continued

LCS (1G28012-BS1) Continued Prepared: 07/28/2021 00:00 Analyzed: 07/28/2021 08:52

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene	20		2.5	ug/L	20.0		102	51-139			
Chloroethane	18		2.5	ug/L	20.0		92	27-180			
Chloroform	21		2.5	ug/L	20.0		106	58-139			
Chloromethane	20		2.5	ug/L	20.0		98	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0		108	56-128			
cis-1,3-Dichloropropene	20		2.5	ug/L	20.0		98	64-128			
Dibromochloromethane	19		2.5	ug/L	20.0		93	50-140			
Dichlorodifluoromethane	18		2.5	ug/L	20.0		88	10-180			
Freon 113	19		2.5	ug/L	20.0		97	47-173			
Tetrachloroethene	20		2.5	ug/L	20.0		101	60-147			
trans-1,2-Dichloroethene	20		2.5	ug/L	20.0		102	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0		107	65-149			
Trichloroethene	20		2.5	ug/L	20.0		101	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0		98	56-155			
Vinyl chloride	19		2.5	ug/L	20.0		94	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*100*	*41-142*			
Dibromofluoromethane	*52*			*ug/L*	*50.0*		*105*	*53-146*			
Toluene-d8	*51*			*ug/L*	*50.0*		*103*	*41-146*			

Matrix Spike (1G28012-MS1) Prepared: 07/28/2021 00:00 Analyzed: 07/28/2021 19:08

Source: AE05483-01

Analyte	Result	Flag	POL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	23		2.5	ug/L	20.0	0.80 U	113	57-148			
1,1,2,2-Tetrachloroethane	20		2.5	ug/L	20.0	0.54 U	101	60-139			
1,1,2-Trichloroethane	20		2.5	ug/L	20.0	0.76 U	102	57-141			
1,1-Dichloroethane	22		2.5	ug/L	20.0	0.62 U	112	57-142			
1,1-Dichloroethene	23		2.5	ug/L	20.0	0.94 U	113	47-139			
1,2,4-Trichlorobenzene	23		2.5	ug/L	20.0	0.70 U	116	52-159			
1,2-Dibromo-3-chloropropane	22		2.5	ug/L	20.0	0.96 U	110	48-150			
1,2-Dibromoethane	19		2.5	ug/L	20.0	0.78 U	97	57-140			
1,2-Dichlorobenzene	20		2.5	ug/L	20.0	0.73 U	99	63-131			
1,2-Dichloroethane	19		2.5	ug/L	20.0	0.63 U	93	50-156			
1,2-Dichloropropane	20		2.5	ug/L	20.0	0.80 U	101	61-133			
1,3-Dichlorobenzene	21		2.5	ug/L	20.0	0.77 U	104	66-129			
1,4-Dichlorobenzene	20		2.5	ug/L	20.0	0.76 U	102	65-133			
Bromodichloromethane	21		2.5	ug/L	20.0	0.52 U	103	58-135			
Bromoform	15		2.5	ug/L	20.0	0.75 U	74	46-148			
Bromomethane	8.3		2.5	ug/L	20.0	0.95 U	42	10-173			
Carbon Tetrachloride	21		2.5	ug/L	20.0	0.94 U	106	54-156			
Chlorobenzene	22		2.5	ug/L	20.0	0.72 U	108	51-139			
Chloroethane	18		2.5	ug/L	20.0	0.98 U	92	27-180			
Chloroform	21		2.5	ug/L	20.0	0.80 U	106	58-139			
Chloromethane	17		2.5	ug/L	20.0	0.82 U	85	33-154			
cis-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.53 U	110	56-128			
cis-1,3-Dichloropropene	18		2.5	ug/L	20.0	0.59 U	92	64-128			
Dibromochloromethane	18		2.5	ug/L	20.0	0.50 U	91	50-140			
Dichlorodifluoromethane	19		2.5	ug/L	20.0	0.74 U	93	10-180			
Freon 113	21		2.5	ug/L	20.0	0.73 U	107	47-173			

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1G28012 - EPA 5030B_MS - Continued

Matrix Spike (1G28012-MS1) Continued Prepared: 07/28/2021 00:00 Analyzed: 07/28/2021 19:08

Source: AE05483-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Tetrachloroethene	20		2.5	ug/L	20.0	0.76 U	102	60-147			
trans-1,2-Dichloroethene	22		2.5	ug/L	20.0	0.73	107	54-134			
trans-1,3-Dichloropropene	21		2.5	ug/L	20.0	0.73 U	106	65-149			
Trichloroethene	22		2.5	ug/L	20.0	0.89 U	109	62-135			
Trichlorofluoromethane	22		2.5	ug/L	20.0	0.94 U	111	56-155			
Vinyl chloride	25		2.5	ug/L	20.0	7.4	87	20-167			
4-Bromofluorobenzene	*52*			*ug/L*	*50.0*		*104*	*41-142*			
Dibromofluoromethane	*53*			*ug/L*	*50.0*		*106*	*53-146*			
Toluene-d8	*52*			*ug/L*	*50.0*		*104*	*41-146*			

FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*****	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
J-05	Result may be biased low. Associated calibration verification standard did not meet the minimum control limit.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

B	The analyte was detected in the associated method blank.
D	The sample was analyzed at dilution.
J	The reported result is an estimated value.
U	The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence (85% or greater confidence) to make a “tentative identification".
Q	One or more quality control criteria failed.

Tetra Tech, Inc.

AFO5878

CHAIN OF CUSTODY | NUMBER No. 2496 | PAGE 1 OF 3

PROJECT NO:	FACILITY: (HMPN)	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G08582	KSL-HMPN	Chris Hook	(412) 921-7090	ENCO – Kaitlin Dylnicki
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE
				Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: 8260D TCL 50 MGI	COMMENTS
07/20	1015	HMPN-MW0037-010.0-20210720	0720	5	15	GW	G	3			X	
	1050	HMPN-MW0038-020.0-20210720		15	25							
	1120	HMPN-MW0046-015.0-20210720		10	20							
	1150	HMPN-MW0047-025.0-20210720		20	30							
	1225	HMPN-MW0039-035.0-20210720		30	40							
	1255	HMPN-MW0040-042.5-20210720		40	45							
	1410	HMPN-MW0027-042.5-20210720		40	45							
07/20	1450	HMPN-MW0028-042.5-20210720		45	50							
07/21	0855	HMPN-MW0045-030.0-20210721		25	35							
	1010	HMPN-MW0036-015.0-20210721		10	20							
	1125	HMPN-MW0041-035.0-20210721		30	40							
	1250	HMPN-MW0042-042.5-20210721		40	45							
07/21	1325	HMPN-MW0043-035.0-20210721		30	40	GW	G	3			X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY James W Gregory	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS C/210I 5.0°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

AEO 5878 AEO 5878

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2497 | PAGE 2 OF 3

PROJECT NO: 112G08982	FACILITY: KSC-HMPN (HMFN)	PROJECT MANAGER Chris Hoon	PHONE NUMBER (412) 921-7090	LABORATORY NAME AND CONTACT: ENCO – Matthew Ortwein
SAMPLERS (SIGNATURE) Chuck Sorden		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER (321) 591-7580	ADDRESS 10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl	TYPE OF ANALYSIS: 8260 DTCL SOM01	COMMENTS
07/21	1415	HMPN-MW0044-042.5-20210721		40	45	GW	G	3	X			
	1445	HMPN-MW0011-025.0-20210721		20	30							
	1545	HMPN-MW0009-010.8-20210721		6.6	15							
	1615	HMPN-MW0034-015.0-20210721		10	20							
07/21	1645	HMPN-MW0035-035.0-20210721		30	40							
07/22	0910	HMPN-MW0016-010.0-20210722		5	15							
	1000	HMPN-MW0029-015.0-20210722		10	20							
	1035	HMPN-MW0030-025.0-20210722		20	30							
	1130	HMPN-MW0031-035.0-20210722		30	40							
	1215	HMPN-MW0032-042.5-20210722		40	45							
	1240	HMPN-MW0033-047.5-20210722		45	50							
	1315	HMPN-MW0008-025.0-20210722		20	30							
07/22	1405	HMPN-MW0024-060.0-20210722		55	65	GW	G	3	X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY Jamison Guym	7/22/21	1515
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS C-2101 5.0°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

AED5878

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2498 | PAGE 3 OF 3

PROJECT NO: 112G08982	FACILITY: HSC - HMPN	PROJECT MANAGER Chris Hook	PHONE NUMBER (412) 921-7090	LABORATORY NAME AND CONTACT: ENCO – Kaitlin Dolnick
SAMPLERS (SIGNATURE) Chuck Sorden		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER (321) 591-7580	ADDRESS 10775 Central Port Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: 8260D TCL SOM02 HCl	COMMENTS
								CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	
								PRESERVATIVE USED		
07/22	1435	HMPN-MW0002-035.0-20210722		30	40	GW	G	3	X	
07/22	1500	HMPN-MW0004-010.0-20210722		5	15	GW	G	3	X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	07/22/21	1515	1. RECEIVED BY Jamie N Gregory	7/22/21	1615
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS C-2101 5.0°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

7/22/2021

Environmental Conservation Labs, Inc.

Chris Hook
Tetra Tech NUS, Inc. (TE015)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8582
Fax:

Reference : **Sample Receipt Confirmation - *Please Review***
Project Name / Number : NASA KSC HMFN / 112G08982
Purchase Order # : 1170718

Lab Reference # : AE05878 Lab Receipt Date: 22-Jul-21 15:15
Anticipated ***(Estimated)*** Completion Date: 29-Jul-21 19:00

This is an automated notification from our laboratory information management system (LIMS), indicating the samples we have recently received and their associated analyses. Should any of the following information be in error, please contact us immediately.

Thank you for choosing Environmental Conservation Laboratories. Should any events occur that delay the processing of your samples or inhibit our ability to complete the project within the projected time frame you will be contacted.

Sincerely,

Kaitlin Dylnicki

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0037-010.0-20210720(Lab ID: AE05878-01), Matrix: Ground Water, Sampled: 20-Jul-21 10:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0038-010.0-20210720(Lab ID: AE05878-02), Matrix: Ground Water, Sampled: 20-Jul-21 10:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0046-015.0-20210720(Lab ID: AE05878-03), Matrix: Ground Water, Sampled: 20-Jul-21 11:20 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0047-025.0-20210720(Lab ID: AE05878-04), Matrix: Ground Water, Sampled: 20-Jul-21 11:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0039-035.0-20210720(Lab ID: AE05878-05), Matrix: Ground Water, Sampled: 20-Jul-21 12:25 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0040-042.5-20210720(Lab ID: AE05878-06), Matrix: Ground Water, Sampled: 20-Jul-21 12:55 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0027-042.5-20210720(Lab ID: AE05878-07), Matrix: Ground Water, Sampled: 20-Jul-21 14:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received
Sample ID: HMPN-MW0028-047.5-20210720(Lab ID: AE05878-08), Matrix: Ground Water, Sampled: 20-Jul-21 14:50 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	03-Aug-21 23:59	Received

Client: Tetra Tech NUS, Inc. (TE015) **Project Name:** NASA KSC HMFN
Requested TAT: 5 **Project Number:** 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0045-030.0-20210721(Lab ID: AE05878-09), Matrix: Ground Water, Sampled: 21-Jul-21 08:55 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0036-015.0-20210721(Lab ID: AE05878-10), Matrix: Ground Water, Sampled: 21-Jul-21 10:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0041-035.0-20210721(Lab ID: AE05878-11), Matrix: Ground Water, Sampled: 21-Jul-21 11:25 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on containers says 1130, JAJ 7/22/21.			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0042-042.5-20210721(Lab ID: AE05878-12), Matrix: Ground Water, Sampled: 21-Jul-21 12:50 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on containers says 1245, JAJ 7/22/21.			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0043-035.0-20210721(Lab ID: AE05878-13), Matrix: Ground Water, Sampled: 21-Jul-21 13:25 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0044-042.5-20210721(Lab ID: AE05878-14), Matrix: Ground Water, Sampled: 21-Jul-21 14:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0011-025.0-20210721(Lab ID: AE05878-15), Matrix: Ground Water, Sampled: 21-Jul-21 14:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0009-010.8-20210721(Lab ID: AE05878-16), Matrix: Ground Water, Sampled: 21-Jul-21 15:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0034-015.0-20210721(Lab ID: AE05878-17), Matrix: Ground Water, Sampled: 21-Jul-21 16:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0035-035.0-20210721(Lab ID: AE05878-18), Matrix: Ground Water, Sampled: 21-Jul-21 16:45 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	04-Aug-21 23:59	Received
Sample ID: HMPN-MW0016-010.0-20210722(Lab ID: AE05878-19), Matrix: Ground Water, Sampled: 22-Jul-21 09:10 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0029-015.0-20210722(Lab ID: AE05878-20), Matrix: Ground Water, Sampled: 22-Jul-21 10:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0030-025.0-20210722(Lab ID: AE05878-21), Matrix: Ground Water, Sampled: 22-Jul-21 10:35 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0031-035.0-20210722(Lab ID: AE05878-22), Matrix: Ground Water, Sampled: 22-Jul-21 11:30 (GMT-05:00) Eastern Time (US &			
Sample Comments: Time on containers says 1125, JAJ 7/22/21.			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0032-042.5-20210722(Lab ID: AE05878-23), Matrix: Ground Water, Sampled: 22-Jul-21 12:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0033-047.5-20210722(Lab ID: AE05878-24), Matrix: Ground Water, Sampled: 22-Jul-21 12:40 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received

Client: Tetra Tech NUS, Inc. (TE015)
Requested TAT: 5

Project Name: NASA KSC HMFN
Project Number: 112G08982

Analysis	TAT	Expires	Status
Sample ID: HMPN-MW0008-025.0-20210722(Lab ID: AE05878-25), Matrix: Ground Water, Sampled: 22-Jul-21 13:15 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0024-060.0-20210722(Lab ID: AE05878-26), Matrix: Ground Water, Sampled: 22-Jul-21 14:05 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0002-035.0-20210722(Lab ID: AE05878-27), Matrix: Ground Water, Sampled: 22-Jul-21 14:35 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received
Sample ID: HMPN-MW0004-010.0-20210722(Lab ID: AE05878-28), Matrix: Ground Water, Sampled: 22-Jul-21 15:00 (GMT-05:00) Eastern Time (US &			
8260D TCL SOM01.2 CLP-LIKE	5	05-Aug-21 23:59	Received

Analysis Groups included in this work order

ENCO Orlando

SDG: AE05878-TE015

CLASS: 01_VOA_MS

METHOD: EPA 8260D

ANALYSES DATA PACKAGE COVER PAGE

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Client Sample Id:	Lab Sample Id:
HMPN-MW0037-010.0-20210720	AE05878-01
HMPN-MW0038-020.0-20210720	AE05878-02
HMPN-MW0046-015.0-20210720	AE05878-03
HMPN-MW0047-025.0-20210720	AE05878-04
HMPN-MW0047-025.0-20210720	AE05878-04RE1
HMPN-MW0039-035.0-20210720	AE05878-05
HMPN-MW0040-042.5-20210720	AE05878-06
HMPN-MW0027-042.5-20210720	AE05878-07
HMPN-MW0028-047.5-20210720	AE05878-08
HMPN-MW0045-030.0-20210721	AE05878-09
HMPN-MW0036-015.0-20210721	AE05878-10
HMPN-MW0041-035.0-20210721	AE05878-11
HMPN-MW0042-042.5-20210721	AE05878-12
HMPN-MW0042-042.5-20210721	AE05878-12RE1
HMPN-MW0043-035.0-20210721	AE05878-13
HMPN-MW0044-042.5-20210721	AE05878-14
HMPN-MW0044-042.5-20210721	AE05878-14RE1
HMPN-MW0011-025.0-20210721	AE05878-15
HMPN-MW0009-010.8-20210721	AE05878-16
HMPN-MW0034-015.0-20210721	AE05878-17
HMPN-MW0035-035.0-20210721	AE05878-18
HMPN-MW0016-010.0-20210722	AE05878-19
HMPN-MW0016-010.0-20210722	AE05878-19RE1
HMPN-MW0029-015.0-20210722	AE05878-20
HMPN-MW0030-025.0-20210722	AE05878-21
HMPN-MW0031-035.0-20210722	AE05878-22
HMPN-MW0032-042.5-20210722	AE05878-23
HMPN-MW0032-042.5-20210722	AE05878-23RE1
HMPN-MW0033-047.5-20210722	AE05878-24
HMPN-MW0008-025.0-20210722	AE05878-25
HMPN-MW0024-060.0-20210722	AE05878-26
HMPN-MW0002-035.0-20210722	AE05878-27
HMPN-MW0002-035.0-20210722	AE05878-27RE1
HMPN-MW0004-010.0-20210722	AE05878-28

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-01
File ID: 215GU008.D
Sampled: 07/20/21 10:15
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 10:58
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	14		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.84	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	9.4		0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1081654	9.862	1101889	9.851	
1,4-Difluorobenzene	2644846	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0037-010.0-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-01	File ID:	215GU008.D
Sampled:	07/20/21 10:15	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 10:58
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1596495	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1222070	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-02
File ID: 215GU007.D
Sampled: 07/20/21 10:50
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 10:30
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	4.0		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.5
75-34-3	1,1-Dichloroethane	1	3.0		0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	50	100	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1095521	9.857	1101889	9.851	
1,4-Difluorobenzene	2649154	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0038-020.0-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-02
File ID: 215GU007.D
Sampled: 07/20/21 10:50
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 10:30
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1651203	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1252310	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0046-015.0-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-03
File ID: 215GU009.D
Sampled: 07/20/21 11:20
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 11:26
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.60	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1057130	9.857	1101889	9.851	
1,4-Difluorobenzene	2544592	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0046-015.0-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-03	File ID:	215GU009.D
Sampled:	07/20/21 11:20	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 11:26
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1582822	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1222363	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0047-025.0-20210720

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-04RE1 File ID: 215GV008.D

Sampled: 07/20/21 11:50 Prepared: 07/27/21 09:06 Analyzed: 07/27/21 10:58

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G27016 Sequence: AA67520 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.76	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	105	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1006516	9.857	1101889	9.851	
1,4-Difluorobenzene	2417256	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0047-025.0-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-04RE1	File ID:	215GV008.D
Sampled:	07/20/21 11:50	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 10:58
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1490343	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1149390	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-05
File ID: 215GU011.D
Sampled: 07/20/21 12:25
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 12:22
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	5	3.7	UD	3.7	12
74-87-3	Chloromethane	5	4.1	UD	4.1	12
75-01-4	Vinyl chloride	5	150	D	3.6	12
74-83-9	Bromomethane	5	4.8	UD	4.8	12
75-00-3	Chloroethane	5	4.9	UD	4.9	12
75-69-4	Trichlorofluoromethane	5	4.7	UD	4.7	12
76-13-1	Freon 113	5	3.6	UD	3.6	12
75-35-4	1,1-Dichloroethene	5	4.7	UD	4.7	12
156-60-5	trans-1,2-Dichloroethene	5	3.6	UD	3.6	12
156-59-2	cis-1,2-Dichloroethene	5	280	D	2.6	12
75-34-3	1,1-Dichloroethane	5	3.1	UD	3.1	12
67-66-3	Chloroform	5	4.0	UD	4.0	12
71-55-6	1,1,1-Trichloroethane	5	4.0	UD	4.0	12
56-23-5	Carbon Tetrachloride	5	4.7	UD	4.7	12
107-06-2	1,2-Dichloroethane	5	3.2	UD	3.2	12
79-01-6	Trichloroethene	5	6.0	JD	4.4	12
78-87-5	1,2-Dichloropropane	5	4.0	UD	4.0	12
75-27-4	Bromodichloromethane	5	2.6	UD	2.6	12
10061-01-5	cis-1,3-Dichloropropene	5	3.0	UD	3.0	12
10061-02-6	trans-1,3-Dichloropropene	5	3.6	UD	3.6	12
79-00-5	1,1,2-Trichloroethane	5	3.8	UD	3.8	12
127-18-4	Tetrachloroethene	5	3.8	UD	3.8	12
124-48-1	Dibromochloromethane	5	2.5	UD	2.5	12
106-93-4	1,2-Dibromoethane	5	3.9	UD	3.9	12
108-90-7	Chlorobenzene	5	3.6	UD	3.6	12
75-25-2	Bromoform	5	3.8	UD	3.8	12
79-34-5	1,1,2,2-Tetrachloroethane	5	2.7	UD	2.7	12
120-82-1	1,2,4-Trichlorobenzene	5	3.5	UD	3.5	12
541-73-1	1,3-Dichlorobenzene	5	3.8	UD	3.8	12
106-46-7	1,4-Dichlorobenzene	5	3.8	UD	3.8	12
95-50-1	1,2-Dichlorobenzene	5	3.6	UD	3.6	12
96-12-8	1,2-Dibromo-3-chloropropane	5	4.8	UD	4.8	12

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	109	53 - 146	
Toluene-d8	50.0	51	103	41 - 146	
4-Bromofluorobenzene	50.0	50	100	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1001965	9.857	1101889	9.851	
1,4-Difluorobenzene	2502973	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0039-035.0-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-05	File ID:	215GU011.D
Sampled:	07/20/21 12:25	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 12:22
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1565135	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1207716	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210720

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-06 File ID: 215GU012.D

Sampled: 07/20/21 12:55 Prepared: 07/26/21 09:21 Analyzed: 07/26/21 12:50

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G26016 Sequence: AA67497 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.7	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	19		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	2.4	J	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	107	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	991122	9.863	1101889	9.851	
1,4-Difluorobenzene	2435457	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0040-042.5-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-06	File ID:	215GU012.D
Sampled:	07/20/21 12:55	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 12:50
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1508234	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1172707	15.497	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-07
File ID: 215GU013.D
Sampled: 07/20/21 14:10
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 13:18
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1000	740	UD	740	2500
74-87-3	Chloromethane	1000	820	UD	820	2500
75-01-4	Vinyl chloride	1000	710	UD	710	2500
74-83-9	Bromomethane	1000	950	UD	950	2500
75-00-3	Chloroethane	1000	980	UD	980	2500
75-69-4	Trichlorofluoromethane	1000	940	UD	940	2500
76-13-1	Freon 113	1000	37000	D	730	2500
75-35-4	1,1-Dichloroethene	1000	940	UD	940	2500
156-60-5	trans-1,2-Dichloroethene	1000	730	UD	730	2500
156-59-2	cis-1,2-Dichloroethene	1000	2700	D	530	2500
75-34-3	1,1-Dichloroethane	1000	620	UD	620	2500
67-66-3	Chloroform	1000	800	UD	800	2500
71-55-6	1,1,1-Trichloroethane	1000	800	UD	800	2500
56-23-5	Carbon Tetrachloride	1000	940	UD	940	2500
107-06-2	1,2-Dichloroethane	1000	630	UD	630	2500
79-01-6	Trichloroethene	1000	97000	D	890	2500
78-87-5	1,2-Dichloropropane	1000	800	UD	800	2500
75-27-4	Bromodichloromethane	1000	520	UD	520	2500
10061-01-5	cis-1,3-Dichloropropene	1000	590	UD	590	2500
10061-02-6	trans-1,3-Dichloropropene	1000	730	UD	730	2500
79-00-5	1,1,2-Trichloroethane	1000	760	UD	760	2500
127-18-4	Tetrachloroethene	1000	760	UD	760	2500
124-48-1	Dibromochloromethane	1000	500	UD	500	2500
106-93-4	1,2-Dibromoethane	1000	780	UD	780	2500
108-90-7	Chlorobenzene	1000	720	UD	720	2500
75-25-2	Bromoform	1000	750	UD	750	2500
79-34-5	1,1,2,2-Tetrachloroethane	1000	540	UD	540	2500
120-82-1	1,2,4-Trichlorobenzene	1000	700	UD	700	2500
541-73-1	1,3-Dichlorobenzene	1000	770	UD	770	2500
106-46-7	1,4-Dichlorobenzene	1000	760	UD	760	2500
95-50-1	1,2-Dichlorobenzene	1000	730	UD	730	2500
96-12-8	1,2-Dibromo-3-chloropropane	1000	960	UD	960	2500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	112	53 - 146	
Toluene-d8	50.0	53	106	41 - 146	
4-Bromofluorobenzene	50.0	50	100	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	961575	9.862	1101889	9.851	
1,4-Difluorobenzene	2358635	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0027-042.5-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-07	File ID:	215GU013.D
Sampled:	07/20/21 14:10	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 13:18
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1515567	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1167524	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-08
File ID: 215GU014.D
Sampled: 07/20/21 14:50
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 13:46
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	5000	3700	UD	3700	12000
74-87-3	Chloromethane	5000	4100	UD	4100	12000
75-01-4	Vinyl chloride	5000	3600	UD	3600	12000
74-83-9	Bromomethane	5000	4800	UD	4800	12000
75-00-3	Chloroethane	5000	4900	UD	4900	12000
75-69-4	Trichlorofluoromethane	5000	4700	UD	4700	12000
76-13-1	Freon 113	5000	120000	D	3600	12000
75-35-4	1,1-Dichloroethene	5000	4700	UD	4700	12000
156-60-5	trans-1,2-Dichloroethene	5000	3600	UD	3600	12000
156-59-2	cis-1,2-Dichloroethene	5000	15000	D	2600	12000
75-34-3	1,1-Dichloroethane	5000	3100	UD	3100	12000
67-66-3	Chloroform	5000	4000	UD	4000	12000
71-55-6	1,1,1-Trichloroethane	5000	4000	UD	4000	12000
56-23-5	Carbon Tetrachloride	5000	4700	UD	4700	12000
107-06-2	1,2-Dichloroethane	5000	3200	UD	3200	12000
79-01-6	Trichloroethene	5000	490000	D	4400	12000
78-87-5	1,2-Dichloropropane	5000	4000	UD	4000	12000
75-27-4	Bromodichloromethane	5000	2600	UD	2600	12000
10061-01-5	cis-1,3-Dichloropropene	5000	3000	UD	3000	12000
10061-02-6	trans-1,3-Dichloropropene	5000	3600	UD	3600	12000
79-00-5	1,1,2-Trichloroethane	5000	3800	UD	3800	12000
127-18-4	Tetrachloroethene	5000	3800	UD	3800	12000
124-48-1	Dibromochloromethane	5000	2500	UD	2500	12000
106-93-4	1,2-Dibromoethane	5000	3900	UD	3900	12000
108-90-7	Chlorobenzene	5000	3600	UD	3600	12000
75-25-2	Bromoform	5000	3800	UD	3800	12000
79-34-5	1,1,2,2-Tetrachloroethane	5000	2700	UD	2700	12000
120-82-1	1,2,4-Trichlorobenzene	5000	3500	UD	3500	12000
541-73-1	1,3-Dichlorobenzene	5000	3800	UD	3800	12000
106-46-7	1,4-Dichlorobenzene	5000	3800	UD	3800	12000
95-50-1	1,2-Dichlorobenzene	5000	3600	UD	3600	12000
96-12-8	1,2-Dibromo-3-chloropropane	5000	4800	UD	4800	12000

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	53	107	41 - 146	
4-Bromofluorobenzene	50.0	50	100	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	968042	9.862	1101889	9.851	
1,4-Difluorobenzene	2317750	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0028-047.5-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-08	File ID:	215GU014.D
Sampled:	07/20/21 14:50	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 13:46
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1524084	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1149538	15.497	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0045-030.0-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-09
File ID: 215GU015.D
Sampled: 07/21/21 08:55
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 14:14
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.9	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	1.8	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	984947	9.862	1101889	9.851	
1,4-Difluorobenzene	2429055	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0045-030.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-09	File ID:	215GU015.D
Sampled:	07/21/21 08:55	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 14:14
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1512894	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1140192	15.497	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-10
File ID: 215GU016.D
Sampled: 07/21/21 10:10
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 14:42
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.55	J	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	109	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	49	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	949225	9.862	1101889	9.851	
1,4-Difluorobenzene	2386925	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0036-015.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-10	File ID:	215GU016.D
Sampled:	07/21/21 10:10	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 14:42
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1493178	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1117556	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-11
File ID: 215GU017.D
Sampled: 07/21/21 11:25
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 15:10
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	28		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.77	J	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	92		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	19		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	56	112	53 - 146	
Toluene-d8	50.0	53	106	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	975181	9.862	1101889	9.851	
1,4-Difluorobenzene	2376404	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0041-035.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-11	File ID:	215GU017.D
Sampled:	07/21/21 11:25	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 15:10
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1480189	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1155350	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210721

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-12 File ID: 215GU018.D

Sampled: 07/21/21 12:50 Prepared: 07/26/21 09:21 Analyzed: 07/26/21 15:38

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G26016 Sequence: AA67497 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	25	18	UD	18	62
74-87-3	Chloromethane	25	20	UD	20	62
75-01-4	Vinyl chloride	25	140	D	18	62
74-83-9	Bromomethane	25	24	UD	24	62
75-00-3	Chloroethane	25	24	UD	24	62
75-69-4	Trichlorofluoromethane	25	24	UD	24	62
76-13-1	Freon 113	25	18	UD	18	62
75-35-4	1,1-Dichloroethene	25	24	UD	24	62
156-60-5	trans-1,2-Dichloroethene	25	18	UD	18	62
75-34-3	1,1-Dichloroethane	25	16	UD	16	62
67-66-3	Chloroform	25	20	UD	20	62
71-55-6	1,1,1-Trichloroethane	25	20	UD	20	62
56-23-5	Carbon Tetrachloride	25	24	UD	24	62
107-06-2	1,2-Dichloroethane	25	16	UD	16	62
79-01-6	Trichloroethene	25	1100	D	22	62
78-87-5	1,2-Dichloropropane	25	20	UD	20	62
75-27-4	Bromodichloromethane	25	13	UD	13	62
10061-01-5	cis-1,3-Dichloropropene	25	15	UD	15	62
10061-02-6	trans-1,3-Dichloropropene	25	18	UD	18	62
79-00-5	1,1,2-Trichloroethane	25	19	UD	19	62
127-18-4	Tetrachloroethene	25	19	UD	19	62
124-48-1	Dibromochloromethane	25	12	UD	12	62
106-93-4	1,2-Dibromoethane	25	20	UD	20	62
108-90-7	Chlorobenzene	25	18	UD	18	62
75-25-2	Bromoform	25	19	UD	19	62
79-34-5	1,1,2,2-Tetrachloroethane	25	14	UD	14	62
120-82-1	1,2,4-Trichlorobenzene	25	18	UD	18	62
541-73-1	1,3-Dichlorobenzene	25	19	UD	19	62
106-46-7	1,4-Dichlorobenzene	25	19	UD	19	62
95-50-1	1,2-Dichlorobenzene	25	18	UD	18	62
96-12-8	1,2-Dibromo-3-chloropropane	25	24	UD	24	62

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	110	53 - 146	
Toluene-d8	50.0	52	105	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	977873	9.863	1101889	9.851	
1,4-Difluorobenzene	2373184	10.456	2525815	10.444	
Chlorobenzene-d5	1498947	13.235	1610233	13.223	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-12	File ID:	215GU018.D
Sampled:	07/21/21 12:50	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 15:38
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	1173705	15.497	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0042-042.5-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-12RE1
File ID: 212GV020.D
Sampled: 07/21/21 12:50
Prepared: 07/27/21 08:51
Analyzed: 07/27/21 16:18
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27015
Sequence: AA67513
Calibration: 2107025
Instrument: OVGCMS2

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	100	3400	D	53	250

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	57	113	53 - 146	
Toluene-d8	50.0	49	98	41 - 146	
4-Bromofluorobenzene	50.0	48	96	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	172924	11.48	193062	11.49	
1,4-Difluorobenzene	323031	12.04	330090	12.04	
Chlorobenzene-d5	163079	14.63	152465	14.63	
1,4-Dichlorobenzene-d4	135643	16.99	126714	17	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0043-035.0-20210721

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-13 File ID: 215GU019.D

Sampled: 07/21/21 13:25 Prepared: 07/26/21 09:21 Analyzed: 07/26/21 16:07

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G26016 Sequence: AA67497 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.88	J	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	15		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	2.0	J	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	55	110	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	933431	9.863	1101889	9.851	
1,4-Difluorobenzene	2310606	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0043-035.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-13	File ID:	215GU019.D
Sampled:	07/21/21 13:25	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 16:07
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1438993	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1103603	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0044-042.5-20210721

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-14RE1 File ID: 215GV009.D

Sampled: 07/21/21 14:15 Prepared: 07/27/21 09:06 Analyzed: 07/27/21 11:26

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G27016 Sequence: AA67520 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	200	150	UD	150	500
74-87-3	Chloromethane	200	160	UD	160	500
75-01-4	Vinyl chloride	200	140	UD	140	500
74-83-9	Bromomethane	200	190	UD	190	500
75-00-3	Chloroethane	200	200	UD	200	500
75-69-4	Trichlorofluoromethane	200	190	UD	190	500
76-13-1	Freon 113	200	17000	D	150	500
75-35-4	1,1-Dichloroethene	200	190	UD	190	500
156-60-5	trans-1,2-Dichloroethene	200	150	UD	150	500
156-59-2	cis-1,2-Dichloroethene	200	340	JD	110	500
75-34-3	1,1-Dichloroethane	200	120	UD	120	500
67-66-3	Chloroform	200	160	UD	160	500
71-55-6	1,1,1-Trichloroethane	200	160	UD	160	500
56-23-5	Carbon Tetrachloride	200	190	UD	190	500
107-06-2	1,2-Dichloroethane	200	130	UD	130	500
79-01-6	Trichloroethene	200	220	JD	180	500
78-87-5	1,2-Dichloropropane	200	160	UD	160	500
75-27-4	Bromodichloromethane	200	100	UD	100	500
10061-01-5	cis-1,3-Dichloropropene	200	120	UD	120	500
10061-02-6	trans-1,3-Dichloropropene	200	150	UD	150	500
79-00-5	1,1,2-Trichloroethane	200	150	UD	150	500
127-18-4	Tetrachloroethene	200	150	UD	150	500
124-48-1	Dibromochloromethane	200	100	UD	100	500
106-93-4	1,2-Dibromoethane	200	160	UD	160	500
108-90-7	Chlorobenzene	200	140	UD	140	500
75-25-2	Bromoform	200	150	UD	150	500
79-34-5	1,1,2,2-Tetrachloroethane	200	110	UD	110	500
120-82-1	1,2,4-Trichlorobenzene	200	140	UD	140	500
541-73-1	1,3-Dichlorobenzene	200	150	UD	150	500
106-46-7	1,4-Dichlorobenzene	200	150	UD	150	500
95-50-1	1,2-Dichlorobenzene	200	150	UD	150	500
96-12-8	1,2-Dibromo-3-chloropropane	200	190	UD	190	500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	50	100	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1021883	9.857	1101889	9.851	
1,4-Difluorobenzene	2461273	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0044-042.5-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-14RE1	File ID:	215GV009.D
Sampled:	07/21/21 14:15	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 11:26
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1486821	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1153112	15.486	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0011-025.0-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-15
File ID: 215GU021.D
Sampled: 07/21/21 14:45
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 17:03
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	8.1		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	5.8		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	107	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	50	100	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	968444	9.862	1101889	9.851	
1,4-Difluorobenzene	2355485	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0011-025.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-15	File ID:	215GU021.D
Sampled:	07/21/21 14:45	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 17:03
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1470716	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1114514	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-010.8-20210721

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-16 File ID: 215GU022.D

Sampled: 07/21/21 15:45 Prepared: 07/26/21 09:21 Analyzed: 07/26/21 17:31

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G26016 Sequence: AA67497 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	11		0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	76		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	7.3		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	51	103	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	965323	9.862	1101889	9.851	
1,4-Difluorobenzene	2378895	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0009-010.8-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-16	File ID:	215GU022.D
Sampled:	07/21/21 15:45	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 17:31
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1458997	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1119576	15.497	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-17
File ID: 215GU023.D
Sampled: 07/21/21 16:15
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 17:59
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	5.7		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	1.1	J	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	109	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	969770	9.862	1101889	9.851	
1,4-Difluorobenzene	2391287	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0034-015.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-17	File ID:	215GU023.D
Sampled:	07/21/21 16:15	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 17:59
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1472112	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1117088	15.497	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210721

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-18
File ID: 215GU024.D
Sampled: 07/21/21 16:45
Prepared: 07/26/21 09:21
Analyzed: 07/26/21 18:27
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G26016
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	7.9		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	107	53 - 146	
Toluene-d8	50.0	51	103	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	949063	9.863	1101889	9.851	
1,4-Difluorobenzene	2337063	10.456	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0035-035.0-20210721

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-18	File ID:	215GU024.D
Sampled:	07/21/21 16:45	Prepared:	07/26/21 09:21	Analyzed:	07/26/21 18:27
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1466475	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1117679	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0016-010.0-20210722

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-19RE1 File ID: 215GV010.D

Sampled: 07/22/21 09:10 Prepared: 07/27/21 09:06 Analyzed: 07/27/21 11:54

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G27016 Sequence: AA67520 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.91	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	6.3		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	104	53 - 146	
Toluene-d8	50.0	51	101	41 - 146	
4-Bromofluorobenzene	50.0	51	102	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	982461	9.856	1101889	9.851	
1,4-Difluorobenzene	2432872	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0016-010.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-19RE1	File ID:	215GV010.D
Sampled:	07/22/21 09:10	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 11:54
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1476258	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1113894	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0029-015.0-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-20
File ID: 215GV011.D
Sampled: 07/22/21 10:00
Prepared: 07/27/21 09:06
Analyzed: 07/27/21 12:22
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27016
Sequence: AA67520
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.96	J	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	16		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	5.6		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	997993	9.857	1101889	9.851	
1,4-Difluorobenzene	2352240	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0029-015.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-20	File ID:	215GV011.D
Sampled:	07/22/21 10:00	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 12:22
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1479895	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1113688	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210722

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-21 File ID: 215GV012.D

Sampled: 07/22/21 10:35 Prepared: 07/27/21 09:06 Analyzed: 07/27/21 12:50

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G27016 Sequence: AA67520 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	2.2	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	3.4		0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	35		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	15		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	103	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	49	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	981758	9.857	1101889	9.851	
1,4-Difluorobenzene	2345798	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0030-025.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-21	File ID:	215GV012.D
Sampled:	07/22/21 10:35	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 12:50
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1476676	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1102173	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-22
File ID: 215GV013.D
Sampled: 07/22/21 11:30
Prepared: 07/27/21 09:06
Analyzed: 07/27/21 13:19
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27016
Sequence: AA67520
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	10	7.4	UD	7.4	25
74-87-3	Chloromethane	10	8.2	UD	8.2	25
75-01-4	Vinyl chloride	10	22	JD	7.1	25
74-83-9	Bromomethane	10	9.5	UD	9.5	25
75-00-3	Chloroethane	10	9.8	UD	9.8	25
75-69-4	Trichlorofluoromethane	10	9.4	UD	9.4	25
76-13-1	Freon 113	10	7.3	UD	7.3	25
75-35-4	1,1-Dichloroethene	10	9.4	UD	9.4	25
156-60-5	trans-1,2-Dichloroethene	10	7.3	UD	7.3	25
156-59-2	cis-1,2-Dichloroethene	10	570	D	5.3	25
75-34-3	1,1-Dichloroethane	10	6.2	UD	6.2	25
67-66-3	Chloroform	10	8.0	UD	8.0	25
71-55-6	1,1,1-Trichloroethane	10	8.0	UD	8.0	25
56-23-5	Carbon Tetrachloride	10	9.4	UD	9.4	25
107-06-2	1,2-Dichloroethane	10	6.3	UD	6.3	25
79-01-6	Trichloroethene	10	310	D	8.9	25
78-87-5	1,2-Dichloropropane	10	8.0	UD	8.0	25
75-27-4	Bromodichloromethane	10	5.2	UD	5.2	25
10061-01-5	cis-1,3-Dichloropropene	10	5.9	UD	5.9	25
10061-02-6	trans-1,3-Dichloropropene	10	7.3	UD	7.3	25
79-00-5	1,1,2-Trichloroethane	10	7.6	UD	7.6	25
127-18-4	Tetrachloroethene	10	7.6	UD	7.6	25
124-48-1	Dibromochloromethane	10	5.0	UD	5.0	25
106-93-4	1,2-Dibromoethane	10	7.8	UD	7.8	25
108-90-7	Chlorobenzene	10	7.2	UD	7.2	25
75-25-2	Bromoform	10	7.5	UD	7.5	25
79-34-5	1,1,2,2-Tetrachloroethane	10	5.4	UD	5.4	25
120-82-1	1,2,4-Trichlorobenzene	10	7.0	UD	7.0	25
541-73-1	1,3-Dichlorobenzene	10	7.7	UD	7.7	25
106-46-7	1,4-Dichlorobenzene	10	7.6	UD	7.6	25
95-50-1	1,2-Dichlorobenzene	10	7.3	UD	7.3	25
96-12-8	1,2-Dibromo-3-chloropropane	10	9.6	UD	9.6	25

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	54	108	53 - 146	
Toluene-d8	50.0	53	107	41 - 146	
4-Bromofluorobenzene	50.0	50	100	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	950478	9.857	1101889	9.851	
1,4-Difluorobenzene	2306620	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0031-035.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-22	File ID:	215GV013.D
Sampled:	07/22/21 11:30	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 13:19
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1478763	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1134717	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-23
File ID: 215GV014.D
Sampled: 07/22/21 12:15
Prepared: 07/27/21 09:06
Analyzed: 07/27/21 13:47
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27016
Sequence: AA67520
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
156-59-2	cis-1,2-Dichloroethene	100	4900	D	53	250

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	998529	9.862	1101889	9.851	
1,4-Difluorobenzene	2331984	10.45	2525815	10.444	
Chlorobenzene-d5	1476470	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1135730	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210722

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-23RE1 File ID: 215GW014.D

Sampled: 07/22/21 12:15 Prepared: 07/28/21 08:53 Analyzed: 07/28/21 13:33

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G28012 Sequence: AA67540 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	50	37	UD	37	120
74-87-3	Chloromethane	50	41	UD	41	120
75-01-4	Vinyl chloride	50	260	D	36	120
74-83-9	Bromomethane	50	48	UD	48	120
75-00-3	Chloroethane	50	49	UD	49	120
75-69-4	Trichlorofluoromethane	50	47	UD	47	120
76-13-1	Freon 113	50	36	UD	36	120
75-35-4	1,1-Dichloroethene	50	47	UD	47	120
156-60-5	trans-1,2-Dichloroethene	50	36	UD	36	120
75-34-3	1,1-Dichloroethane	50	31	UD	31	120
67-66-3	Chloroform	50	40	UD	40	120
71-55-6	1,1,1-Trichloroethane	50	40	UD	40	120
56-23-5	Carbon Tetrachloride	50	47	UD	47	120
107-06-2	1,2-Dichloroethane	50	32	UD	32	120
79-01-6	Trichloroethene	50	3600	D	44	120
78-87-5	1,2-Dichloropropane	50	40	UD	40	120
75-27-4	Bromodichloromethane	50	26	UD	26	120
10061-01-5	cis-1,3-Dichloropropene	50	30	UD	30	120
10061-02-6	trans-1,3-Dichloropropene	50	36	UD	36	120
79-00-5	1,1,2-Trichloroethane	50	38	UD	38	120
127-18-4	Tetrachloroethene	50	38	UD	38	120
124-48-1	Dibromochloromethane	50	25	UD	25	120
106-93-4	1,2-Dibromoethane	50	39	UD	39	120
108-90-7	Chlorobenzene	50	36	UD	36	120
75-25-2	Bromoform	50	38	UD	38	120
79-34-5	1,1,2,2-Tetrachloroethane	50	27	UD	27	120
120-82-1	1,2,4-Trichlorobenzene	50	35	UD	35	120
541-73-1	1,3-Dichlorobenzene	50	38	UD	38	120
106-46-7	1,4-Dichlorobenzene	50	38	UD	38	120
95-50-1	1,2-Dichlorobenzene	50	36	UD	36	120
96-12-8	1,2-Dibromo-3-chloropropane	50	48	UD	48	120

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	105	53 - 146	
Toluene-d8	50.0	52	105	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	963403	9.857	1101889	9.851	
1,4-Difluorobenzene	2267640	10.45	2525815	10.444	
Chlorobenzene-d5	1448145	13.229	1610233	13.223	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0032-042.5-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-23RE1	File ID:	215GW014.D
Sampled:	07/22/21 12:15	Prepared:	07/28/21 08:53	Analyzed:	07/28/21 13:33
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G28012	Sequence:	AA67540	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	1108052	15.485	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0033-047.5-20210722

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-24 File ID: 215GV015.D

Sampled: 07/22/21 12:40 Prepared: 07/27/21 09:06 Analyzed: 07/27/21 14:15

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G27016 Sequence: AA67520 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	200	150	UD	150	500
74-87-3	Chloromethane	200	160	UD	160	500
75-01-4	Vinyl chloride	200	890	D	140	500
74-83-9	Bromomethane	200	190	UD	190	500
75-00-3	Chloroethane	200	200	UD	200	500
75-69-4	Trichlorofluoromethane	200	190	UD	190	500
76-13-1	Freon 113	200	150	UD	150	500
75-35-4	1,1-Dichloroethene	200	190	UD	190	500
156-60-5	trans-1,2-Dichloroethene	200	150	UD	150	500
156-59-2	cis-1,2-Dichloroethene	200	15000	D	110	500
75-34-3	1,1-Dichloroethane	200	120	UD	120	500
67-66-3	Chloroform	200	160	UD	160	500
71-55-6	1,1,1-Trichloroethane	200	160	UD	160	500
56-23-5	Carbon Tetrachloride	200	190	UD	190	500
107-06-2	1,2-Dichloroethane	200	130	UD	130	500
79-01-6	Trichloroethene	200	11000	D	180	500
78-87-5	1,2-Dichloropropane	200	160	UD	160	500
75-27-4	Bromodichloromethane	200	100	UD	100	500
10061-01-5	cis-1,3-Dichloropropene	200	120	UD	120	500
10061-02-6	trans-1,3-Dichloropropene	200	150	UD	150	500
79-00-5	1,1,2-Trichloroethane	200	150	UD	150	500
127-18-4	Tetrachloroethene	200	150	UD	150	500
124-48-1	Dibromochloromethane	200	100	UD	100	500
106-93-4	1,2-Dibromoethane	200	160	UD	160	500
108-90-7	Chlorobenzene	200	140	UD	140	500
75-25-2	Bromoform	200	150	UD	150	500
79-34-5	1,1,2,2-Tetrachloroethane	200	110	UD	110	500
120-82-1	1,2,4-Trichlorobenzene	200	140	UD	140	500
541-73-1	1,3-Dichlorobenzene	200	150	UD	150	500
106-46-7	1,4-Dichlorobenzene	200	150	UD	150	500
95-50-1	1,2-Dichlorobenzene	200	150	UD	150	500
96-12-8	1,2-Dibromo-3-chloropropane	200	190	UD	190	500

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	103	53 - 146	
Toluene-d8	50.0	53	107	41 - 146	
4-Bromofluorobenzene	50.0	51	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	961116	9.857	1101889	9.851	
1,4-Difluorobenzene	2253705	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0033-047.5-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-24	File ID:	215GV015.D
Sampled:	07/22/21 12:40	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 14:15
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1448868	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1129347	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0008-025.0-20210722

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Matrix: Ground Water Laboratory ID: AE05878-25 File ID: 215GV016.D

Sampled: 07/22/21 13:15 Prepared: 07/27/21 09:06 Analyzed: 07/27/21 14:43

Solids: Preparation: EPA 5030B_MS Initial/Final: 5 mL / 5 mL

Batch: 1G27016 Sequence: AA67520 Calibration: 2106098 Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	1.2	J	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	1.6	J	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	18		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	3.6		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	52	103	53 - 146	
Toluene-d8	50.0	51	103	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	962990	9.863	1101889	9.851	
1,4-Difluorobenzene	2341975	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0008-025.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-25	File ID:	215GV016.D
Sampled:	07/22/21 13:15	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 14:43
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1442939	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1103190	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0024-060.0-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-26
File ID: 215GV017.D
Sampled: 07/22/21 14:05
Prepared: 07/27/21 09:06
Analyzed: 07/27/21 15:11
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27016
Sequence: AA67520
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	0.53	U	0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	0.89	U	0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	103	53 - 146	
Toluene-d8	50.0	52	103	41 - 146	
4-Bromofluorobenzene	50.0	49	98	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	977353	9.857	1101889	9.851	
1,4-Difluorobenzene	2348600	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0024-060.0-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-26
File ID: 215GV017.D
Sampled: 07/22/21 14:05
Prepared: 07/27/21 09:06
Analyzed: 07/27/21 15:11
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27016
Sequence: AA67520
Calibration: 2106098
Instrument: OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1465304	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1112194	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-27RE1
File ID: 215GW015.D
Sampled: 07/22/21 14:35
Prepared: 07/28/21 08:53
Analyzed: 07/28/21 14:01
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G28012
Sequence: AA67540
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	5	3.7	UD	3.7	12
74-87-3	Chloromethane	5	4.1	UD	4.1	12
75-01-4	Vinyl chloride	5	3.6	UD	3.6	12
74-83-9	Bromomethane	5	4.8	UD	4.8	12
75-00-3	Chloroethane	5	4.9	UD	4.9	12
75-69-4	Trichlorofluoromethane	5	4.7	UD	4.7	12
76-13-1	Freon 113	5	470	D	3.6	12
75-35-4	1,1-Dichloroethene	5	4.7	UD	4.7	12
156-60-5	trans-1,2-Dichloroethene	5	3.6	UD	3.6	12
156-59-2	cis-1,2-Dichloroethene	5	51	D	2.6	12
75-34-3	1,1-Dichloroethane	5	3.1	UD	3.1	12
67-66-3	Chloroform	5	4.0	UD	4.0	12
71-55-6	1,1,1-Trichloroethane	5	4.0	UD	4.0	12
56-23-5	Carbon Tetrachloride	5	4.7	UD	4.7	12
107-06-2	1,2-Dichloroethane	5	3.2	UD	3.2	12
79-01-6	Trichloroethene	5	120	D	4.4	12
78-87-5	1,2-Dichloropropane	5	4.0	UD	4.0	12
75-27-4	Bromodichloromethane	5	2.6	UD	2.6	12
10061-01-5	cis-1,3-Dichloropropene	5	3.0	UD	3.0	12
10061-02-6	trans-1,3-Dichloropropene	5	3.6	UD	3.6	12
79-00-5	1,1,2-Trichloroethane	5	3.8	UD	3.8	12
127-18-4	Tetrachloroethene	5	3.8	UD	3.8	12
124-48-1	Dibromochloromethane	5	2.5	UD	2.5	12
106-93-4	1,2-Dibromoethane	5	3.9	UD	3.9	12
108-90-7	Chlorobenzene	5	3.6	UD	3.6	12
75-25-2	Bromoform	5	3.8	UD	3.8	12
79-34-5	1,1,2,2-Tetrachloroethane	5	2.7	UD	2.7	12
120-82-1	1,2,4-Trichlorobenzene	5	3.5	UD	3.5	12
541-73-1	1,3-Dichlorobenzene	5	3.8	UD	3.8	12
106-46-7	1,4-Dichlorobenzene	5	3.8	UD	3.8	12
95-50-1	1,2-Dichlorobenzene	5	3.6	UD	3.6	12
96-12-8	1,2-Dibromo-3-chloropropane	5	4.8	UD	4.8	12

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	51	102	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	965575	9.857	1101889	9.851	
1,4-Difluorobenzene	2323932	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0002-035.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-27RE1	File ID:	215GW015.D
Sampled:	07/22/21 14:35	Prepared:	07/28/21 08:53	Analyzed:	07/28/21 14:01
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G28012	Sequence:	AA67540	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1457980	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1115863	15.491	1271242	15.485	

* Values outside of QC limits

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0004-010.0-20210722

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Matrix: Ground Water
Laboratory ID: AE05878-28
File ID: 215GV019.D
Sampled: 07/22/21 15:00
Prepared: 07/27/21 09:06
Analyzed: 07/27/21 16:07
Solids:
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Batch: 1G27016
Sequence: AA67520
Calibration: 2106098
Instrument: OVGCMS5

CAS NO.	COMPOUND	DILUTION	CONC. (ug/L)	Q	MDL	MRL
75-71-8	Dichlorodifluoromethane	1	0.74	U	0.74	2.5
74-87-3	Chloromethane	1	0.82	U	0.82	2.5
75-01-4	Vinyl chloride	1	0.71	U	0.71	2.5
74-83-9	Bromomethane	1	0.95	U	0.95	2.5
75-00-3	Chloroethane	1	0.98	U	0.98	2.5
75-69-4	Trichlorofluoromethane	1	0.94	U	0.94	2.5
76-13-1	Freon 113	1	0.73	U	0.73	2.5
75-35-4	1,1-Dichloroethene	1	0.94	U	0.94	2.5
156-60-5	trans-1,2-Dichloroethene	1	0.73	U	0.73	2.5
156-59-2	cis-1,2-Dichloroethene	1	3.6		0.53	2.5
75-34-3	1,1-Dichloroethane	1	0.62	U	0.62	2.5
67-66-3	Chloroform	1	0.80	U	0.80	2.5
71-55-6	1,1,1-Trichloroethane	1	0.80	U	0.80	2.5
56-23-5	Carbon Tetrachloride	1	0.94	U	0.94	2.5
107-06-2	1,2-Dichloroethane	1	0.63	U	0.63	2.5
79-01-6	Trichloroethene	1	12		0.89	2.5
78-87-5	1,2-Dichloropropane	1	0.80	U	0.80	2.5
75-27-4	Bromodichloromethane	1	0.52	U	0.52	2.5
10061-01-5	cis-1,3-Dichloropropene	1	0.59	U	0.59	2.5
10061-02-6	trans-1,3-Dichloropropene	1	0.73	U	0.73	2.5
79-00-5	1,1,2-Trichloroethane	1	0.76	U	0.76	2.5
127-18-4	Tetrachloroethene	1	0.76	U	0.76	2.5
124-48-1	Dibromochloromethane	1	0.50	U	0.50	2.5
106-93-4	1,2-Dibromoethane	1	0.78	U	0.78	2.5
108-90-7	Chlorobenzene	1	0.72	U	0.72	2.5
75-25-2	Bromoform	1	0.75	U	0.75	2.5
79-34-5	1,1,2,2-Tetrachloroethane	1	0.54	U	0.54	2.5
120-82-1	1,2,4-Trichlorobenzene	1	0.70	U	0.70	2.5
541-73-1	1,3-Dichlorobenzene	1	0.77	U	0.77	2.5
106-46-7	1,4-Dichlorobenzene	1	0.76	U	0.76	2.5
95-50-1	1,2-Dichlorobenzene	1	0.73	U	0.73	2.5
96-12-8	1,2-Dibromo-3-chloropropane	1	0.96	U	0.96	2.5

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	105	53 - 146	
Toluene-d8	50.0	52	104	41 - 146	
4-Bromofluorobenzene	50.0	50	101	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	954047	9.856	1101889	9.851	
1,4-Difluorobenzene	2316991	10.45	2525815	10.444	

ORGANIC ANALYSIS DATA SHEET

EPA 8260D

HMPN-MW0004-010.0-20210722

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Ground Water	Laboratory ID:	AE05878-28	File ID:	215GV019.D
Sampled:	07/22/21 15:00	Prepared:	07/27/21 09:06	Analyzed:	07/27/21 16:07
Solids:		Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098	Instrument:	OVGCMS5

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Chlorobenzene-d5	1444997	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1086029	15.491	1271242	15.485	

* Values outside of QC limits

HOLDING TIME SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-MW0037-010.0-20210720	07/20/21 10:15	07/22/21 15:15	07/26/21 09:21	5.96	NA	07/26/21 10:58	6.00	14.00	
HMPN-MW0038-020.0-20210720	07/20/21 10:50	07/22/21 15:15	07/26/21 09:21	5.94	NA	07/26/21 10:30	6.00	14.00	
HMPN-MW0046-015.0-20210720	07/20/21 11:20	07/22/21 15:15	07/26/21 09:21	5.92	NA	07/26/21 11:26	6.00	14.00	
HMPN-MW0047-025.0-20210720	07/20/21 11:50	07/22/21 15:15	07/27/21 09:06	6.89	NA	07/27/21 10:58	7.00	14.00	
HMPN-MW0039-035.0-20210720	07/20/21 12:25	07/22/21 15:15	07/26/21 09:21	5.87	NA	07/26/21 12:22	6.00	14.00	
HMPN-MW0040-042.5-20210720	07/20/21 12:55	07/22/21 15:15	07/26/21 09:21	5.85	NA	07/26/21 12:50	6.00	14.00	
HMPN-MW0027-042.5-20210720	07/20/21 14:10	07/22/21 15:15	07/26/21 09:21	5.80	NA	07/26/21 13:18	6.00	14.00	
HMPN-MW0028-047.5-20210720	07/20/21 14:50	07/22/21 15:15	07/26/21 09:21	5.77	NA	07/26/21 13:46	6.00	14.00	
HMPN-MW0045-030.0-20210721	07/21/21 08:55	07/22/21 15:15	07/26/21 09:21	5.02	NA	07/26/21 14:14	5.00	14.00	
HMPN-MW0036-015.0-20210721	07/21/21 10:10	07/22/21 15:15	07/26/21 09:21	4.97	NA	07/26/21 14:42	5.00	14.00	
HMPN-MW0041-035.0-20210721	07/21/21 11:25	07/22/21 15:15	07/26/21 09:21	4.91	NA	07/26/21 15:10	5.00	14.00	
HMPN-MW0042-042.5-20210721	07/21/21 12:50	07/22/21 15:15	07/26/21 09:21	4.85	NA	07/26/21 15:38	5.00	14.00	
HMPN-MW0042-042.5-20210721	07/21/21 12:50	07/22/21 15:15	07/27/21 08:51	5.83	NA	07/27/21 16:18	6.00	14.00	
HMPN-MW0043-035.0-20210721	07/21/21 13:25	07/22/21 15:15	07/26/21 09:21	4.83	NA	07/26/21 16:07	5.00	14.00	
HMPN-MW0044-042.5-20210721	07/21/21 14:15	07/22/21 15:15	07/27/21 09:06	5.79	NA	07/27/21 11:26	6.00	14.00	
HMPN-MW0011-025.0-20210721	07/21/21 14:45	07/22/21 15:15	07/26/21 09:21	4.78	NA	07/26/21 17:03	5.00	14.00	
HMPN-MW0009-010.8-20210721	07/21/21 15:45	07/22/21 15:15	07/26/21 09:21	4.73	NA	07/26/21 17:31	5.00	14.00	
HMPN-MW0034-015.0-20210721	07/21/21 16:15	07/22/21 15:15	07/26/21 09:21	4.71	NA	07/26/21 17:59	5.00	14.00	
HMPN-MW0035-035.0-20210721	07/21/21 16:45	07/22/21 15:15	07/26/21 09:21	4.69	NA	07/26/21 18:27	5.00	14.00	
HMPN-MW0016-010.0-20210722	07/22/21 09:10	07/22/21 15:15	07/27/21 09:06	5.00	NA	07/27/21 11:54	5.00	14.00	
HMPN-MW0029-015.0-20210722	07/22/21 10:00	07/22/21 15:15	07/27/21 09:06	4.96	NA	07/27/21 12:22	5.00	14.00	
HMPN-MW0030-025.0-20210722	07/22/21 10:35	07/22/21 15:15	07/27/21 09:06	4.94	NA	07/27/21 12:50	5.00	14.00	
HMPN-MW0031-035.0-20210722	07/22/21 11:30	07/22/21 15:15	07/27/21 09:06	4.90	NA	07/27/21 13:19	5.00	14.00	

HOLDING TIME SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
HMPN-MW0032-042.5-20210722	07/22/21 12:15	07/22/21 15:15	07/27/21 09:06	4.87	NA	07/27/21 13:47	5.00	14.00	
HMPN-MW0032-042.5-20210722	07/22/21 12:15	07/22/21 15:15	07/28/21 08:53	5.86	NA	07/28/21 13:33	6.00	14.00	
HMPN-MW0033-047.5-20210722	07/22/21 12:40	07/22/21 15:15	07/27/21 09:06	4.85	NA	07/27/21 14:15	5.00	14.00	
HMPN-MW0008-025.0-20210722	07/22/21 13:15	07/22/21 15:15	07/27/21 09:06	4.83	NA	07/27/21 14:43	5.00	14.00	
HMPN-MW0024-060.0-20210722	07/22/21 14:05	07/22/21 15:15	07/27/21 09:06	4.79	NA	07/27/21 15:11	5.00	14.00	
HMPN-MW0002-035.0-20210722	07/22/21 14:35	07/22/21 15:15	07/28/21 08:53	5.76	NA	07/28/21 14:01	6.00	14.00	
HMPN-MW0004-010.0-20210722	07/22/21 15:00	07/22/21 15:15	07/27/21 09:06	4.75	NA	07/27/21 16:07	5.00	14.00	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Batch: 1G26016 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1G26016-BLK1	215GU006.D	07/26/21 00:00	
LCS	1G26016-BS1	215GU004.D	07/26/21 00:00	
HMPN-MW0038-020.0-20210720	1G26016-MS1	215GU026.D	07/26/21 00:00	
HMPN-MW0038-020.0-20210720	1G26016-MSD1	215GU027.D	07/26/21 00:00	
HMPN-MW0037-010.0-20210720	AE05878-01	215GU008.D	07/26/21 09:21	
HMPN-MW0038-020.0-20210720	AE05878-02	215GU007.D	07/26/21 09:21	
HMPN-MW0046-015.0-20210720	AE05878-03	215GU009.D	07/26/21 09:21	
HMPN-MW0039-035.0-20210720	AE05878-05	215GU011.D	07/26/21 09:21	
HMPN-MW0040-042.5-20210720	AE05878-06	215GU012.D	07/26/21 09:21	
HMPN-MW0027-042.5-20210720	AE05878-07	215GU013.D	07/26/21 09:21	
HMPN-MW0028-047.5-20210720	AE05878-08	215GU014.D	07/26/21 09:21	
HMPN-MW0045-030.0-20210721	AE05878-09	215GU015.D	07/26/21 09:21	
HMPN-MW0036-015.0-20210721	AE05878-10	215GU016.D	07/26/21 09:21	
HMPN-MW0041-035.0-20210721	AE05878-11	215GU017.D	07/26/21 09:21	
HMPN-MW0042-042.5-20210721	AE05878-12	215GU018.D	07/26/21 09:21	
HMPN-MW0043-035.0-20210721	AE05878-13	215GU019.D	07/26/21 09:21	
HMPN-MW0011-025.0-20210721	AE05878-15	215GU021.D	07/26/21 09:21	
HMPN-MW0009-010.8-20210721	AE05878-16	215GU022.D	07/26/21 09:21	
HMPN-MW0034-015.0-20210721	AE05878-17	215GU023.D	07/26/21 09:21	
HMPN-MW0035-035.0-20210721	AE05878-18	215GU024.D	07/26/21 09:21	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Batch: 1G27015 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1G27015-BLK1	212GV005.D	07/27/21 00:00	
LCS	1G27015-BS1	212GV003.D	07/27/21 00:00	
ARS21-9635 Punta Gorda Corp. Roll-off	1G27015-MS1	212GV011.D	07/27/21 00:00	
ARS21-9635 Punta Gorda Corp. Roll-off	1G27015-MSD1	212GV012.D	07/27/21 00:00	
HMPN-MW0042-042.5-20210721	AE05878-12RE1	212GV020.D	07/27/21 08:51	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando SDG: AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) Project: NASA KSC HMFN

Batch: 1G27016 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1G27016-BLK1	215GV005.D	07/27/21 00:00	
LCS	1G27016-BS1	215GV003.D	07/27/21 00:00	
CRCA-ASINFLUENT-20210723	1G27016-MS1	215GV024.D	07/27/21 00:00	
CRCA-ASINFLUENT-20210723	1G27016-MSD1	215GV025.D	07/27/21 00:00	
HMPN-MW0047-025.0-20210720	AE05878-04RE1	215GV008.D	07/27/21 09:06	
HMPN-MW0044-042.5-20210721	AE05878-14RE1	215GV009.D	07/27/21 09:06	
HMPN-MW0016-010.0-20210722	AE05878-19RE1	215GV010.D	07/27/21 09:06	
HMPN-MW0029-015.0-20210722	AE05878-20	215GV011.D	07/27/21 09:06	
HMPN-MW0030-025.0-20210722	AE05878-21	215GV012.D	07/27/21 09:06	
HMPN-MW0031-035.0-20210722	AE05878-22	215GV013.D	07/27/21 09:06	
HMPN-MW0032-042.5-20210722	AE05878-23	215GV014.D	07/27/21 09:06	
HMPN-MW0033-047.5-20210722	AE05878-24	215GV015.D	07/27/21 09:06	
HMPN-MW0008-025.0-20210722	AE05878-25	215GV016.D	07/27/21 09:06	
HMPN-MW0024-060.0-20210722	AE05878-26	215GV017.D	07/27/21 09:06	
HMPN-MW0004-010.0-20210722	AE05878-28	215GV019.D	07/27/21 09:06	

PREPARATION BATCH SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Batch: 1G28012 Batch Matrix: Water Preparation: EPA 5030B_MS

SAMPLE NAME	LAB SAMPLE ID	LAB FILE ID	DATE PREPARED	OBSERVATIONS
Blank	1G28012-BLK1	215GW006.D	07/28/21 00:00	
LCS	1G28012-BS1	215GW004.D	07/28/21 00:00	
CRCA-MW0002-032.5-20210726	1G28012-MS1	215GW026.D	07/28/21 00:00	
HMPN-MW0032-042.5-20210722	AE05878-23RE1	215GW014.D	07/28/21 08:53	
HMPN-MW0002-035.0-20210722	AE05878-27RE1	215GW015.D	07/28/21 08:53	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G26016-BLK1	File ID:	215GU006.D
Prepared:	07/26/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/26/21 10:02	Instrument:	OVGCMS5		
Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
75-35-4	1,1-Dichloroethene	0.94	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
75-25-2	Bromoform	0.75	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G26016-BLK1	File ID:	215GU006.D
Prepared:	07/26/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/26/21 10:02	Instrument:	OVGCMS5		
Batch:	1G26016	Sequence:	AA67497	Calibration:	2106098

CAS NO.	COMPOUND	CONC. (ug/L)	Q
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	51	102	53 - 146	
Toluene-d8	50.0	50	101	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1140364	9.863	1101889	9.851	
1,4-Difluorobenzene	2663598	10.456	2525815	10.444	
Chlorobenzene-d5	1654230	13.235	1610233	13.223	
1,4-Dichlorobenzene-d4	1265398	15.491	1271242	15.485	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G27015-BLK1	File ID:	212GV005.D
Prepared:	07/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/27/21 09:07	Instrument:	OVGCMS2		
Batch:	1G27015	Sequence:	AA67513	Calibration:	2107025

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
75-35-4	1,1-Dichloroethene	0.94	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
75-25-2	Bromoform	0.75	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G27015-BLK1	File ID:	212GV005.D
Prepared:	07/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/27/21 09:07	Instrument:	OVGCMS2		
Batch:	1G27015	Sequence:	AA67513	Calibration:	2107025

CAS NO.	COMPOUND	CONC. (ug/L)	Q
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	57	115	53 - 146	
Toluene-d8	50.0	50	101	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	176714	11.48	193062	11.49	
1,4-Difluorobenzene	327495	12.03	330090	12.04	
Chlorobenzene-d5	162085	14.62	152465	14.63	
1,4-Dichlorobenzene-d4	137408	16.99	126714	17	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G27016-BLK1	File ID:	215GV005.D
Prepared:	07/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/27/21 09:34	Instrument:	OVGCMS5		
Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
75-35-4	1,1-Dichloroethene	0.94	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
75-25-2	Bromoform	0.75	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G27016-BLK1	File ID:	215GV005.D
Prepared:	07/27/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/27/21 09:34	Instrument:	OVGCMS5		
Batch:	1G27016	Sequence:	AA67520	Calibration:	2106098

CAS NO.	COMPOUND	CONC. (ug/L)	Q
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	53	106	53 - 146	
Toluene-d8	50.0	51	101	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1024672	9.857	1101889	9.851	
1,4-Difluorobenzene	2497844	10.45	2525815	10.444	
Chlorobenzene-d5	1573333	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1175358	15.491	1271242	15.485	

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G28012-BLK1	File ID:	215GW006.D
Prepared:	07/28/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/28/21 09:48	Instrument:	OVGCMS5		
Batch:	1G28012	Sequence:	AA67540	Calibration:	2106098

CAS NO.	COMPOUND	CONC. (ug/L)	Q
75-71-8	Dichlorodifluoromethane	0.74	U
74-87-3	Chloromethane	0.82	U
75-01-4	Vinyl chloride	0.71	U
74-83-9	Bromomethane	0.95	U
75-00-3	Chloroethane	0.98	U
75-69-4	Trichlorofluoromethane	0.94	U
76-13-1	Freon 113	0.73	U
75-35-4	1,1-Dichloroethene	0.94	U
156-60-5	trans-1,2-Dichloroethene	0.73	U
156-59-2	cis-1,2-Dichloroethene	0.53	U
75-34-3	1,1-Dichloroethane	0.62	U
67-66-3	Chloroform	0.80	U
71-55-6	1,1,1-Trichloroethane	0.80	U
56-23-5	Carbon Tetrachloride	0.94	U
107-06-2	1,2-Dichloroethane	0.63	U
79-01-6	Trichloroethene	0.89	U
78-87-5	1,2-Dichloropropane	0.80	U
75-27-4	Bromodichloromethane	0.52	U
10061-01-5	cis-1,3-Dichloropropene	0.59	U
10061-02-6	trans-1,3-Dichloropropene	0.73	U
79-00-5	1,1,2-Trichloroethane	0.76	U
127-18-4	Tetrachloroethene	0.76	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.78	U
108-90-7	Chlorobenzene	0.72	U
75-25-2	Bromoform	0.75	U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	U
120-82-1	1,2,4-Trichlorobenzene	0.70	U
541-73-1	1,3-Dichlorobenzene	0.77	U
106-46-7	1,4-Dichlorobenzene	0.76	U

METHOD BLANK DATA SHEET
EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN

Matrix:	Water	Laboratory ID:	1G28012-BLK1	File ID:	215GW006.D
Prepared:	07/28/21 00:00	Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL
Analyzed:	07/28/21 09:48	Instrument:	OVGCMS5		
Batch:	1G28012	Sequence:	AA67540	Calibration:	2106098

CAS NO.	COMPOUND	CONC. (ug/L)	Q
95-50-1	1,2-Dichlorobenzene	0.73	U
96-12-8	1,2-Dibromo-3-chloropropane	0.96	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Dibromofluoromethane	50.0	49	99	53 - 146	
Toluene-d8	50.0	51	103	41 - 146	
4-Bromofluorobenzene	50.0	50	99	41 - 142	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Pentafluorobenzene	1058005	9.857	1101889	9.851	
1,4-Difluorobenzene	2459389	10.45	2525815	10.444	
Chlorobenzene-d5	1530623	13.229	1610233	13.223	
1,4-Dichlorobenzene-d4	1152122	15.485	1271242	15.485	

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G26016	Laboratory ID:	1G26016-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	3.3	17	10 - 180
Chloromethane	20.0	9.5	48	33 - 154
Vinyl chloride	20.0	13	63	20 - 167
Bromomethane	20.0	8.0	40	10 - 173
Chloroethane	20.0	16	78	27 - 180
Trichlorofluoromethane	20.0	18	88	56 - 155
Freon 113	20.0	20	100	47 - 173
1,1-Dichloroethene	20.0	21	107	47 - 139
trans-1,2-Dichloroethene	20.0	22	108	54 - 134
cis-1,2-Dichloroethene	20.0	22	108	56 - 128
1,1-Dichloroethane	20.0	22	108	57 - 142
Chloroform	20.0	21	103	58 - 139
1,1,1-Trichloroethane	20.0	22	109	57 - 148
Carbon Tetrachloride	20.0	20	102	54 - 156
1,2-Dichloroethane	20.0	19	97	50 - 156
Trichloroethene	20.0	21	104	62 - 135
1,2-Dichloropropane	20.0	21	105	61 - 133
Bromodichloromethane	20.0	21	106	58 - 135
cis-1,3-Dichloropropene	20.0	20	101	64 - 128
trans-1,3-Dichloropropene	20.0	23	117	65 - 149
1,1,2-Trichloroethane	20.0	21	104	57 - 141
Tetrachloroethene	20.0	22	108	60 - 147
Dibromochloromethane	20.0	20	98	50 - 140
1,2-Dibromoethane	20.0	21	103	57 - 140
Chlorobenzene	20.0	21	107	51 - 139
Bromoform	20.0	20	100	46 - 148
1,1,2,2-Tetrachloroethane	20.0	22	108	60 - 139
1,2,4-Trichlorobenzene	20.0	28	139	52 - 159
1,3-Dichlorobenzene	20.0	22	110	66 - 129
1,4-Dichlorobenzene	20.0	21	106	65 - 133

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G26016	Laboratory ID:	1G26016-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	20.0	20	102	63 - 131
1,2-Dibromo-3-chloropropane	20.0	27	134	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G27015	Laboratory ID:	1G27015-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	24	122	10 - 180
Chloromethane	20.0	21	104	33 - 154
Vinyl chloride	20.0	22	109	20 - 167
Bromomethane	20.0	11	55	10 - 173
Chloroethane	20.0	26	128	27 - 180
Trichlorofluoromethane	20.0	22	108	56 - 155
Freon 113	20.0	25	124	47 - 173
1,1-Dichloroethene	20.0	24	121	47 - 139
trans-1,2-Dichloroethene	20.0	23	115	54 - 134
cis-1,2-Dichloroethene	20.0	22	109	56 - 128
1,1-Dichloroethane	20.0	24	120	57 - 142
Chloroform	20.0	23	116	58 - 139
1,1,1-Trichloroethane	20.0	24	119	57 - 148
Carbon Tetrachloride	20.0	22	109	54 - 156
1,2-Dichloroethane	20.0	21	103	50 - 156
Trichloroethene	20.0	22	109	62 - 135
1,2-Dichloropropane	20.0	19	96	61 - 133
Bromodichloromethane	20.0	20	102	58 - 135
cis-1,3-Dichloropropene	20.0	19	96	64 - 128
trans-1,3-Dichloropropene	20.0	19	95	65 - 149
1,1,2-Trichloroethane	20.0	18	90	57 - 141
Tetrachloroethene	20.0	19	95	60 - 147
Dibromochloromethane	20.0	19	94	50 - 140
1,2-Dibromoethane	20.0	19	94	57 - 140
Chlorobenzene	20.0	20	101	51 - 139
Bromoform	20.0	19	93	46 - 148
1,1,2,2-Tetrachloroethane	20.0	16	82	60 - 139
1,2,4-Trichlorobenzene	20.0	20	100	52 - 159
1,3-Dichlorobenzene	20.0	19	96	66 - 129
1,4-Dichlorobenzene	20.0	19	95	65 - 133

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G27015	Laboratory ID:	1G27015-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	20.0	19	96	63 - 131
1,2-Dibromo-3-chloropropane	20.0	18	90	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G27016	Laboratory ID:	1G27016-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	28	141	10 - 180
Chloromethane	20.0	23	116	33 - 154
Vinyl chloride	20.0	23	115	20 - 167
Bromomethane	20.0	15	75	10 - 173
Chloroethane	20.0	23	113	27 - 180
Trichlorofluoromethane	20.0	21	106	56 - 155
Freon 113	20.0	20	102	47 - 173
1,1-Dichloroethene	20.0	22	109	47 - 139
trans-1,2-Dichloroethene	20.0	22	108	54 - 134
cis-1,2-Dichloroethene	20.0	23	114	56 - 128
1,1-Dichloroethane	20.0	22	111	57 - 142
Chloroform	20.0	22	108	58 - 139
1,1,1-Trichloroethane	20.0	23	113	57 - 148
Carbon Tetrachloride	20.0	19	95	54 - 156
1,2-Dichloroethane	20.0	19	97	50 - 156
Trichloroethene	20.0	20	100	62 - 135
1,2-Dichloropropane	20.0	21	103	61 - 133
Bromodichloromethane	20.0	21	104	58 - 135
cis-1,3-Dichloropropene	20.0	20	102	64 - 128
trans-1,3-Dichloropropene	20.0	23	115	65 - 149
1,1,2-Trichloroethane	20.0	21	103	57 - 141
Tetrachloroethene	20.0	21	104	60 - 147
Dibromochloromethane	20.0	19	95	50 - 140
1,2-Dibromoethane	20.0	21	103	57 - 140
Chlorobenzene	20.0	21	105	51 - 139
Bromoform	20.0	19	96	46 - 148
1,1,2,2-Tetrachloroethane	20.0	21	105	60 - 139
1,2,4-Trichlorobenzene	20.0	27	134	52 - 159
1,3-Dichlorobenzene	20.0	22	111	66 - 129
1,4-Dichlorobenzene	20.0	22	108	65 - 133

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G27016	Laboratory ID:	1G27016-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	20.0	21	105	63 - 131
1,2-Dibromo-3-chloropropane	20.0	24	118	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G28012	Laboratory ID:	1G28012-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	18	88	10 - 180
Chloromethane	20.0	20	98	33 - 154
Vinyl chloride	20.0	19	94	20 - 167
Bromomethane	20.0	14	68	10 - 173
Chloroethane	20.0	18	92	27 - 180
Trichlorofluoromethane	20.0	20	98	56 - 155
Freon 113	20.0	19	97	47 - 173
1,1-Dichloroethene	20.0	21	105	47 - 139
trans-1,2-Dichloroethene	20.0	20	102	54 - 134
cis-1,2-Dichloroethene	20.0	22	108	56 - 128
1,1-Dichloroethane	20.0	21	107	57 - 142
Chloroform	20.0	21	106	58 - 139
1,1,1-Trichloroethane	20.0	22	110	57 - 148
Carbon Tetrachloride	20.0	18	91	54 - 156
1,2-Dichloroethane	20.0	19	93	50 - 156
Trichloroethene	20.0	20	101	62 - 135
1,2-Dichloropropane	20.0	20	98	61 - 133
Bromodichloromethane	20.0	21	103	58 - 135
cis-1,3-Dichloropropene	20.0	20	98	64 - 128
trans-1,3-Dichloropropene	20.0	21	107	65 - 149
1,1,2-Trichloroethane	20.0	20	101	57 - 141
Tetrachloroethene	20.0	20	101	60 - 147
Dibromochloromethane	20.0	19	93	50 - 140
1,2-Dibromoethane	20.0	20	98	57 - 140
Chlorobenzene	20.0	20	102	51 - 139
Bromoform	20.0	18	91	46 - 148
1,1,2,2-Tetrachloroethane	20.0	20	102	60 - 139
1,2,4-Trichlorobenzene	20.0	27	133	52 - 159
1,3-Dichlorobenzene	20.0	22	108	66 - 129
1,4-Dichlorobenzene	20.0	21	105	65 - 133

LCS / LCS DUPLICATE RECOVERY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G28012	Laboratory ID:	1G28012-BS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC. #	QC LIMITS REC.
1,2-Dichlorobenzene	20.0	20	100	63 - 131
1,2-Dibromo-3-chloropropane	20.0	23	114	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0038-020.0-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G26016	Laboratory ID:	1G26016-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: HMPN-MW0038-020.0-20210720

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	3.4	17	10 - 180
Chloromethane	20.0	ND	10	52	33 - 154
Vinyl chloride	20.0	4.0	17	66	20 - 167
Bromomethane	20.0	ND	15	73	10 - 173
Chloroethane	20.0	ND	18	92	27 - 180
Trichlorofluoromethane	20.0	ND	20	98	56 - 155
Freon 113	20.0	ND	22	110	47 - 173
1,1-Dichloroethene	20.0	ND	22	112	47 - 139
trans-1,2-Dichloroethene	20.0	ND	23	116	54 - 134
cis-1,2-Dichloroethene	20.0	ND	22	111	56 - 128
1,1-Dichloroethane	20.0	3.0	27	119	57 - 142
Chloroform	20.0	ND	22	112	58 - 139
1,1,1-Trichloroethane	20.0	ND	25	123	57 - 148
Carbon Tetrachloride	20.0	ND	21	106	54 - 156
1,2-Dichloroethane	20.0	ND	21	104	50 - 156
Trichloroethene	20.0	ND	22	112	62 - 135
1,2-Dichloropropane	20.0	ND	21	104	61 - 133
Bromodichloromethane	20.0	ND	22	110	58 - 135
cis-1,3-Dichloropropene	20.0	ND	20	98	64 - 128
trans-1,3-Dichloropropene	20.0	ND	22	109	65 - 149
1,1,2-Trichloroethane	20.0	ND	21	106	57 - 141
Tetrachloroethene	20.0	ND	21	107	60 - 147
Dibromochloromethane	20.0	ND	19	93	50 - 140
1,2-Dibromoethane	20.0	ND	20	100	57 - 140
Chlorobenzene	20.0	ND	22	110	51 - 139
Bromoform	20.0	ND	18	90	46 - 148
1,1,2,2-Tetrachloroethane	20.0	ND	21	105	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	24	121	52 - 159
1,3-Dichlorobenzene	20.0	ND	22	111	66 - 129
1,4-Dichlorobenzene	20.0	ND	22	110	65 - 133
1,2-Dichlorobenzene	20.0	ND	21	106	63 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0038-020.0-20210720

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G26016	Laboratory ID:	1G26016-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: HMPN-MW0038-020.0-20210720

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,2-Dibromo-3-chloropropane	20.0	ND	23	115	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

HMPN-MW0038-020.0-20210720

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Matrix: Water
Batch: 1G26016
Laboratory ID: 1G26016-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: HMPN-MW0038-020.0-20210720

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	3.5	17	1	26	10 - 180
Chloromethane	20.0	10	50	4	31	33 - 154
Vinyl chloride	20.0	16	59	9	24	20 - 167
Bromomethane	20.0	14	68	7	29	10 - 173
Chloroethane	20.0	17	86	7	22	27 - 180
Trichlorofluoromethane	20.0	18	89	10	22	56 - 155
Freon 113	20.0	21	104	6	30	47 - 173
1,1-Dichloroethene	20.0	22	111	1	16	47 - 139
trans-1,2-Dichloroethene	20.0	21	106	8	20	54 - 134
cis-1,2-Dichloroethene	20.0	22	109	2	17	56 - 128
1,1-Dichloroethane	20.0	25	112	5	24	57 - 142
Chloroform	20.0	22	111	1	17	58 - 139
1,1,1-Trichloroethane	20.0	23	116	6	25	57 - 148
Carbon Tetrachloride	20.0	24	122	14	27	54 - 156
1,2-Dichloroethane	20.0	19	97	7	18	50 - 156
Trichloroethene	20.0	20	100	11	20	62 - 135
1,2-Dichloropropane	20.0	21	103	1	26	61 - 133
Bromodichloromethane	20.0	21	107	3	19	58 - 135
cis-1,3-Dichloropropene	20.0	19	94	4	20	64 - 128
trans-1,3-Dichloropropene	20.0	21	106	2	17	65 - 149
1,1,2-Trichloroethane	20.0	20	102	4	16	57 - 141
Tetrachloroethene	20.0	21	103	4	21	60 - 147
Dibromochloromethane	20.0	19	93	0.2	18	50 - 140
1,2-Dibromoethane	20.0	21	104	3	16	57 - 140
Chlorobenzene	20.0	21	107	3	13	51 - 139
Bromoform	20.0	17	85	5	18	46 - 148
1,1,2,2-Tetrachloroethane	20.0	21	103	2	17	60 - 139
1,2,4-Trichlorobenzene	20.0	24	121	0.2	24	52 - 159
1,3-Dichlorobenzene	20.0	22	110	1	23	66 - 129
1,4-Dichlorobenzene	20.0	22	109	1	23	65 - 133
1,2-Dichlorobenzene	20.0	21	105	0.7	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	23	117	1	21	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

ARS21-9635 Punta Gorda Corp. Roll-off

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Matrix: Water
Batch: 1G27015
Laboratory ID: 1G27015-MS1
Preparation: EPA 5030B_MS
Initial/Final: 0.05 mL / 5 mL
Source Sample Name: ARS21-9635 Punta Gorda Corp. Roll-off

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	2000	ND	2600	130	10 - 180
Chloromethane	2000	ND	2300	115	33 - 154
Vinyl chloride	2000	ND	2300	117	20 - 167
Bromomethane	2000	ND	1300	67	10 - 173
Chloroethane	2000	ND	2500	125	27 - 180
Trichlorofluoromethane	2000	ND	2300	116	56 - 155
Freon 113	2000	ND	2800	141	47 - 173
1,1-Dichloroethene	2000	ND	2800	138	47 - 139
trans-1,2-Dichloroethene	2000	ND	2500	124	54 - 134
cis-1,2-Dichloroethene	2000	ND	2400	120	56 - 128
1,1-Dichloroethane	2000	ND	2700	137	57 - 142
Chloroform	2000	ND	2600	130	58 - 139
1,1,1-Trichloroethane	2000	ND	2800	138	57 - 148
Carbon Tetrachloride	2000	ND	2500	125	54 - 156
1,2-Dichloroethane	2000	ND	2400	118	50 - 156
Trichloroethene	2000	ND	2400	121	62 - 135
1,2-Dichloropropane	2000	ND	2200	109	61 - 133
Bromodichloromethane	2000	ND	2200	112	58 - 135
cis-1,3-Dichloropropene	2000	ND	2000	101	64 - 128
trans-1,3-Dichloropropene	2000	ND	2000	100	65 - 149
1,1,2-Trichloroethane	2000	ND	2000	99	57 - 141
Tetrachloroethene	2000	ND	2000	99	60 - 147
Dibromochloromethane	2000	ND	2000	101	50 - 140
1,2-Dibromoethane	2000	ND	2000	100	57 - 140
Chlorobenzene	2000	ND	2200	108	51 - 139
Bromoform	2000	ND	2000	102	46 - 148
1,1,2,2-Tetrachloroethane	2000	ND	1800	92	60 - 139
1,2,4-Trichlorobenzene	2000	ND	1900	96	52 - 159
1,3-Dichlorobenzene	2000	ND	2000	98	66 - 129
1,4-Dichlorobenzene	2000	ND	1900	97	65 - 133
1,2-Dichlorobenzene	2000	ND	2000	98	63 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

ARS21-9635 Punta Gorda Corp. Roll-off

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G27015	Laboratory ID:	1G27015-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	0.05 mL / 5 mL

Source Sample Name: ARS21-9635 Punta Gorda Corp. Roll-off

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,2-Dibromo-3-chloropropane	2000	ND	2000	100	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

ARS21-9635 Punta Gorda Corp. Roll-off

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Matrix: Water
Batch: 1G27015
Laboratory ID: 1G27015-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 0.05 mL / 5 mL
Source Sample Name: ARS21-9635 Punta Gorda Corp. Roll-off

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	2000	2600	129	1	26	10 - 180
Chloromethane	2000	2300	116	0.8	31	33 - 154
Vinyl chloride	2000	2300	116	1	24	20 - 167
Bromomethane	2000	1600	79	16	29	10 - 173
Chloroethane	2000	2500	125	0.3	22	27 - 180
Trichlorofluoromethane	2000	2300	114	0.9	22	56 - 155
Freon 113	2000	2900	143	2	30	47 - 173
1,1-Dichloroethene	2000	2800	139	1	16	47 - 139
trans-1,2-Dichloroethene	2000	2600	129	4	20	54 - 134
cis-1,2-Dichloroethene	2000	2400	122	2	17	56 - 128
1,1-Dichloroethane	2000	2700	137	0	24	57 - 142
Chloroform	2000	2600	131	1	17	58 - 139
1,1,1-Trichloroethane	2000	2800	138	0.3	25	57 - 148
Carbon Tetrachloride	2000	2500	127	1	27	54 - 156
1,2-Dichloroethane	2000	2300	116	1	18	50 - 156
Trichloroethene	2000	2400	121	0.08	20	62 - 135
1,2-Dichloropropane	2000	2200	108	2	26	61 - 133
Bromodichloromethane	2000	2300	114	2	19	58 - 135
cis-1,3-Dichloropropene	2000	2100	103	2	20	64 - 128
trans-1,3-Dichloropropene	2000	2000	102	3	17	65 - 149
1,1,2-Trichloroethane	2000	2000	99	0.6	16	57 - 141
Tetrachloroethene	2000	2000	99	0.5	21	60 - 147
Dibromochloromethane	2000	2000	102	1	18	50 - 140
1,2-Dibromoethane	2000	2100	103	3	16	57 - 140
Chlorobenzene	2000	2200	108	0.05	13	51 - 139
Bromoform	2000	2100	106	4	18	46 - 148
1,1,2,2-Tetrachloroethane	2000	1900	94	2	17	60 - 139
1,2,4-Trichlorobenzene	2000	2100	104	8	24	52 - 159
1,3-Dichlorobenzene	2000	2000	101	3	23	66 - 129
1,4-Dichlorobenzene	2000	2000	102	5	23	65 - 133
1,2-Dichlorobenzene	2000	2000	102	4	25	63 - 131
1,2-Dibromo-3-chloropropane	2000	2000	99	0.8	21	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASINFLUENT-20210723

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Matrix: Water
Batch: 1G27016
Laboratory ID: 1G27016-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-ASINFLUENT-20210723

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	30	148	10 - 180
Chloromethane	20.0	ND	24	122	33 - 154
Vinyl chloride	20.0	12	35	115	20 - 167
Bromomethane	20.0	ND	24	120	10 - 173
Chloroethane	20.0	ND	26	129	27 - 180
Trichlorofluoromethane	20.0	ND	23	116	56 - 155
Freon 113	20.0	ND	20	100	47 - 173
1,1-Dichloroethene	20.0	ND	22	111	47 - 139
trans-1,2-Dichloroethene	20.0	ND	22	112	54 - 134
cis-1,2-Dichloroethene	20.0	ND	23	114	56 - 128
1,1-Dichloroethane	20.0	ND	22	111	57 - 142
Chloroform	20.0	ND	22	111	58 - 139
1,1,1-Trichloroethane	20.0	ND	24	118	57 - 148
Carbon Tetrachloride	20.0	ND	24	120	54 - 156
1,2-Dichloroethane	20.0	ND	20	100	50 - 156
Trichloroethene	20.0	ND	21	106	62 - 135
1,2-Dichloropropane	20.0	ND	19	96	61 - 133
Bromodichloromethane	20.0	ND	21	104	58 - 135
cis-1,3-Dichloropropene	20.0	ND	19	93	64 - 128
trans-1,3-Dichloropropene	20.0	ND	22	109	65 - 149
1,1,2-Trichloroethane	20.0	ND	21	103	57 - 141
Tetrachloroethene	20.0	ND	20	100	60 - 147
Dibromochloromethane	20.0	ND	19	95	50 - 140
1,2-Dibromoethane	20.0	ND	19	97	57 - 140
Chlorobenzene	20.0	ND	22	108	51 - 139
Bromoform	20.0	ND	17	84	46 - 148
1,1,2,2-Tetrachloroethane	20.0	ND	21	103	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	20	101	52 - 159
1,3-Dichlorobenzene	20.0	ND	22	108	66 - 129
1,4-Dichlorobenzene	20.0	ND	21	106	65 - 133
1,2-Dichlorobenzene	20.0	ND	20	102	63 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASINFLUENT-20210723

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G27016	Laboratory ID:	1G27016-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: CRCA-ASINFLUENT-20210723

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,2-Dibromo-3-chloropropane	20.0	ND	22	110	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-ASINFLUENT-20210723

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Matrix: Water
Batch: 1G27016
Laboratory ID: 1G27016-MSD1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-ASINFLUENT-20210723

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20.0	28	142	5	26	10 - 180
Chloromethane	20.0	23	116	5	31	33 - 154
Vinyl chloride	20.0	34	110	3	24	20 - 167
Bromomethane	20.0	22	109	10	29	10 - 173
Chloroethane	20.0	22	111	15	22	27 - 180
Trichlorofluoromethane	20.0	23	113	3	22	56 - 155
Freon 113	20.0	20	102	2	30	47 - 173
1,1-Dichloroethene	20.0	22	108	3	16	47 - 139
trans-1,2-Dichloroethene	20.0	22	109	3	20	54 - 134
cis-1,2-Dichloroethene	20.0	22	108	5	17	56 - 128
1,1-Dichloroethane	20.0	22	110	1	24	57 - 142
Chloroform	20.0	22	108	3	17	58 - 139
1,1,1-Trichloroethane	20.0	22	111	6	25	57 - 148
Carbon Tetrachloride	20.0	20	102	17	27	54 - 156
1,2-Dichloroethane	20.0	19	96	4	18	50 - 156
Trichloroethene	20.0	20	101	5	20	62 - 135
1,2-Dichloropropane	20.0	20	102	5	26	61 - 133
Bromodichloromethane	20.0	21	103	1	19	58 - 135
cis-1,3-Dichloropropene	20.0	18	92	0.6	20	64 - 128
trans-1,3-Dichloropropene	20.0	21	106	3	17	65 - 149
1,1,2-Trichloroethane	20.0	21	104	0.7	16	57 - 141
Tetrachloroethene	20.0	20	101	0.3	21	60 - 147
Dibromochloromethane	20.0	18	91	4	18	50 - 140
1,2-Dibromoethane	20.0	19	94	3	16	57 - 140
Chlorobenzene	20.0	21	106	2	13	51 - 139
Bromoform	20.0	17	83	1	18	46 - 148
1,1,2,2-Tetrachloroethane	20.0	20	100	2	17	60 - 139
1,2,4-Trichlorobenzene	20.0	26	129	25 *	24	52 - 159
1,3-Dichlorobenzene	20.0	22	109	1	23	66 - 129
1,4-Dichlorobenzene	20.0	21	105	1	23	65 - 133
1,2-Dichlorobenzene	20.0	21	106	4	25	63 - 131
1,2-Dibromo-3-chloropropane	20.0	25	124	12	21	48 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-MW0002-032.5-20210726

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Matrix: Water
Batch: 1G28012
Laboratory ID: 1G28012-MS1
Preparation: EPA 5030B_MS
Initial/Final: 5 mL / 5 mL
Source Sample Name: CRCA-MW0002-032.5-20210726

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
Dichlorodifluoromethane	20.0	ND	19	93	10 - 180
Chloromethane	20.0	ND	17	85	33 - 154
Vinyl chloride	20.0	7.4	25	87	20 - 167
Bromomethane	20.0	ND	8.3	42	10 - 173
Chloroethane	20.0	ND	18	92	27 - 180
Trichlorofluoromethane	20.0	ND	22	111	56 - 155
Freon 113	20.0	ND	21	107	47 - 173
1,1-Dichloroethene	20.0	ND	23	113	47 - 139
trans-1,2-Dichloroethene	20.0	0.73	22	107	54 - 134
cis-1,2-Dichloroethene	20.0	ND	22	110	56 - 128
1,1-Dichloroethane	20.0	ND	22	112	57 - 142
Chloroform	20.0	ND	21	106	58 - 139
1,1,1-Trichloroethane	20.0	ND	23	113	57 - 148
Carbon Tetrachloride	20.0	ND	21	106	54 - 156
1,2-Dichloroethane	20.0	ND	19	93	50 - 156
Trichloroethene	20.0	ND	22	109	62 - 135
1,2-Dichloropropane	20.0	ND	20	101	61 - 133
Bromodichloromethane	20.0	ND	21	103	58 - 135
cis-1,3-Dichloropropene	20.0	ND	18	92	64 - 128
trans-1,3-Dichloropropene	20.0	ND	21	106	65 - 149
1,1,2-Trichloroethane	20.0	ND	20	102	57 - 141
Tetrachloroethene	20.0	ND	20	102	60 - 147
Dibromochloromethane	20.0	ND	18	91	50 - 140
1,2-Dibromoethane	20.0	ND	19	97	57 - 140
Chlorobenzene	20.0	ND	22	108	51 - 139
Bromoform	20.0	ND	15	74	46 - 148
1,1,2,2-Tetrachloroethane	20.0	ND	20	101	60 - 139
1,2,4-Trichlorobenzene	20.0	ND	23	116	52 - 159
1,3-Dichlorobenzene	20.0	ND	21	104	66 - 129
1,4-Dichlorobenzene	20.0	ND	20	102	65 - 133
1,2-Dichlorobenzene	20.0	ND	20	99	63 - 131

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

EPA 8260D

CRCA-MW0002-032.5-20210726

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Matrix:	Water		
Batch:	1G28012	Laboratory ID:	1G28012-MS1
Preparation:	EPA 5030B_MS	Initial/Final:	5 mL / 5 mL

Source Sample Name: CRCA-MW0002-032.5-20210726

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC. #	QC LIMITS REC.
1,2-Dibromo-3-chloropropane	20.0	ND	22	110	48 - 150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA66932
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA66932-SCV1)			Lab File ID: 215FM013.D		Analyzed: 06/18/21 12:15			
Dibromofluoromethane	50.0	100	70 - 130	9.428	9.428	0.0000	+/-0.5	
Toluene-d8	50.0	110	70 - 130	11.778	11.7795	-0.0015	+/-0.5	
4-Bromofluorobenzene	50.0	109	70 - 130	14.328	14.32875	-0.0008	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67203
Instrument: OVGCMS2
Matrix: Water
Calibration: 2107025

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Secondary Cal Check (AA67203-SCV1)			Lab File ID: 212GB012.D		Analyzed: 07/07/21 13:51			
Dibromofluoromethane	50.0	96	70 - 130	11.1	11.09286	0.0071	+/-0.5	
Toluene-d8	50.0	100	70 - 130	13.26	13.25286	0.0071	+/-0.5	
4-Bromofluorobenzene	50.0	100	70 - 130	15.75	15.74857	0.0014	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA67497-CCV1)			Lab File ID: 215GU003.D		Analyzed: 07/26/21 08:35			
Dibromofluoromethane	50.0	107	80 - 120	9.439	9.428	0.0110	+/-0.5	
Toluene-d8	50.0	108	80 - 120	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	106	80 - 120	14.334	14.32875	0.0053	+/-0.5	
LCS (1G26016-BS1)			Lab File ID: 215GU004.D		Analyzed: 07/26/21 09:06			
Dibromofluoromethane	50.0	103	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Instrument RL Check (AA67497-CRL1)			Lab File ID: 215GU005.D		Analyzed: 07/26/21 09:34			
Dibromofluoromethane	50.0	101	1 - 199	9.439	9.428	0.0110	+/-0.5	
Toluene-d8	50.0	103	1 - 199	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	100	1 - 199	14.334	14.32875	0.0053	+/-0.5	
Blank (1G26016-BLK1)			Lab File ID: 215GU006.D		Analyzed: 07/26/21 10:02			
Dibromofluoromethane	50.0	102	53 - 146	9.44	9.428	0.0120	+/-0.5	
Toluene-d8	50.0	101	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0038-020.0-20210720 (AE05878-02)			Lab File ID: 215GU007.D		Analyzed: 07/26/21 10:30			
Dibromofluoromethane	50.0	105	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0037-010.0-20210720 (AE05878-01)			Lab File ID: 215GU008.D		Analyzed: 07/26/21 10:58			
Dibromofluoromethane	50.0	105	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	102	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0046-015.0-20210720 (AE05878-03)			Lab File ID: 215GU009.D		Analyzed: 07/26/21 11:26			
Dibromofluoromethane	50.0	106	53 - 146	9.44	9.428	0.0120	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0039-035.0-20210720 (AE05878-05)			Lab File ID: 215GU011.D		Analyzed: 07/26/21 12:22			
Dibromofluoromethane	50.0	109	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.334	14.32875	0.0053	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0040-042.5-20210720 (AE05878-06)			Lab File ID: 215GU012.D		Analyzed: 07/26/21 12:50			
Dibromofluoromethane	50.0	107	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0027-042.5-20210720 (AE05878-07)			Lab File ID: 215GU013.D		Analyzed: 07/26/21 13:18			
Dibromofluoromethane	50.0	112	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	106	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0028-047.5-20210720 (AE05878-08)			Lab File ID: 215GU014.D		Analyzed: 07/26/21 13:46			
Dibromofluoromethane	50.0	108	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	107	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0045-030.0-20210721 (AE05878-09)			Lab File ID: 215GU015.D		Analyzed: 07/26/21 14:14			
Dibromofluoromethane	50.0	108	53 - 146	9.439	9.428	0.0110	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0036-015.0-20210721 (AE05878-10)			Lab File ID: 215GU016.D		Analyzed: 07/26/21 14:42			
Dibromofluoromethane	50.0	109	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0041-035.0-20210721 (AE05878-11)			Lab File ID: 215GU017.D		Analyzed: 07/26/21 15:10			
Dibromofluoromethane	50.0	112	53 - 146	9.433	9.428	0.0050	+/-0.5	
Toluene-d8	50.0	106	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0042-042.5-20210721 (AE05878-12)			Lab File ID: 215GU018.D		Analyzed: 07/26/21 15:38			
Dibromofluoromethane	50.0	110	53 - 146	9.439	9.428	0.0110	+/-0.5	
Toluene-d8	50.0	105	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.34	14.32875	0.0113	+/-0.5	
HMPN-MW0043-035.0-20210721 (AE05878-13)			Lab File ID: 215GU019.D		Analyzed: 07/26/21 16:07			
Dibromofluoromethane	50.0	110	53 - 146	9.44	9.428	0.0120	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.334	14.32875	0.0053	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0011-025.0-20210721 (AE05878-15)			Lab File ID: 215GU021.D		Analyzed: 07/26/21 17:03			
Dibromofluoromethane	50.0	107	53 - 146	9.439	9.428	0.0110	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0009-010.8-20210721 (AE05878-16)			Lab File ID: 215GU022.D		Analyzed: 07/26/21 17:31			
Dibromofluoromethane	50.0	108	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0034-015.0-20210721 (AE05878-17)			Lab File ID: 215GU023.D		Analyzed: 07/26/21 17:59			
Dibromofluoromethane	50.0	109	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	102	41 - 146	11.79	11.7795	0.0105	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0035-035.0-20210721 (AE05878-18)			Lab File ID: 215GU024.D		Analyzed: 07/26/21 18:27			
Dibromofluoromethane	50.0	107	53 - 146	9.44	9.428	0.0120	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Matrix Spike (1G26016-MS1)			Lab File ID: 215GU026.D		Analyzed: 07/26/21 19:23			
Dibromofluoromethane	50.0	108	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	108	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Matrix Spike Dup (1G26016-MSD1)			Lab File ID: 215GU027.D		Analyzed: 07/26/21 19:51			
Dibromofluoromethane	50.0	106	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67513
Instrument: OVGCMS2
Matrix: Water
Calibration: 2107025

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA67513-CCV1)			Lab File ID: 212GV002.D		Analyzed: 07/27/21 07:40			
Dibromofluoromethane	50.0	113	80 - 120	11.09	11.09286	-0.0029	+/-0.5	
Toluene-d8	50.0	100	80 - 120	13.25	13.25286	-0.0029	+/-0.5	
4-Bromofluorobenzene	50.0	99	80 - 120	15.74	15.74857	-0.0086	+/-0.5	
LCS (1G27015-BS1)			Lab File ID: 212GV003.D		Analyzed: 07/27/21 08:09			
Dibromofluoromethane	50.0	110	53 - 146	11.09	11.09286	-0.0029	+/-0.5	
Toluene-d8	50.0	99	41 - 146	13.25	13.25286	-0.0029	+/-0.5	
4-Bromofluorobenzene	50.0	97	41 - 142	15.74	15.74857	-0.0086	+/-0.5	
Blank (1G27015-BLK1)			Lab File ID: 212GV005.D		Analyzed: 07/27/21 09:07			
Dibromofluoromethane	50.0	115	53 - 146	11.09	11.09286	-0.0029	+/-0.5	
Toluene-d8	50.0	101	41 - 146	13.25	13.25286	-0.0029	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	15.74	15.74857	-0.0086	+/-0.5	
Matrix Spike (1G27015-MS1)			Lab File ID: 212GV011.D		Analyzed: 07/27/21 11:59			
Dibromofluoromethane	5000	113	53 - 146	11.09	11.09286	-0.0029	+/-0.5	
Toluene-d8	5000	100	41 - 146	13.24	13.25286	-0.0129	+/-0.5	
4-Bromofluorobenzene	5000	100	41 - 142	15.74	15.74857	-0.0086	+/-0.5	
Matrix Spike Dup (1G27015-MSD1)			Lab File ID: 212GV012.D		Analyzed: 07/27/21 12:28			
Dibromofluoromethane	5000	117	53 - 146	11.09	11.09286	-0.0029	+/-0.5	
Toluene-d8	5000	102	41 - 146	13.25	13.25286	-0.0029	+/-0.5	
4-Bromofluorobenzene	5000	100	41 - 142	15.74	15.74857	-0.0086	+/-0.5	
HMPN-MW0042-042.5-20210721 (AE05878-12RE1)			Lab File ID: 212GV020.D		Analyzed: 07/27/21 16:18			
Dibromofluoromethane	50.0	113	53 - 146	11.09	11.09286	-0.0029	+/-0.5	
Toluene-d8	50.0	98	41 - 146	13.25	13.25286	-0.0029	+/-0.5	
4-Bromofluorobenzene	50.0	96	41 - 142	15.74	15.74857	-0.0086	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67520
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA67520-CCV1)			Lab File ID: 215GV002.D		Analyzed: 07/27/21 08:02			
Dibromofluoromethane	50.0	106	80 - 120	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	106	80 - 120	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	105	80 - 120	14.334	14.32875	0.0053	+/-0.5	
LCS (1G27016-BS1)			Lab File ID: 215GV003.D		Analyzed: 07/27/21 08:38			
Dibromofluoromethane	50.0	113	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	102	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Blank (1G27016-BLK1)			Lab File ID: 215GV005.D		Analyzed: 07/27/21 09:34			
Dibromofluoromethane	50.0	106	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	101	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0047-025.0-20210720 (AE05878-04RE1)			Lab File ID: 215GV008.D		Analyzed: 07/27/21 10:58			
Dibromofluoromethane	50.0	105	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0044-042.5-20210721 (AE05878-14RE1)			Lab File ID: 215GV009.D		Analyzed: 07/27/21 11:26			
Dibromofluoromethane	50.0	104	53 - 146	9.428	9.428	0.0000	+/-0.5	
Toluene-d8	50.0	100	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0016-010.0-20210722 (AE05878-19RE1)			Lab File ID: 215GV010.D		Analyzed: 07/27/21 11:54			
Dibromofluoromethane	50.0	104	53 - 146	9.433	9.428	0.0050	+/-0.5	
Toluene-d8	50.0	101	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0029-015.0-20210722 (AE05878-20)			Lab File ID: 215GV011.D		Analyzed: 07/27/21 12:22			
Dibromofluoromethane	50.0	102	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0030-025.0-20210722 (AE05878-21)			Lab File ID: 215GV012.D		Analyzed: 07/27/21 12:50			
Dibromofluoromethane	50.0	103	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.334	14.32875	0.0053	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67520
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
HMPN-MW0031-035.0-20210722 (AE05878-22)			Lab File ID: 215GV013.D		Analyzed: 07/27/21 13:19			
Dibromofluoromethane	50.0	108	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	107	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0032-042.5-20210722 (AE05878-23)			Lab File ID: 215GV014.D		Analyzed: 07/27/21 13:47			
Dibromofluoromethane	50.0	102	53 - 146	9.433	9.428	0.0050	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0033-047.5-20210722 (AE05878-24)			Lab File ID: 215GV015.D		Analyzed: 07/27/21 14:15			
Dibromofluoromethane	50.0	103	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	107	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0008-025.0-20210722 (AE05878-25)			Lab File ID: 215GV016.D		Analyzed: 07/27/21 14:43			
Dibromofluoromethane	50.0	103	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0024-060.0-20210722 (AE05878-26)			Lab File ID: 215GV017.D		Analyzed: 07/27/21 15:11			
Dibromofluoromethane	50.0	103	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	98	41 - 142	14.334	14.32875	0.0053	+/-0.5	
HMPN-MW0004-010.0-20210722 (AE05878-28)			Lab File ID: 215GV019.D		Analyzed: 07/27/21 16:07			
Dibromofluoromethane	50.0	105	53 - 146	9.433	9.428	0.0050	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Matrix Spike (1G27016-MS1)			Lab File ID: 215GV024.D		Analyzed: 07/27/21 18:28			
Dibromofluoromethane	50.0	108	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	103	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Matrix Spike Dup (1G27016-MSD1)			Lab File ID: 215GV025.D		Analyzed: 07/27/21 18:56			
Dibromofluoromethane	50.0	104	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	102	41 - 142	14.334	14.32875	0.0053	+/-0.5	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67540
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Surrogate Compound	Spike Level ug/L	% Recovery	Recovery Limits	RT	Calibration RT	RT Diff	RT Diff Limit	Q
Calibration Check (AA67540-CCV1)			Lab File ID: 215GW003.D		Analyzed: 07/28/21 08:24			
Dibromofluoromethane	50.0	104	80 - 120	9.433	9.428	0.0050	+/-0.5	
Toluene-d8	50.0	106	80 - 120	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	104	80 - 120	14.334	14.32875	0.0053	+/-0.5	
LCS (1G28012-BS1)			Lab File ID: 215GW004.D		Analyzed: 07/28/21 08:52			
Dibromofluoromethane	50.0	105	53 - 146	9.428	9.428	0.0000	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	100	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
Instrument RL Check (AA67540-CRL1)			Lab File ID: 215GW005.D		Analyzed: 07/28/21 09:20			
Dibromofluoromethane	50.0	102	1 - 199	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	101	1 - 199	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	100	1 - 199	14.328	14.32875	-0.0008	+/-0.5	
Blank (1G28012-BLK1)			Lab File ID: 215GW006.D		Analyzed: 07/28/21 09:48			
Dibromofluoromethane	50.0	99	53 - 146	9.434	9.428	0.0060	+/-0.5	
Toluene-d8	50.0	103	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	99	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0032-042.5-20210722 (AE05878-23RE1)			Lab File ID: 215GW014.D		Analyzed: 07/28/21 13:33			
Dibromofluoromethane	50.0	105	53 - 146	9.428	9.428	0.0000	+/-0.5	
Toluene-d8	50.0	105	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.328	14.32875	-0.0008	+/-0.5	
HMPN-MW0002-035.0-20210722 (AE05878-27RE1)			Lab File ID: 215GW015.D		Analyzed: 07/28/21 14:01			
Dibromofluoromethane	50.0	102	53 - 146	9.433	9.428	0.0050	+/-0.5	
Toluene-d8	50.0	102	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	101	41 - 142	14.334	14.32875	0.0053	+/-0.5	
Matrix Spike (1G28012-MS1)			Lab File ID: 215GW026.D		Analyzed: 07/28/21 19:08			
Dibromofluoromethane	50.0	106	53 - 146	9.428	9.428	0.0000	+/-0.5	
Toluene-d8	50.0	104	41 - 146	11.784	11.7795	0.0045	+/-0.5	
4-Bromofluorobenzene	50.0	104	41 - 142	14.334	14.32875	0.0053	+/-0.5	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA66932
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA66932-CAL1)			Lab File ID: 215FM004.D			Analyzed: 06/18/21 08:05			
Pentafluorobenzene	1201889	9.857	1101889	9.851	109	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2686237	10.45	2525815	10.444	106	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1505146	13.229	1610233	13.223	93	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1176558	15.491	1271242	15.485	93	50 - 200	0.0060	+/-0.50	
Cal Standard (AA66932-CAL2)			Lab File ID: 215FM005.D			Analyzed: 06/18/21 08:32			
Pentafluorobenzene	1226065	9.857	1101889	9.851	111	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2753498	10.45	2525815	10.444	109	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1619681	13.229	1610233	13.223	101	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1248669	15.491	1271242	15.485	98	50 - 200	0.0060	+/-0.50	
Cal Standard (AA66932-CAL3)			Lab File ID: 215FM006.D			Analyzed: 06/18/21 09:00			
Pentafluorobenzene	1047198	9.857	1101889	9.851	95	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2419754	10.45	2525815	10.444	96	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1545028	13.229	1610233	13.223	96	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1320874	15.486	1271242	15.485	104	50 - 200	0.0010	+/-0.50	
Cal Standard (AA66932-CAL4)			Lab File ID: 215FM007.D			Analyzed: 06/18/21 09:28			
Pentafluorobenzene	1235637	9.857	1101889	9.851	112	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2720919	10.45	2525815	10.444	108	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1709586	13.229	1610233	13.223	106	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1365508	15.485	1271242	15.485	107	50 - 200	0.0000	+/-0.50	
Cal Standard (AA66932-CAL5)			Lab File ID: 215FM008.D			Analyzed: 06/18/21 09:56			
Pentafluorobenzene	1048667	9.857	1101889	9.851	95	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2471790	10.444	2525815	10.444	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1553840	13.229	1610233	13.223	96	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1230662	15.485	1271242	15.485	97	50 - 200	0.0000	+/-0.50	
Cal Standard (AA66932-CAL6)			Lab File ID: 215FM009.D			Analyzed: 06/18/21 10:24			
Pentafluorobenzene	1101889	9.851	1101889	9.851	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2525815	10.444	2525815	10.444	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1610233	13.223	1610233	13.223	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1271242	15.485	1271242	15.485	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA66932-CAL7)			Lab File ID: 215FM010.D			Analyzed: 06/18/21 10:52			
Pentafluorobenzene	1123435	9.851	1101889	9.851	102	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2544231	10.444	2525815	10.444	101	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1714182	13.229	1610233	13.223	106	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1273276	15.485	1271242	15.485	100	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA66932
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA66932-CAL8)			Lab File ID: 215FM011.D			Analyzed: 06/18/21 11:20			
Pentafluorobenzene	1129487	9.851	1101889	9.851	103	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	2502919	10.444	2525815	10.444	99	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1697989	13.223	1610233	13.223	105	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	1266610	15.485	1271242	15.485	100	50 - 200	0.0000	+/-0.50	
Secondary Cal Check (AA66932-SCV1)			Lab File ID: 215FM013.D			Analyzed: 06/18/21 12:15			
Pentafluorobenzene	1128318	9.857	1101889	9.851	102	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2499257	10.444	2525815	10.444	99	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	1604968	13.229	1610233	13.223	100	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1259307	15.485	1271242	15.485	99	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67203
Instrument: OVGCMS2
Matrix: Water
Calibration: 2107025

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA67203-CAL1)			Lab File ID: 212GB002.D			Analyzed: 07/07/21 08:38			
Pentafluorobenzene	215175	11.49	193062	11.49	111	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	353915	12.04	330090	12.04	107	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	163131	14.63	152465	14.63	107	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	128103	17	126714	17	101	50 - 200	0.0000	+/-0.50	
Cal Standard (AA67203-CAL2)			Lab File ID: 212GB003.D			Analyzed: 07/07/21 09:12			
Pentafluorobenzene	211652	11.48	193062	11.49	110	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	347121	12.04	330090	12.04	105	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	158805	14.63	152465	14.63	104	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	127077	17	126714	17	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA67203-CAL3)			Lab File ID: 212GB004.D			Analyzed: 07/07/21 09:45			
Pentafluorobenzene	203927	11.49	193062	11.49	106	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	341315	12.04	330090	12.04	103	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	156499	14.63	152465	14.63	103	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	125355	17	126714	17	99	50 - 200	0.0000	+/-0.50	
Cal Standard (AA67203-CAL4)			Lab File ID: 212GB005.D			Analyzed: 07/07/21 10:20			
Pentafluorobenzene	201361	11.48	193062	11.49	104	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	332358	12.03	330090	12.04	101	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	153847	14.63	152465	14.63	101	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	125049	16.99	126714	17	99	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA67203-CAL5)			Lab File ID: 212GB006.D			Analyzed: 07/07/21 10:49			
Pentafluorobenzene	200029	11.49	193062	11.49	104	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	331857	12.03	330090	12.04	101	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	153677	14.63	152465	14.63	101	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	125353	16.99	126714	17	99	50 - 200	-0.0100	+/-0.50	
Cal Standard (AA67203-CAL6)			Lab File ID: 212GB007.D			Analyzed: 07/07/21 11:23			
Pentafluorobenzene	193062	11.49	193062	11.49	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	330090	12.04	330090	12.04	100	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	152465	14.63	152465	14.63	100	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	126714	17	126714	17	100	50 - 200	0.0000	+/-0.50	
Cal Standard (AA67203-CAL7)			Lab File ID: 212GB008.D			Analyzed: 07/07/21 11:52			
Pentafluorobenzene	193020	11.49	193062	11.49	100	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	331667	12.03	330090	12.04	100	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	154870	14.63	152465	14.63	102	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	128039	16.99	126714	17	101	50 - 200	-0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67203
Instrument: OVGCMS2
Matrix: Water
Calibration: 2107025

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Cal Standard (AA67203-CAL8)			Lab File ID: 212GB009.D			Analyzed: 07/07/21 12:20			
Pentafluorobenzene	186248	11.48	193062	11.49	96	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	321571	12.03	330090	12.04	97	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	149062	14.63	152465	14.63	98	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	124574	16.99	126714	17	98	50 - 200	-0.0100	+/-0.50	
Secondary Cal Check (AA67203-SCV1)			Lab File ID: 212GB012.D			Analyzed: 07/07/21 13:51			
Pentafluorobenzene	194936	11.49	193062	11.49	101	50 - 200	0.0000	+/-0.50	
1,4-Difluorobenzene	323837	12.04	330090	12.04	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	148905	14.63	152465	14.63	98	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	124145	17	126714	17	98	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA67497-CCV1)			Lab File ID: 215GU003.D			Analyzed: 07/26/21 08:35			
Pentafluorobenzene	1187063	9.862	1101889	9.851	108	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2724224	10.456	2525815	10.444	108	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1769790	13.235	1610233	13.223	110	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1346209	15.491	1271242	15.485	106	50 - 200	0.0060	+/-0.50	
LCS (1G26016-BS1)			Lab File ID: 215GU004.D			Analyzed: 07/26/21 09:06			
Pentafluorobenzene	1225332	9.863	1101889	9.851	111	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2809745	10.456	2525815	10.444	111	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1741827	13.235	1610233	13.223	108	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1349946	15.497	1271242	15.485	106	50 - 200	0.0120	+/-0.50	
Instrument RL Check (AA67497-CRL1)			Lab File ID: 215GU005.D			Analyzed: 07/26/21 09:34			
Pentafluorobenzene	1188743	9.863	1101889	9.851	108	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2762389	10.456	2525815	10.444	109	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1725722	13.235	1610233	13.223	107	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1323203	15.497	1271242	15.485	104	50 - 200	0.0120	+/-0.50	
Blank (1G26016-BLK1)			Lab File ID: 215GU006.D			Analyzed: 07/26/21 10:02			
Pentafluorobenzene	1140364	9.863	1101889	9.851	103	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2663598	10.456	2525815	10.444	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1654230	13.235	1610233	13.223	103	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1265398	15.491	1271242	15.485	100	50 - 200	0.0060	+/-0.50	
HMPN-MW0038-020.0-20210720 (AE05878-02)			Lab File ID: 215GU007.D			Analyzed: 07/26/21 10:30			
Pentafluorobenzene	1095521	9.857	1101889	9.851	99	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2649154	10.456	2525815	10.444	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1651203	13.229	1610233	13.223	103	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1252310	15.491	1271242	15.485	99	50 - 200	0.0060	+/-0.50	
HMPN-MW0037-010.0-20210720 (AE05878-01)			Lab File ID: 215GU008.D			Analyzed: 07/26/21 10:58			
Pentafluorobenzene	1081654	9.862	1101889	9.851	98	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2644846	10.456	2525815	10.444	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1596495	13.235	1610233	13.223	99	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1222070	15.491	1271242	15.485	96	50 - 200	0.0060	+/-0.50	
HMPN-MW0046-015.0-20210720 (AE05878-03)			Lab File ID: 215GU009.D			Analyzed: 07/26/21 11:26			
Pentafluorobenzene	1057130	9.857	1101889	9.851	96	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2544592	10.456	2525815	10.444	101	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1582822	13.229	1610233	13.223	98	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1222363	15.491	1271242	15.485	96	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0039-035.0-20210720 (AE05878-05)			Lab File ID: 215GU011.D			Analyzed: 07/26/21 12:22			
Pentafluorobenzene	1001965	9.857	1101889	9.851	91	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2502973	10.456	2525815	10.444	99	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1565135	13.235	1610233	13.223	97	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1207716	15.491	1271242	15.485	95	50 - 200	0.0060	+/-0.50	
HMPN-MW0040-042.5-20210720 (AE05878-06)			Lab File ID: 215GU012.D			Analyzed: 07/26/21 12:50			
Pentafluorobenzene	991122	9.863	1101889	9.851	90	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2435457	10.456	2525815	10.444	96	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1508234	13.235	1610233	13.223	94	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1172707	15.497	1271242	15.485	92	50 - 200	0.0120	+/-0.50	
HMPN-MW0027-042.5-20210720 (AE05878-07)			Lab File ID: 215GU013.D			Analyzed: 07/26/21 13:18			
Pentafluorobenzene	961575	9.862	1101889	9.851	87	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2358635	10.456	2525815	10.444	93	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1515567	13.235	1610233	13.223	94	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1167524	15.491	1271242	15.485	92	50 - 200	0.0060	+/-0.50	
HMPN-MW0028-047.5-20210720 (AE05878-08)			Lab File ID: 215GU014.D			Analyzed: 07/26/21 13:46			
Pentafluorobenzene	968042	9.862	1101889	9.851	88	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2317750	10.456	2525815	10.444	92	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1524084	13.235	1610233	13.223	95	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1149538	15.497	1271242	15.485	90	50 - 200	0.0120	+/-0.50	
HMPN-MW0045-030.0-20210721 (AE05878-09)			Lab File ID: 215GU015.D			Analyzed: 07/26/21 14:14			
Pentafluorobenzene	984947	9.862	1101889	9.851	89	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2429055	10.456	2525815	10.444	96	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1512894	13.235	1610233	13.223	94	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1140192	15.497	1271242	15.485	90	50 - 200	0.0120	+/-0.50	
HMPN-MW0036-015.0-20210721 (AE05878-10)			Lab File ID: 215GU016.D			Analyzed: 07/26/21 14:42			
Pentafluorobenzene	949225	9.862	1101889	9.851	86	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2386925	10.456	2525815	10.444	95	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1493178	13.235	1610233	13.223	93	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1117556	15.491	1271242	15.485	88	50 - 200	0.0060	+/-0.50	
HMPN-MW0041-035.0-20210721 (AE05878-11)			Lab File ID: 215GU017.D			Analyzed: 07/26/21 15:10			
Pentafluorobenzene	975181	9.862	1101889	9.851	89	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2376404	10.456	2525815	10.444	94	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1480189	13.235	1610233	13.223	92	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1155350	15.491	1271242	15.485	91	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0042-042.5-20210721 (AE05878-12)			Lab File ID: 215GU018.D			Analyzed: 07/26/21 15:38			
Pentafluorobenzene	977873	9.863	1101889	9.851	89	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2373184	10.456	2525815	10.444	94	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1498947	13.235	1610233	13.223	93	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1173705	15.497	1271242	15.485	92	50 - 200	0.0120	+/-0.50	
HMPN-MW0043-035.0-20210721 (AE05878-13)			Lab File ID: 215GU019.D			Analyzed: 07/26/21 16:07			
Pentafluorobenzene	933431	9.863	1101889	9.851	85	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2310606	10.456	2525815	10.444	91	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1438993	13.235	1610233	13.223	89	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1103603	15.491	1271242	15.485	87	50 - 200	0.0060	+/-0.50	
HMPN-MW0011-025.0-20210721 (AE05878-15)			Lab File ID: 215GU021.D			Analyzed: 07/26/21 17:03			
Pentafluorobenzene	968444	9.862	1101889	9.851	88	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2355485	10.456	2525815	10.444	93	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1470716	13.235	1610233	13.223	91	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1114514	15.491	1271242	15.485	88	50 - 200	0.0060	+/-0.50	
HMPN-MW0009-010.8-20210721 (AE05878-16)			Lab File ID: 215GU022.D			Analyzed: 07/26/21 17:31			
Pentafluorobenzene	965323	9.862	1101889	9.851	88	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2378895	10.456	2525815	10.444	94	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1458997	13.235	1610233	13.223	91	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1119576	15.497	1271242	15.485	88	50 - 200	0.0120	+/-0.50	
HMPN-MW0034-015.0-20210721 (AE05878-17)			Lab File ID: 215GU023.D			Analyzed: 07/26/21 17:59			
Pentafluorobenzene	969770	9.862	1101889	9.851	88	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2391287	10.456	2525815	10.444	95	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1472112	13.235	1610233	13.223	91	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1117088	15.497	1271242	15.485	88	50 - 200	0.0120	+/-0.50	
HMPN-MW0035-035.0-20210721 (AE05878-18)			Lab File ID: 215GU024.D			Analyzed: 07/26/21 18:27			
Pentafluorobenzene	949063	9.863	1101889	9.851	86	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2337063	10.456	2525815	10.444	93	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1466475	13.235	1610233	13.223	91	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1117679	15.491	1271242	15.485	88	50 - 200	0.0060	+/-0.50	
Matrix Spike (1G26016-MS1)			Lab File ID: 215GU026.D			Analyzed: 07/26/21 19:23			
Pentafluorobenzene	973114	9.862	1101889	9.851	88	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2356129	10.456	2525815	10.444	93	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1541359	13.235	1610233	13.223	96	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1165853	15.491	1271242	15.485	92	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67497
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (1G26016-MSD1)			Lab File ID: 215GU027.D			Analyzed: 07/26/21 19:51			
Pentafluorobenzene	1032133	9.863	1101889	9.851	94	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2471299	10.456	2525815	10.444	98	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1575361	13.235	1610233	13.223	98	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1209368	15.491	1271242	15.485	95	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67513
Instrument: OVGCMS2
Matrix: Water
Calibration: 2107025

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA67513-CCV1)			Lab File ID: 212GV002.D			Analyzed: 07/27/21 07:40			
Pentafluorobenzene	169573	11.48	193062	11.49	88	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	324590	12.04	330090	12.04	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	165365	14.62	152465	14.63	108	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	149824	16.99	126714	17	118	50 - 200	-0.0100	+/-0.50	
LCS (1G27015-BS1)			Lab File ID: 212GV003.D			Analyzed: 07/27/21 08:09			
Pentafluorobenzene	182262	11.48	193062	11.49	94	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	339603	12.03	330090	12.04	103	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	170540	14.62	152465	14.63	112	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	145434	16.98	126714	17	115	50 - 200	-0.0200	+/-0.50	
Blank (1G27015-BLK1)			Lab File ID: 212GV005.D			Analyzed: 07/27/21 09:07			
Pentafluorobenzene	176714	11.48	193062	11.49	92	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	327495	12.03	330090	12.04	99	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	162085	14.62	152465	14.63	106	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	137408	16.99	126714	17	108	50 - 200	-0.0100	+/-0.50	
Matrix Spike (1G27015-MS1)			Lab File ID: 212GV011.D			Analyzed: 07/27/21 11:59			
Pentafluorobenzene	166346	11.48	193062	11.49	86	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	311370	12.03	330090	12.04	94	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	159192	14.62	152465	14.63	104	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	138557	16.99	126714	17	109	50 - 200	-0.0100	+/-0.50	
Matrix Spike Dup (1G27015-MSD1)			Lab File ID: 212GV012.D			Analyzed: 07/27/21 12:28			
Pentafluorobenzene	162481	11.48	193062	11.49	84	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	304077	12.03	330090	12.04	92	50 - 200	-0.0100	+/-0.50	
Chlorobenzene-d5	155274	14.62	152465	14.63	102	50 - 200	-0.0100	+/-0.50	
1,4-Dichlorobenzene-d4	134388	16.99	126714	17	106	50 - 200	-0.0100	+/-0.50	
HMPN-MW0042-042.5-20210721 (AE05878-12RE1)			Lab File ID: 212GV020.D			Analyzed: 07/27/21 16:18			
Pentafluorobenzene	172924	11.48	193062	11.49	90	50 - 200	-0.0100	+/-0.50	
1,4-Difluorobenzene	323031	12.04	330090	12.04	98	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	163079	14.63	152465	14.63	107	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	135643	16.99	126714	17	107	50 - 200	-0.0100	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Sequence: AA67520
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA67520-CCV1)			Lab File ID: 215GV002.D			Analyzed: 07/27/21 08:02			
Pentafluorobenzene	1102000	9.857	1101889	9.851	100	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2569272	10.456	2525815	10.444	102	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1689287	13.235	1610233	13.223	105	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1269237	15.491	1271242	15.485	100	50 - 200	0.0060	+/-0.50	
LCS (1G27016-BS1)			Lab File ID: 215GV003.D			Analyzed: 07/27/21 08:38			
Pentafluorobenzene	1079201	9.857	1101889	9.851	98	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2646304	10.456	2525815	10.444	105	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1669456	13.235	1610233	13.223	104	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1259086	15.491	1271242	15.485	99	50 - 200	0.0060	+/-0.50	
Blank (1G27016-BLK1)			Lab File ID: 215GV005.D			Analyzed: 07/27/21 09:34			
Pentafluorobenzene	1024672	9.857	1101889	9.851	93	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2497844	10.45	2525815	10.444	99	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1573333	13.229	1610233	13.223	98	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1175358	15.491	1271242	15.485	92	50 - 200	0.0060	+/-0.50	
HMPN-MW0047-025.0-20210720 (AE05878-04RE1)			Lab File ID: 215GV008.D			Analyzed: 07/27/21 10:58			
Pentafluorobenzene	1006516	9.857	1101889	9.851	91	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2417256	10.45	2525815	10.444	96	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1490343	13.229	1610233	13.223	93	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1149390	15.491	1271242	15.485	90	50 - 200	0.0060	+/-0.50	
HMPN-MW0044-042.5-20210721 (AE05878-14RE1)			Lab File ID: 215GV009.D			Analyzed: 07/27/21 11:26			
Pentafluorobenzene	1021883	9.857	1101889	9.851	93	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2461273	10.45	2525815	10.444	97	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1486821	13.229	1610233	13.223	92	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1153112	15.486	1271242	15.485	91	50 - 200	0.0010	+/-0.50	
HMPN-MW0016-010.0-20210722 (AE05878-19RE1)			Lab File ID: 215GV010.D			Analyzed: 07/27/21 11:54			
Pentafluorobenzene	982461	9.856	1101889	9.851	89	50 - 200	0.0050	+/-0.50	
1,4-Difluorobenzene	2432872	10.45	2525815	10.444	96	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1476258	13.229	1610233	13.223	92	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1113894	15.491	1271242	15.485	88	50 - 200	0.0060	+/-0.50	
HMPN-MW0029-015.0-20210722 (AE05878-20)			Lab File ID: 215GV011.D			Analyzed: 07/27/21 12:22			
Pentafluorobenzene	997993	9.857	1101889	9.851	91	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2352240	10.45	2525815	10.444	93	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1479895	13.229	1610233	13.223	92	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1113688	15.491	1271242	15.485	88	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67520
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HMPN-MW0030-025.0-20210722 (AE05878-21)			Lab File ID: 215GV012.D			Analyzed: 07/27/21 12:50			
Pentafluorobenzene	981758	9.857	1101889	9.851	89	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2345798	10.45	2525815	10.444	93	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1476676	13.229	1610233	13.223	92	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1102173	15.491	1271242	15.485	87	50 - 200	0.0060	+/-0.50	
HMPN-MW0031-035.0-20210722 (AE05878-22)			Lab File ID: 215GV013.D			Analyzed: 07/27/21 13:19			
Pentafluorobenzene	950478	9.857	1101889	9.851	86	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2306620	10.45	2525815	10.444	91	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1478763	13.229	1610233	13.223	92	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1134717	15.491	1271242	15.485	89	50 - 200	0.0060	+/-0.50	
HMPN-MW0032-042.5-20210722 (AE05878-23)			Lab File ID: 215GV014.D			Analyzed: 07/27/21 13:47			
Pentafluorobenzene	998529	9.862	1101889	9.851	91	50 - 200	0.0110	+/-0.50	
1,4-Difluorobenzene	2331984	10.45	2525815	10.444	92	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1476470	13.229	1610233	13.223	92	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1135730	15.491	1271242	15.485	89	50 - 200	0.0060	+/-0.50	
HMPN-MW0033-047.5-20210722 (AE05878-24)			Lab File ID: 215GV015.D			Analyzed: 07/27/21 14:15			
Pentafluorobenzene	961116	9.857	1101889	9.851	87	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2253705	10.45	2525815	10.444	89	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1448868	13.229	1610233	13.223	90	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1129347	15.491	1271242	15.485	89	50 - 200	0.0060	+/-0.50	
HMPN-MW0008-025.0-20210722 (AE05878-25)			Lab File ID: 215GV016.D			Analyzed: 07/27/21 14:43			
Pentafluorobenzene	962990	9.863	1101889	9.851	87	50 - 200	0.0120	+/-0.50	
1,4-Difluorobenzene	2341975	10.45	2525815	10.444	93	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1442939	13.229	1610233	13.223	90	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1103190	15.491	1271242	15.485	87	50 - 200	0.0060	+/-0.50	
HMPN-MW0024-060.0-20210722 (AE05878-26)			Lab File ID: 215GV017.D			Analyzed: 07/27/21 15:11			
Pentafluorobenzene	977353	9.857	1101889	9.851	89	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2348600	10.45	2525815	10.444	93	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1465304	13.229	1610233	13.223	91	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1112194	15.491	1271242	15.485	87	50 - 200	0.0060	+/-0.50	
HMPN-MW0004-010.0-20210722 (AE05878-28)			Lab File ID: 215GV019.D			Analyzed: 07/27/21 16:07			
Pentafluorobenzene	954047	9.856	1101889	9.851	87	50 - 200	0.0050	+/-0.50	
1,4-Difluorobenzene	2316991	10.45	2525815	10.444	92	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1444997	13.229	1610233	13.223	90	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1086029	15.491	1271242	15.485	85	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67520
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Matrix Spike (1G27016-MS1)			Lab File ID: 215GV024.D			Analyzed: 07/27/21 18:28			
Pentafluorobenzene	980087	9.857	1101889	9.851	89	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2366093	10.45	2525815	10.444	94	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1510186	13.229	1610233	13.223	94	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1158475	15.491	1271242	15.485	91	50 - 200	0.0060	+/-0.50	
Matrix Spike Dup (1G27016-MSD1)			Lab File ID: 215GV025.D			Analyzed: 07/27/21 18:56			
Pentafluorobenzene	1025902	9.857	1101889	9.851	93	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2409457	10.456	2525815	10.444	95	50 - 200	0.0120	+/-0.50	
Chlorobenzene-d5	1551003	13.235	1610233	13.223	96	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	1153393	15.491	1271242	15.485	91	50 - 200	0.0060	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67540
Instrument: OVGCMS5
Matrix: Water
Calibration: 2106098

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (AA67540-CCV1)			Lab File ID: 215GW003.D			Analyzed: 07/28/21 08:24			
Pentafluorobenzene	1146370	9.857	1101889	9.851	104	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2613862	10.45	2525815	10.444	103	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1696790	13.229	1610233	13.223	105	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1272980	15.491	1271242	15.485	100	50 - 200	0.0060	+/-0.50	
LCS (1G28012-BS1)			Lab File ID: 215GW004.D			Analyzed: 07/28/21 08:52			
Pentafluorobenzene	1095048	9.857	1101889	9.851	99	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2655898	10.45	2525815	10.444	105	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1705509	13.229	1610233	13.223	106	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1278565	15.485	1271242	15.485	101	50 - 200	0.0000	+/-0.50	
Instrument RL Check (AA67540-CRL1)			Lab File ID: 215GW005.D			Analyzed: 07/28/21 09:20			
Pentafluorobenzene	1105421	9.857	1101889	9.851	100	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2599785	10.45	2525815	10.444	103	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1608323	13.229	1610233	13.223	100	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1192315	15.491	1271242	15.485	94	50 - 200	0.0060	+/-0.50	
Blank (1G28012-BLK1)			Lab File ID: 215GW006.D			Analyzed: 07/28/21 09:48			
Pentafluorobenzene	1058005	9.857	1101889	9.851	96	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2459389	10.45	2525815	10.444	97	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1530623	13.229	1610233	13.223	95	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1152122	15.485	1271242	15.485	91	50 - 200	0.0000	+/-0.50	
HMPN-MW0032-042.5-20210722 (AE05878-23RE1)			Lab File ID: 215GW014.D			Analyzed: 07/28/21 13:33			
Pentafluorobenzene	963403	9.857	1101889	9.851	87	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2267640	10.45	2525815	10.444	90	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1448145	13.229	1610233	13.223	90	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1108052	15.485	1271242	15.485	87	50 - 200	0.0000	+/-0.50	
HMPN-MW0002-035.0-20210722 (AE05878-27RE1)			Lab File ID: 215GW015.D			Analyzed: 07/28/21 14:01			
Pentafluorobenzene	965575	9.857	1101889	9.851	88	50 - 200	0.0060	+/-0.50	
1,4-Difluorobenzene	2323932	10.45	2525815	10.444	92	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1457980	13.229	1610233	13.223	91	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1115863	15.491	1271242	15.485	88	50 - 200	0.0060	+/-0.50	
Matrix Spike (1G28012-MS1)			Lab File ID: 215GW026.D			Analyzed: 07/28/21 19:08			
Pentafluorobenzene	997249	9.856	1101889	9.851	91	50 - 200	0.0050	+/-0.50	
1,4-Difluorobenzene	2338476	10.45	2525815	10.444	93	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	1494708	13.229	1610233	13.223	93	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	1150265	15.491	1271242	15.485	90	50 - 200	0.0060	+/-0.50	

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA66932		
Calibration:	2106098	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA66932-TUN1	215FM003.D	06/18/21 07:34
Cal Standard	AA66932-CAL1	215FM004.D	06/18/21 08:05
Cal Standard	AA66932-CAL2	215FM005.D	06/18/21 08:32
Cal Standard	AA66932-CAL3	215FM006.D	06/18/21 09:00
Cal Standard	AA66932-CAL4	215FM007.D	06/18/21 09:28
Cal Standard	AA66932-CAL5	215FM008.D	06/18/21 09:56
Cal Standard	AA66932-CAL6	215FM009.D	06/18/21 10:24
Cal Standard	AA66932-CAL7	215FM010.D	06/18/21 10:52
Cal Standard	AA66932-CAL8	215FM011.D	06/18/21 11:20
Secondary Cal Check	AA66932-SCV1	215FM013.D	06/18/21 12:15

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA67203		
Calibration:	2107025	Instrument:	OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA67203-TUN1	212GB001.D	07/07/21 07:58
Cal Standard	AA67203-CAL1	212GB002.D	07/07/21 08:38
Cal Standard	AA67203-CAL2	212GB003.D	07/07/21 09:12
Cal Standard	AA67203-CAL3	212GB004.D	07/07/21 09:45
Cal Standard	AA67203-CAL4	212GB005.D	07/07/21 10:20
Cal Standard	AA67203-CAL5	212GB006.D	07/07/21 10:49
Cal Standard	AA67203-CAL6	212GB007.D	07/07/21 11:23
Cal Standard	AA67203-CAL7	212GB008.D	07/07/21 11:52
Cal Standard	AA67203-CAL8	212GB009.D	07/07/21 12:20
Secondary Cal Check	AA67203-SCV1	212GB012.D	07/07/21 13:51

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Sequence: AA67497
Calibration: 2106098
Instrument: OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA67497-CCV1	215GU003.D	07/26/21 08:35
LCS	1G26016-BS1	215GU004.D	07/26/21 09:06
Instrument RL Check	AA67497-CRL1	215GU005.D	07/26/21 09:34
Blank	1G26016-BLK1	215GU006.D	07/26/21 10:02
HMPN-MW0038-020.0-20210720	AE05878-02	215GU007.D	07/26/21 10:30
HMPN-MW0037-010.0-20210720	AE05878-01	215GU008.D	07/26/21 10:58
HMPN-MW0046-015.0-20210720	AE05878-03	215GU009.D	07/26/21 11:26
HMPN-MW0039-035.0-20210720	AE05878-05	215GU011.D	07/26/21 12:22
HMPN-MW0040-042.5-20210720	AE05878-06	215GU012.D	07/26/21 12:50
HMPN-MW0027-042.5-20210720	AE05878-07	215GU013.D	07/26/21 13:18
HMPN-MW0028-047.5-20210720	AE05878-08	215GU014.D	07/26/21 13:46
HMPN-MW0045-030.0-20210721	AE05878-09	215GU015.D	07/26/21 14:14
HMPN-MW0036-015.0-20210721	AE05878-10	215GU016.D	07/26/21 14:42
HMPN-MW0041-035.0-20210721	AE05878-11	215GU017.D	07/26/21 15:10
HMPN-MW0042-042.5-20210721	AE05878-12	215GU018.D	07/26/21 15:38
HMPN-MW0043-035.0-20210721	AE05878-13	215GU019.D	07/26/21 16:07
HMPN-MW0011-025.0-20210721	AE05878-15	215GU021.D	07/26/21 17:03
HMPN-MW0009-010.8-20210721	AE05878-16	215GU022.D	07/26/21 17:31
HMPN-MW0034-015.0-20210721	AE05878-17	215GU023.D	07/26/21 17:59
HMPN-MW0035-035.0-20210721	AE05878-18	215GU024.D	07/26/21 18:27
HMPN-MW0038-020.0-20210720	1G26016-MS1	215GU026.D	07/26/21 19:23
HMPN-MW0038-020.0-20210720	1G26016-MSD1	215GU027.D	07/26/21 19:51

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA67513		
Calibration:	2107025	Instrument:	OVGCMS2

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	AA67513-TUN1	212GV001.D	07/27/21 07:09
Calibration Check	AA67513-CCV1	212GV002.D	07/27/21 07:40
LCS	1G27015-BS1	212GV003.D	07/27/21 08:09
Blank	1G27015-BLK1	212GV005.D	07/27/21 09:07
ARS21-9635 Punta Gorda Corp. Roll-off	1G27015-MS1	212GV011.D	07/27/21 11:59
ARS21-9635 Punta Gorda Corp. Roll-off	1G27015-MSD1	212GV012.D	07/27/21 12:28
HMPN-MW0042-042.5-20210721	AE05878-12RE1	212GV020.D	07/27/21 16:18

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA67520		
Calibration:	2106098	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA67520-CCV1	215GV002.D	07/27/21 08:02
LCS	1G27016-BS1	215GV003.D	07/27/21 08:38
Blank	1G27016-BLK1	215GV005.D	07/27/21 09:34
HMPN-MW0047-025.0-20210720	AE05878-04RE1	215GV008.D	07/27/21 10:58
HMPN-MW0044-042.5-20210721	AE05878-14RE1	215GV009.D	07/27/21 11:26
HMPN-MW0016-010.0-20210722	AE05878-19RE1	215GV010.D	07/27/21 11:54
HMPN-MW0029-015.0-20210722	AE05878-20	215GV011.D	07/27/21 12:22
HMPN-MW0030-025.0-20210722	AE05878-21	215GV012.D	07/27/21 12:50
HMPN-MW0031-035.0-20210722	AE05878-22	215GV013.D	07/27/21 13:19
HMPN-MW0032-042.5-20210722	AE05878-23	215GV014.D	07/27/21 13:47
HMPN-MW0033-047.5-20210722	AE05878-24	215GV015.D	07/27/21 14:15
HMPN-MW0008-025.0-20210722	AE05878-25	215GV016.D	07/27/21 14:43
HMPN-MW0024-060.0-20210722	AE05878-26	215GV017.D	07/27/21 15:11
HMPN-MW0004-010.0-20210722	AE05878-28	215GV019.D	07/27/21 16:07
CRCA-ASINFLUENT-20210723	1G27016-MS1	215GV024.D	07/27/21 18:28
CRCA-ASINFLUENT-20210723	1G27016-MSD1	215GV025.D	07/27/21 18:56

ANALYSIS BATCH (SEQUENCE) SUMMARY

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA67540		
Calibration:	2106098	Instrument:	OVGCMS5

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	AA67540-CCV1	215GW003.D	07/28/21 08:24
LCS	1G28012-BS1	215GW004.D	07/28/21 08:52
Instrument RL Check	AA67540-CRL1	215GW005.D	07/28/21 09:20
Blank	1G28012-BLK1	215GW006.D	07/28/21 09:48
HMPN-MW0032-042.5-20210722	AE05878-23RE1	215GW014.D	07/28/21 13:33
HMPN-MW0002-035.0-20210722	AE05878-27RE1	215GW015.D	07/28/21 14:01
CRCA-MW0002-032.5-20210726	1G28012-MS1	215GW026.D	07/28/21 19:08

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	215FM003.D	Injection Date:	06/18/21
Instrument ID:	OVGCMS5	Injection Time:	07:34
Sequence:	AA66932	Lab Sample ID:	AA66932-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	191	PASS
96	5 - 9% of 95	7.06	PASS
173	Less than 2% of 174	0.214	PASS
174	50 - 200% of 95	52.3	PASS
175	5 - 9% of 174	5.23	PASS
176	95 - 105% of 174	95.8	PASS
177	5 - 10% of 176	6.95	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	212GB001.D	Injection Date:	07/07/21
Instrument ID:	OVGCMS2	Injection Time:	07:58
Sequence:	AA67203	Lab Sample ID:	AA67203-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	133	PASS
96	5 - 9% of 95	6.97	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	75.2	PASS
175	5 - 9% of 174	7.67	PASS
176	95 - 105% of 174	97.7	PASS
177	5 - 10% of 176	6.56	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Lab File ID:	212GV001.D	Injection Date:	07/27/21
Instrument ID:	OVGCMS2	Injection Time:	07:09
Sequence:	AA67513	Lab Sample ID:	AA67513-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
95	50 - 200% of 174	140	PASS
96	5 - 9% of 95	7.06	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	71.3	PASS
175	5 - 9% of 174	7.54	PASS
176	95 - 105% of 174	96.8	PASS
177	5 - 10% of 176	6.41	PASS

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS5	Calibration:	2106098
Lab File ID:	215GU003.D	Calibration Date:	06/18/21 08:08
Sequence:	AA67497	Injection Date:	07/26/21
Lab Sample ID:	AA67497-CCV1	Injection Time:	08:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Dichlorodifluoromethane	A	20.0	26	0.5094763	0.6774788		32	20 *
Chloromethane	A	20.0	25	0.7825336	0.941795		23	20 *
Vinyl chloride	A	20.0	22	0.6650027	0.7339248		10	20
Bromomethane	A	20.0	33	0.2460614	0.2970314		66	20 *
Chloroethane	A	20.0	14	0.3880182	0.2563112		-32	20 *
Trichlorofluoromethane	A	20.0	20	0.7609833	0.7766521		2.1	20
Freon 113	A	50.0	44	0.3222191	0.2818663		-13	20
1,1-Dichloroethene	A	50.0	45	0.5314554	0.4754634		-11	20
trans-1,2-Dichloroethene	A	50.0	50	0.6064423	0.6041769		-0.4	20
cis-1,2-Dichloroethene	A	50.0	55	0.6549615	0.7219516		10	20
1,1-Dichloroethane	A	50.0	52	1.152866	1.197281		3.9	20
Chloroform	A	50.0	53	1.100938	1.159348		5.3	20
1,1,1-Trichloroethane	A	50.0	52	0.8164118	0.8534745		4.5	20
Carbon Tetrachloride	A	50.0	49	0.285844	0.2816167		-1.5	20
1,2-Dichloroethane	A	50.0	48	0.3513194	0.3378324		-3.8	20
Trichloroethene	A	50.0	52	0.2450156	0.2548138		4.0	20
1,2-Dichloropropane	A	50.0	53	0.3371891	0.3606198		6.9	20
Bromodichloromethane	A	50.0	55	0.3308186	0.3670961		11	20
cis-1,3-Dichloropropene	A	50.0	58	0.4967443	0.5716252		15	20
trans-1,3-Dichloropropene	A	50.0	56	0.6187986	0.6955882		12	20
1,1,2-Trichloroethane	A	50.0	54	0.420744	0.4533374		7.7	20
Tetrachloroethene	A	50.0	49	0.2798147	0.2759994		-1.4	20
Dibromochloromethane	A	50.0	52	0.3204024	0.3886478		3.7	20
1,2-Dibromoethane	A	50.0	54	0.4215299	0.4528204		7.4	20
Chlorobenzene	A	50.0	52	1.214708	1.273428		4.8	20
Bromoform	A	50.0	51	0.175043	0.219026		2.5	20
1,1,2,2-Tetrachloroethane	A	50.0	56	0.7197231	0.8121856		13	20
1,2,4-Trichlorobenzene	A	50.0	59	0.2087952	0.3047224		18	20
1,3-Dichlorobenzene	A	50.0	54	1.132817	1.214701		7.2	20

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS5	Calibration:	2106098
Lab File ID:	215GU003.D	Calibration Date:	06/18/21 08:08
Sequence:	AA67497	Injection Date:	07/26/21
Lab Sample ID:	AA67497-CCV1	Injection Time:	08:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
1,4-Dichlorobenzene	A	50.0	52	1.174038	1.222187		4.1	20	
1,2-Dichlorobenzene	A	50.0	52	1.038218	1.142219		4.5	20	
1,2-Dibromo-3-chloropropane	A	50.0	61	0.1005424	0.1389665		22	20	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS2	Calibration:	2107025
Lab File ID:	212GV002.D	Calibration Date:	07/07/21 00:00
Sequence:	AA67513	Injection Date:	07/27/21
Lab Sample ID:	AA67513-CCV1	Injection Time:	07:40

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	25	0.8144609	1.00498		23	20	*
Chloromethane	A	20.0	24	1.0402	1.192495		19	20	
Vinyl chloride	A	20.0	23	0.8035139	0.8953224		14	20	
Bromomethane	A	20.0	25	0.4826353	0.4496294		23	20	*
Chloroethane	A	20.0	26	0.4157574	0.4599347		30	20	*
Trichlorofluoromethane	A	20.0	22	0.7331526	0.7980339		8.8	20	
Freon 113	A	50.0	53	0.4738214	0.4980451		5.1	20	
1,1-Dichloroethene	A	50.0	51	0.4934686	0.4529672		1.2	20	
trans-1,2-Dichloroethene	A	50.0	51	0.538907	0.547599		1.6	20	
cis-1,2-Dichloroethene	A	50.0	54	0.5813479	0.6276766		8.0	20	
1,1-Dichloroethane	A	50.0	56	0.9793809	1.093535		12	20	
Chloroform	A	50.0	57	0.9229288	1.049377		14	20	
1,1,1-Trichloroethane	A	50.0	58	0.7054439	0.8177835		16	20	
Carbon Tetrachloride	A	50.0	52	0.432947	0.4506824		4.1	20	
1,2-Dichloroethane	A	50.0	52	0.4166106	0.4336394		4.1	20	
Trichloroethene	A	50.0	53	0.3305369	0.3505499		6.1	20	
1,2-Dichloropropane	A	50.0	47	0.3604394	0.3411226		-5.4	20	
Bromodichloromethane	A	50.0	50	0.4205315	0.4167319		-0.9	20	
cis-1,3-Dichloropropene	A	50.0	50	0.5877535	0.5862226		-0.3	20	
trans-1,3-Dichloropropene	A	50.0	45	1.055085	0.9488465		-10	20	
1,1,2-Trichloroethane	A	50.0	43	0.600747	0.517026		-14	20	
Tetrachloroethene	A	50.0	43	0.5170224	0.4424213		-14	20	
Dibromochloromethane	A	50.0	46	0.8177395	0.7493847		-8.4	20	
1,2-Dibromoethane	A	50.0	46	0.6978063	0.6443806		-7.7	20	
Chlorobenzene	A	50.0	47	1.670897	1.557754		-6.8	20	
Bromoform	A	50.0	44	0.4537515	0.4009494		-12	20	
1,1,2,2-Tetrachloroethane	A	50.0	42	0.7928662	0.6585372		-17	20	
1,2,4-Trichlorobenzene	A	50.0	40	0.642641	0.5150443		-20	20	
1,3-Dichlorobenzene	A	50.0	44	1.445157	1.267714		-12	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS2	Calibration:	2107025
Lab File ID:	212GV002.D	Calibration Date:	07/07/21 00:00
Sequence:	AA67513	Injection Date:	07/27/21
Lab Sample ID:	AA67513-CCV1	Injection Time:	07:40

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
1,4-Dichlorobenzene	A	50.0	44	1.478644	1.304224		-12	20	
1,2-Dichlorobenzene	A	50.0	44	1.368364	1.207777		-12	20	
1,2-Dibromo-3-chloropropane	A	50.0	39	0.1598436	0.0987225		-22	20	*

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS5	Calibration:	2106098
Lab File ID:	215GV002.D	Calibration Date:	06/18/21 08:08
Sequence:	AA67520	Injection Date:	07/27/21
Lab Sample ID:	AA67520-CCV1	Injection Time:	08:02

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	26	0.5094763	0.661529		29	20	*
Chloromethane	A	20.0	24	0.7825336	0.9051792		18	20	
Vinyl chloride	A	20.0	21	0.6650027	0.69451		4.4	20	
Bromomethane	A	20.0	42	0.2460614	0.3788816		110	20	*
Chloroethane	A	20.0	19	0.3880182	0.3515449		-3.6	20	
Trichlorofluoromethane	A	20.0	21	0.7609833	0.7885572		3.6	20	
Freon 113	A	50.0	40	0.3222191	0.258922		-20	20	
1,1-Dichloroethene	A	50.0	42	0.5314554	0.4423648		-17	20	
trans-1,2-Dichloroethene	A	50.0	47	0.6064423	0.5711425		-5.8	20	
cis-1,2-Dichloroethene	A	50.0	53	0.6549615	0.6980889		6.6	20	
1,1-Dichloroethane	A	50.0	50	1.152866	1.150461		-0.2	20	
Chloroform	A	50.0	51	1.100938	1.120191		1.7	20	
1,1,1-Trichloroethane	A	50.0	52	0.8164118	0.8560989		4.9	20	
Carbon Tetrachloride	A	50.0	48	0.285844	0.2716723		-5	20	
1,2-Dichloroethane	A	50.0	47	0.3513194	0.3286577		-6.5	20	
Trichloroethene	A	50.0	51	0.2450156	0.2485856		1.5	20	
1,2-Dichloropropane	A	50.0	50	0.3371891	0.3378424		0.20	20	
Bromodichloromethane	A	50.0	53	0.3308186	0.3515801		6.3	20	
cis-1,3-Dichloropropene	A	50.0	54	0.4967443	0.5337442		7.4	20	
trans-1,3-Dichloropropene	A	50.0	53	0.6187986	0.6507177		5.2	20	
1,1,2-Trichloroethane	A	50.0	50	0.420744	0.4248461		1.0	20	
Tetrachloroethene	A	50.0	48	0.2798147	0.2669292		-4.6	20	
Dibromochloromethane	A	50.0	48	0.3204024	0.3577166		-4.5	20	
1,2-Dibromoethane	A	50.0	51	0.4215299	0.4260513		1.1	20	
Chlorobenzene	A	50.0	49	1.214708	1.197018		-1.5	20	
Bromoform	A	50.0	47	0.175043	0.2003064		-6.2	20	
1,1,2,2-Tetrachloroethane	A	50.0	52	0.7197231	0.7514685		4.4	20	
1,2,4-Trichlorobenzene	A	50.0	50	0.2087952	0.2482759		0.50	20	
1,3-Dichlorobenzene	A	50.0	52	1.132817	1.186722		4.8	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS5	Calibration:	2106098
Lab File ID:	215GV002.D	Calibration Date:	06/18/21 08:08
Sequence:	AA67520	Injection Date:	07/27/21
Lab Sample ID:	AA67520-CCV1	Injection Time:	08:02

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,4-Dichlorobenzene	A	50.0	51	1.174038	1.192889		1.6	20
1,2-Dichlorobenzene	A	50.0	49	1.038218	1.071853		-1.9	20
1,2-Dibromo-3-chloropropane	A	50.0	51	0.1005424	0.1115387		2.7	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS5	Calibration:	2106098
Lab File ID:	215GW003.D	Calibration Date:	06/18/21 08:08
Sequence:	AA67540	Injection Date:	07/28/21
Lab Sample ID:	AA67540-CCV1	Injection Time:	08:24

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Dichlorodifluoromethane	A	20.0	25	0.5094763	0.6361602		24	20	*
Chloromethane	A	20.0	22	0.7825336	0.8585012		12	20	
Vinyl chloride	A	20.0	21	0.6650027	0.6942239		4.4	20	
Bromomethane	A	20.0	33	0.2460614	0.2897756		63	20	*
Chloroethane	A	20.0	13	0.3880182	0.2387689		-37	20	*
Trichlorofluoromethane	A	20.0	19	0.7609833	0.7073349		-7	20	
Freon 113	A	50.0	41	0.3222191	0.2611024		-19	20	
1,1-Dichloroethene	A	50.0	41	0.5314554	0.4331734		-19	20	
trans-1,2-Dichloroethene	A	50.0	47	0.6064423	0.570055		-6	20	
cis-1,2-Dichloroethene	A	50.0	52	0.6549615	0.6817677		4.1	20	
1,1-Dichloroethane	A	50.0	49	1.152866	1.134178		-1.6	20	
Chloroform	A	50.0	50	1.100938	1.099845		-0.1	20	
1,1,1-Trichloroethane	A	50.0	50	0.8164118	0.8233476		0.80	20	
Carbon Tetrachloride	A	50.0	56	0.285844	0.3209668		12	20	
1,2-Dichloroethane	A	50.0	47	0.3513194	0.3335628		-5.1	20	
Trichloroethene	A	50.0	49	0.2450156	0.2385757		-2.6	20	
1,2-Dichloropropane	A	50.0	50	0.3371891	0.3378927		0.20	20	
Bromodichloromethane	A	50.0	53	0.3308186	0.3537612		6.9	20	
cis-1,3-Dichloropropene	A	50.0	54	0.4967443	0.5404076		8.8	20	
trans-1,3-Dichloropropene	A	50.0	54	0.6187986	0.6736721		8.9	20	
1,1,2-Trichloroethane	A	50.0	49	0.420744	0.416312		-1.1	20	
Tetrachloroethene	A	50.0	47	0.2798147	0.2630314		-6	20	
Dibromochloromethane	A	50.0	49	0.3204024	0.365146		-2.5	20	
1,2-Dibromoethane	A	50.0	50	0.4215299	0.4232227		0.40	20	
Chlorobenzene	A	50.0	50	1.214708	1.207261		-0.6	20	
Bromoform	A	50.0	49	0.175043	0.2084601		-2.4	20	
1,1,2,2-Tetrachloroethane	A	50.0	53	0.7197231	0.7629312		6.0	20	
1,2,4-Trichlorobenzene	A	50.0	58	0.2087952	0.2989646		16	20	
1,3-Dichlorobenzene	A	50.0	52	1.132817	1.185287		4.6	20	

CONTINUING CALIBRATION CHECK

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Instrument ID:	OVGCMS5	Calibration:	2106098
Lab File ID:	215GW003.D	Calibration Date:	06/18/21 08:08
Sequence:	AA67540	Injection Date:	07/28/21
Lab Sample ID:	AA67540-CCV1	Injection Time:	08:24

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
1,4-Dichlorobenzene	A	50.0	51	1.174038	1.20361		2.5	20
1,2-Dichlorobenzene	A	50.0	51	1.038218	1.111954		1.7	20
1,2-Dibromo-3-chloropropane	A	50.0	58	0.1005424	0.1301403		16	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA66932	Instrument:	OVGCMS5
Calibration:	2106098		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A1B1159	MS Tune (lower conc.)	AA66932-TUN1	215FM003.D	06/18/21 07:34
A1F0975	8260 1.0 PPB ms5	AA66932-CAL1	215FM004.D	06/18/21 08:05
A1F0976	8260 2.0 PPB ms5	AA66932-CAL2	215FM005.D	06/18/21 08:32
A1F0977	8260 5.0 PPB ms5	AA66932-CAL3	215FM006.D	06/18/21 09:00
A1F0978	8260 10 PPB ms5	AA66932-CAL4	215FM007.D	06/18/21 09:28
A1F0979	8260 20 PPB ms5	AA66932-CAL5	215FM008.D	06/18/21 09:56
A1F0980	8260 50 PPB ms5	AA66932-CAL6	215FM009.D	06/18/21 10:24
A1F0981	8260 80 PPB ms5	AA66932-CAL7	215FM010.D	06/18/21 10:52
A1F0982	8260 100 PPB ms5	AA66932-CAL8	215FM011.D	06/18/21 11:20
A1F0991	8260 SCV 50 PPB/20 gases (surr. lower conc.)	AA66932-SCV1	215FM013.D	06/18/21 12:15

INITIAL CALIBRATION STANDARDS

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Sequence:	AA67203	Instrument:	OVGCMS2
Calibration:	2107025		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
A1B1157	MS Tune	AA67203-TUN1	212GB001.D	07/07/21 07:58
A1G0352	8260 1.0 PPB	AA67203-CAL1	212GB002.D	07/07/21 08:38
A1G0357	8260 2.0 PPB	AA67203-CAL2	212GB003.D	07/07/21 09:12
A1G0358	8260 5.0 PPB	AA67203-CAL3	212GB004.D	07/07/21 09:45
A1G0360	8260 10 PPB	AA67203-CAL4	212GB005.D	07/07/21 10:20
A1G0361	8260 20 PPB	AA67203-CAL5	212GB006.D	07/07/21 10:49
A1G0362	8260 50 PPB	AA67203-CAL6	212GB007.D	07/07/21 11:23
A1G0363	8260 80 PPB	AA67203-CAL7	212GB008.D	07/07/21 11:52
A1G0364	8260 100 PPB	AA67203-CAL8	212GB009.D	07/07/21 12:20
A1G0391	8260 SCV 50 PPB	AA67203-SCV1	212GB012.D	07/07/21 13:51

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2106098
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 06/18/21 08:08

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	0.5444762	2	0.4223063	5	0.5914354	10	0.4929725	20	0.4782643	50	0.5144729
Chloromethane	1	1.059332	2	0.6707638	5	0.8644306	10	0.7204098	20	0.7205409	50	0.6904153
Vinyl chloride	1	0.775862	2	0.5365335	5	0.6922473	10	0.650021	20	0.6440319	50	0.6499421
Bromomethane	1	0.3234076	2	0.3255129	5	0.3281328	10	0.219142	20	0.182968	50	0.1756765
Chloroethane	1	0.5053711	2	0.3404387	5	0.4826976	10	0.340112	20	0.3719102	50	0.2875798
Trichlorofluoromethane	1	0.7781085	2	0.6195022	5	0.8260138	10	0.7531864	20	0.7735416	50	0.7678532
Freon 113	1	0.2607978	2	0.3637858	5	0.3770729	10	0.3089054	20	0.3269222	50	0.3197173
1,1-Dichloroethene	1	0.4355227	2	0.5684854	5	0.5852284	10	0.4930696	20	0.527627	50	0.5515247
trans-1,2-Dichloroethene	1	0.4844873	2	0.6339387	5	0.7476141	10	0.5671123	20	0.6072805	50	0.6066591
cis-1,2-Dichloroethene	1	0.5911944	2	0.6827126	5	0.6306257	10	0.6005607	20	0.6701389	50	0.6974786
1,1-Dichloroethane	1	0.9991355	2	1.197143	5	1.248112	10	1.143127	20	1.182508	50	1.151263
Chloroform	1	0.9484237	2	1.219878	5	1.187922	10	1.043696	20	1.126225	50	1.095959
1,1,1-Trichloroethane	1	0.6124942	2	0.8466313	5	0.8294324	10	0.8444389	20	0.8295007	50	0.8605141
Carbon Tetrachloride	1	0.2938125	2	0.272744	5	0.2453059	10	0.2456946	20	0.3170405	50	0.2849243
1,2-Dichloroethane	1	0.3728822	2	0.3760035	5	0.354193	10	0.3600144	20	0.3324898	50	0.3267591
Trichloroethene	1	0.1995915	2	0.2675143	5	0.2457729	10	0.2576097	20	0.2522099	50	0.247163
1,2-Dichloropropane	1	0.3317094	2	0.3444437	5	0.3345588	10	0.3309305	20	0.32462	50	0.3363809
Bromodichloromethane	1	0.2784006	2	0.3158437	5	0.3279466	10	0.3133996	20	0.3348848	50	0.3464648
cis-1,3-Dichloropropene	1	0.3791549	2	0.4859364	5	0.4863015	10	0.482609	20	0.5082976	50	0.531607
trans-1,3-Dichloropropene	1	0.5121762	2	0.6622446	5	0.6454576	10	0.5523355	20	0.6458741	50	0.6536197
1,1,2-Trichloroethane	1	0.3809597	2	0.4742446	5	0.4274421	10	0.3892404	20	0.4263599	50	0.4245764
Tetrachloroethene	1	0.2623334	2	0.3509024	5	0.3066935	10	0.246393	20	0.2806483	50	0.273779
Dibromochloromethane	1	0.1954628	2	0.3058781	5	0.2995091	10	0.3067263	20	0.3443887	50	0.3599448
1,2-Dibromoethane	1	0.387205	2	0.4152207	5	0.4139148	10	0.4117751	20	0.4205098	50	0.439896
Chlorobenzene	1	1.141484	2	1.300256	5	1.22289	10	1.222196	20	1.268013	50	1.234034
Bromoform	1	0.129921	2	0.1507396	5	0.1403793	10	0.1654611	20	0.1852009	50	0.1967156
1,1,2,2-Tetrachloroethane	1	0.5720375	2	0.7488666	5	0.7870861	10	0.7104761	20	0.7506403	50	0.7288423
1,2,4-Trichlorobenzene	1	6.982231E-02	2	0.148378	5	0.2032745	10	0.2020054	20	0.2092492	50	0.2466564
1,3-Dichlorobenzene	1	0.948657	2	1.182099	5	1.105942	10	1.139155	20	1.151222	50	1.175941
1,4-Dichlorobenzene	1	1.112015	2	1.169665	5	1.232994	10	1.151103	20	1.196167	50	1.17052
1,2-Dichlorobenzene	1	0.834553	2	1.111243	5	1.040463	10	1.00277	20	1.046587	50	1.081676

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2106098
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 06/18/21 08:08

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromo-3-chloropropane	1	3.782219E-02	2	0.1234915	5	9.587591E-02	10	8.741802E-02	20	9.065852E-02	50	0.1109498
Dibromofluoromethane	50	0.5913957	55	0.5857742	60	0.6050241	50	0.6090502	65	0.599548	50	0.6278028
Toluene-d8	50	1.156133	55	1.20606	60	1.22483	50	1.244223	65	1.198461	50	1.336655
4-Bromofluorobenzene	50	0.8721141	55	0.8442948	60	0.860972	50	0.8437756	65	0.8369979	50	0.9245401

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2106098
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 06/18/21 08:08

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	80	0.5188117	100	0.513071								
Chloromethane	80	0.7237385	100	0.8106379								
Vinyl chloride	80	0.6784366	100	0.6929469								
Bromomethane	80	0.2018831	100	0.2117683								
Chloroethane	80	~~0.2324829~~	100	~~0.1721268~~								
Trichlorofluoromethane	80	0.7833297	100	0.7863313								
Freon 113	80	0.307747	100	0.3128048								
1,1-Dichloroethene	80	0.5362744	100	0.5539112								
trans-1,2-Dichloroethene	80	0.5978528	100	0.6065935								
cis-1,2-Dichloroethene	80	0.6769028	100	0.6900783								
1,1-Dichloroethane	80	1.149155	100	1.152482								
Chloroform	80	1.088278	100	1.097122								
1,1,1-Trichloroethane	80	0.8538667	100	0.8544162								
Carbon Tetrachloride	80	0.3354238	100	0.2918061								
1,2-Dichloroethane	80	0.3378516	100	0.3503619								
Trichloroethene	80	0.2419864	100	0.2482773								
1,2-Dichloropropane	80	0.3393545	100	0.3555149								
Bromodichloromethane	80	0.3580559	100	0.3715528								
cis-1,3-Dichloropropene	80	0.5418855	100	0.5581627								
trans-1,3-Dichloropropene	80	0.6300793	100	0.648602								
1,1,2-Trichloroethane	80	0.4164825	100	0.4266462								
Tetrachloroethene	80	0.2557776	100	0.2619908								
Dibromochloromethane	80	0.3640785	100	0.3872307								
1,2-Dibromoethane	80	0.4359692	100	0.4477482								
Chlorobenzene	80	1.162731	100	1.166059								
Bromoform	80	0.209795	100	0.2221316								
1,1,2,2-Tetrachloroethane	80	0.7238183	100	0.7360177								
1,2,4-Trichlorobenzene	80	0.2835707	100	0.3074052								
1,3-Dichlorobenzene	80	1.171958	100	1.187558								
1,4-Dichlorobenzene	80	1.186322	100	1.17352								
1,2-Dichlorobenzene	80	1.084059	100	1.10439								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Calibration:	2106098	Instrument:	OVGCMS5
Matrix:	Water	Calibration Date:	06/18/21 08:08

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromo-3-chloropropane	80	0.1211319	100	0.1369917								
Dibromofluoromethane	70	0.5842909	75	0.5832016								
Toluene-d8	70	1.244561	75	1.260871								
4-Bromofluorobenzene	70	0.8334529	75	0.8539871								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2106098
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 06/18/21 08:08

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.5094763	9.647847	3.98025	5.556263E-02	0.9996769		0.99	
Chloromethane	0.7825336	16.46827	4.40925	0.135073	0.9923367		0.99	
Vinyl chloride	0.6650027	10.06966	4.5845	5.710391E-02			20	
Bromomethane	0.2460614	27.39954	5.228375	4.862762E-02		0.9963293	0.99	
Chloroethane	0.3880182	22.36143	5.459	0.1512648		0.9973848	0.99	
Trichlorofluoromethane	0.7609833	8.000491	5.701125	0.1864209			20	
Freon 113	0.3222191	11.13614	6.55825	9.342257E-02			20	
1,1-Dichloroethene	0.5314554	8.963278	6.53325	4.564842E-02			20	
trans-1,2-Dichloroethene	0.6064423	12.01755	7.5505	0.1224101			20	
cis-1,2-Dichloroethene	0.6549615	6.358542	8.9505	6.797787E-02			20	
1,1-Dichloroethane	1.152866	6.19063	8.31475	5.035179E-02			20	
Chloroform	1.100938	7.606441	9.222	3.620673E-02			20	
1,1,1-Trichloroethane	0.8164118	10.18657	9.485375	5.345546E-02			20	
Carbon Tetrachloride	0.285844	11.02986	9.4145	6.564497E-02			20	
1,2-Dichloroethane	0.3513194	5.157523	10.08825	2.752186E-02			20	
Trichloroethene	0.2450156	8.169892	10.453	4.611096E-02			20	
1,2-Dichloropropane	0.3371891	2.808828	10.98725	3.084346E-02			20	
Bromodichloromethane	0.3308186	8.809988	11.01775	4.062078E-02			20	
cis-1,3-Dichloropropene	0.4967443	11.13382	11.6105	4.251153E-02			20	
trans-1,3-Dichloropropene	0.6187986	8.92381	12.19875	3.889151E-02			20	
1,1,2-Trichloroethane	0.420744	6.711427	12.36275	0.0322457			20	
Tetrachloroethene	0.2798147	12.18024	12.21	0.0317417			20	
Dibromochloromethane	0.3204024	18.63594	12.55363	2.959019E-02	0.9973738		0.99	
1,2-Dibromoethane	0.4215299	4.576784	12.81575	3.543673E-02			20	
Chlorobenzene	1.214708	4.518369	13.2455	1.871819E-02			20	
Bromoform	0.175043	19.21377	13.87912	4.188187E-02	0.9953063		0.99	
1,1,2,2-Tetrachloroethane	0.7197231	8.881911	14.47125	2.257241E-02			20	
1,2,4-Trichlorobenzene	0.2087952	36.10883	18.155	0.111192		0.9993635	0.99	
1,3-Dichlorobenzene	1.132817	6.985412	15.41725	1.644861E-02			20	
1,4-Dichlorobenzene	1.174038	2.971778	15.50525	1.679585E-02			20	

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2106098
Instrument: OVGCMS5
Matrix: Water
Calibration Date: 06/18/21 08:08

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichlorobenzene	1.038218	8.654341	16.02525	3.415201E-02	0.9996843		0.99	
1,2-Dibromo-3-chloropropane	0.1005424	30.57038	17.0955	0.1851555		0.9994421	0.99	
Dibromofluoromethane	0.5982609	2.57523	9.428	9.589849E-03			20	
Toluene-d8	1.233974	4.295517	11.7795	2.799324E-02			20	
4-Bromofluorobenzene	0.8587668	3.43207	14.32875	7.284017E-03			20	

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2107025
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 07/07/21 00:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	1	0.9812943	2	0.6771729	5	0.7139319	10	0.8475077	20	0.7782247	50	0.8516901
Chloromethane	1	1.632857	2	0.8451373	5	0.9041961	10	1.013131	20	0.9286653	50	0.9927743
Vinyl chloride	1	1.132799	2	0.7198137	5	0.7040264	10	0.8026877	20	0.7222578	50	0.7876589
Bromomethane	1	0.7807598	2	0.4813326	5	0.558239	10	0.453638	20	0.3645471	50	0.2572956
Chloroethane	1	0.7226676	2	0.3737267	5	0.3750852	10	0.4261997	20	0.3541736	50	0.3721343
Trichlorofluoromethane	1	0.8781225	2	0.6157513	5	0.6557739	10	0.7749763	20	0.7071725	50	0.7625789
Freon 113	1	0.4491693	2	0.53862	5	0.4598214	10	0.4946588	20	0.4333497	50	0.488874
1,1-Dichloroethene	1	0.6122923	2	0.601459	5	0.4607041	10	0.5021826	20	0.4223263	50	0.4621262
trans-1,2-Dichloroethene	1	0.5920762	2	0.6482339	5	0.5413212	10	0.5480207	20	0.472269	50	0.5169531
cis-1,2-Dichloroethene	1	0.6150807	2	0.6696133	5	0.6019311	10	0.6122337	20	0.5053017	50	0.5572096
1,1-Dichloroethane	1	0.875334	2	1.250992	5	1.022278	10	1.057975	20	0.8690615	50	0.9544447
Chloroform	1	0.9385384	2	1.104643	5	0.9111103	10	0.979286	20	0.8197186	50	0.9003066
1,1,1-Trichloroethane	1	0.7047752	2	0.8291913	5	0.7066744	10	0.7288899	20	0.6247219	50	0.7017331
Carbon Tetrachloride	1	0.3971293	2	0.5158144	5	0.4378653	10	0.4646195	20	0.3894599	50	0.433294
1,2-Dichloroethane	1	0.4113982	2	0.542102	5	0.4261752	10	0.432335	20	0.3707094	50	0.39096
Trichloroethene	1	0.3126457	2	0.3689636	5	0.3341195	10	0.3551742	20	0.303798	50	0.3294526
1,2-Dichloropropane	1	0.4501081	2	0.401301	5	0.3516986	10	0.3790491	20	0.3148269	50	0.3380442
Bromodichloromethane	1	0.3702867	2	0.5256092	5	0.4417327	10	0.455909	20	0.382695	50	0.407089
cis-1,3-Dichloropropene	1	0.5734428	2	0.6924819	5	0.6037238	10	0.62031	20	0.5289326	50	0.5774395
trans-1,3-Dichloropropene	1	1.047624	2	1.273575	5	1.09055	10	1.131774	20	0.9526312	50	1.0235
1,1,2-Trichloroethane	1	0.6384439	2	0.7416328	5	0.6188538	10	0.6294565	20	0.5387111	50	0.5585413
Tetrachloroethene	1	0.4563817	2	0.5665754	5	0.5555946	10	0.5796668	20	0.4706137	50	0.5469977
Dibromochloromethane	1	0.7821935	2	1.004376	5	0.8355964	10	0.8591328	20	0.7305745	50	0.8007674
1,2-Dibromoethane	1	0.6188278	2	0.8149932	5	0.7186627	10	0.7441809	20	0.6398648	50	0.7087594
Chlorobenzene	1	1.625074	2	1.965461	5	1.734196	10	1.764545	20	1.530841	50	1.63936
Bromoform	1	0.3941617	2	0.5119486	5	0.4629423	10	0.4783974	20	0.4209153	50	0.465497
1,1,2,2-Tetrachloroethane	1	0.8388963	2	0.9511665	5	0.7970019	10	0.8281604	20	0.7132818	50	0.7567179
1,2,4-Trichlorobenzene	1	0.6787507	2	0.6834439	5	0.5982211	10	0.6411087	20	0.5844695	50	0.6446091
1,3-Dichlorobenzene	1	1.390678	2	1.67851	5	1.468948	10	1.494334	20	1.307388	50	1.435256
1,4-Dichlorobenzene	1	1.390678	2	1.748546	5	1.538431	10	1.518125	20	1.353298	50	1.456327
1,2-Dichlorobenzene	1	1.312616	2	1.548077	5	1.374417	10	1.419244	20	1.24301	50	1.369044

INITIAL CALIBRATION DATA

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2107025
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 07/07/21 00:00

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromo-3-chloropropane	1	0.2494087	2	0.2360773	5	0.1527661	10	0.1449032	20	0.1174882	50	0.128644
Dibromofluoromethane	50	0.4924364	55	0.4980345	60	0.5227647			65	0.5396218	50	0.5110327
Toluene-d8	50	0.892477	55	0.9256819	60	0.9338148			65	0.9694166	50	0.92991
4-Bromofluorobenzene	50	0.7597514	55	0.7846387	60	0.8128486			65	0.8214181	50	0.7924376

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2107025
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 07/07/21 00:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dichlorodifluoromethane	80	0.8228098	100	0.843056								
Chloromethane	80	0.9834862	100	1.021356								
Vinyl chloride	80	0.7609477	100	0.79792								
Bromomethane	80	~~0.1636424~~	100	~~0.1454888~~								
Chloroethane	80	0.3485649	100	0.3535072								
Trichlorofluoromethane	80	0.7211623	100	0.7496832								
Freon 113	80	0.4536706	100	0.4724078								
1,1-Dichloroethene	80	0.432235	100	0.4544237								
trans-1,2-Dichloroethene	80	0.4823982	100	0.509984								
cis-1,2-Dichloroethene	80	0.5272996	100	0.5621134								
1,1-Dichloroethane	80	0.8818031	100	0.9231589								
Chloroform	80	0.8437241	100	0.8861035								
1,1,1-Trichloroethane	80	0.6580439	100	0.6895215								
Carbon Tetrachloride	80	0.4026064	100	0.4227869								
1,2-Dichloroethane	80	0.3696008	100	0.3896045								
Trichloroethene	80	0.310381	100	0.3297608								
1,2-Dichloropropane	80	0.3158722	100	0.3326155								
Bromodichloromethane	80	0.3778093	100	0.4031209								
cis-1,3-Dichloropropene	80	0.5394398	100	0.5662575								
trans-1,3-Dichloropropene	80	0.9421652	100	0.9788578								
1,1,2-Trichloroethane	80	0.5204082	100	0.5599281								
Tetrachloroethene	80	0.4750113	100	0.4853383								
Dibromochloromethane	80	0.7412104	100	0.7880647								
1,2-Dibromoethane	80	0.6501824	100	0.6869792								
Chlorobenzene	80	1.520917	100	1.586779								
Bromoform	80	0.4362368	100	0.4599127								
1,1,2,2-Tetrachloroethane	80	0.7131183	100	0.7445861								
1,2,4-Trichlorobenzene	80	0.6369495	100	0.6735755								
1,3-Dichlorobenzene	80	1.367855	100	1.418286								
1,4-Dichlorobenzene	80	1.369959	100	1.453787								
1,2-Dichlorobenzene	80	1.311339	100	1.369166								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory:	ENCO Orlando	SDG:	AE05878-TE015
Client:	Tetra Tech NUS, Inc. (TE015)	Project:	NASA KSC HMFN
Calibration:	2107025	Instrument:	OVGCMS2
Matrix:	Water	Calibration Date:	07/07/21 00:00

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
1,2-Dibromo-3-chloropropane	80	0.1201001	100	0.1293609								
Dibromofluoromethane	70	0.5086631	75	0.5111321								
Toluene-d8	70	0.9128024	75	0.9090268								
4-Bromofluorobenzene	70	0.7798707	75	0.7708157								

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN

Calibration: 2107025
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 07/07/21 00:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dichlorodifluoromethane	0.8144609	11.50532	5.93125	5.921899E-02			20	
Chloromethane	1.0402	23.73763	6.405	8.366299E-02	0.9991419		0.99	
Vinyl chloride	0.8035139	17.22101	6.59625	0.1112571	0.9988763		0.99	
Bromomethane	0.4826353	37.08278	7.246667	0.1666723		0.9997793	0.99	
Chloroethane	0.4157574	30.39833	7.4675	0.3016741	0.9987283		0.99	
Trichlorofluoromethane	0.7331526	10.87444	7.73375	0.1183179			20	
Freon 113	0.4738214	7.003996	8.56	8.654411E-02			20	
1,1-Dichloroethene	0.4934686	14.97946	8.52	8.904635E-02	0.998482		0.99	
trans-1,2-Dichloroethene	0.538907	10.82464	9.4625	4.927588E-02			20	
cis-1,2-Dichloroethene	0.5813479	9.186062	10.6975	4.534096E-02			20	
1,1-Dichloroethane	0.9793809	13.26191	10.135	5.607816E-02			20	
Chloroform	0.9229288	9.636793	10.9125	4.365542E-02			20	
1,1,1-Trichloroethane	0.7054439	8.453686	11.20875	3.111261E-02			20	
Carbon Tetrachloride	0.432947	9.599993	11.1725	0.0388233			20	
1,2-Dichloroethane	0.4166106	13.40076	11.6925	6.403121E-02			20	
Trichloroethene	0.3305369	6.803054	12.0625	3.234726E-02			20	
1,2-Dichloropropane	0.3604394	13.04483	12.51125	0.0517982			20	
Bromodichloromethane	0.4205315	12.39126	12.52625	4.514478E-02			20	
cis-1,3-Dichloropropene	0.5877535	8.82909	13.07	3.974212E-02			20	
trans-1,3-Dichloropropene	1.055085	10.44344	13.59125	4.899325E-02			20	
1,1,2-Trichloroethane	0.600747	11.96595	13.745	4.039473E-02			20	
Tetrachloroethene	0.5170224	9.633677	13.675	3.762551E-02			20	
Dibromochloromethane	0.8177395	10.61589	13.9425	3.598978E-02			20	
1,2-Dibromoethane	0.6978063	9.130938	14.19875	3.004813E-02			20	
Chlorobenzene	1.670897	8.813982	14.64625	3.053514E-02			20	
Bromoform	0.4537515	7.985569	15.27	0.0337494			20	
1,1,2,2-Tetrachloroethane	0.7928662	10.08678	15.845	3.729984E-02			20	
1,2,4-Trichlorobenzene	0.642641	5.67837	19.9825	3.576368E-02	0.9982458		0.99	
1,3-Dichlorobenzene	1.445157	7.677947	16.92125	3.887775E-02			20	
1,4-Dichlorobenzene	1.478644	8.644127	17.00375	0.1783969			20	

INITIAL CALIBRATION DATA (Continued)

EPA 8260D

Laboratory: ENCO Orlando
SDG: AE05878-TE015
Client: Tetra Tech NUS, Inc. (TE015)
Project: NASA KSC HMFN
Calibration: 2107025
Instrument: OVGCMS2
Matrix: Water
Calibration Date: 07/07/21 00:00

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,2-Dichlorobenzene	1.368364	6.594366	17.5875	4.126355E-02			20	
1,2-Dibromo-3-chloropropane	0.1598436	32.92043	18.7	4.153115E-02	0.9970013		0.99	
Dibromofluoromethane	0.511955	3.056775	11.09286	4.526921E-02			20	
Toluene-d8	0.9247328	2.625305	13.25286	3.685312E-02			20	
4-Bromofluorobenzene	0.7888258	2.796512	15.74857	2.347914E-02			20	

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2106098 **Laboratory ID:** AA66932-SCV1

Sequence: AA66932 **Standard ID:** A1F0991

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Dibromochloromethane	50.0	55	9.5	30.00
Carbon Tetrachloride	50.0	55	10.0	30.00
1,3-Dichlorobenzene	50.0	60	19.3	30.00
4-Bromofluorobenzene	50.0	55	9.4	30.00
Toluene-d8	50.0	55	9.6	30.00
Dibromofluoromethane	50.0	50	0.06	30.00
trans-1,2-Dichloroethene	50.0	55	10.3	30.00
cis-1,3-Dichloropropene	50.0	57	13.0	30.00
Tetrachloroethene	50.0	56	11.2	30.00
Bromomethane	20.0	22	7.7	30.00
1,2,4-Trichlorobenzene	50.0	60	19.1	30.00
Chlorobenzene	50.0	57	14.7	30.00
1,2-Dichloroethane	50.0	53	5.4	30.00
1,2-Dibromoethane	50.0	58	15.2	30.00
1,4-Dichlorobenzene	50.0	57	13.3	30.00
trans-1,3-Dichloropropene	50.0	61	21.5	30.00
cis-1,2-Dichloroethene	50.0	56	12.7	30.00
1,1-Dichloroethene	50.0	57	13.1	30.00
1,2-Dichlorobenzene	50.0	57	14.1	30.00
1,1,2,2-Tetrachloroethane	50.0	56	12.7	30.00
Trichloroethene	50.0	56	11.0	30.00
1,1,2-Trichloroethane	50.0	56	12.3	30.00
1,2-Dichloropropane	50.0	55	11.0	30.00
Freon 113	50.0	57	13.2	30.00
Chloroform	50.0	54	8.2	30.00
Trichlorofluoromethane	20.0	20	1.2	30.00
1,1,1-Trichloroethane	50.0	58	15.3	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2106098 **Laboratory ID:** AA66932-SCV1

Sequence: AA66932 **Standard ID:** A1F0991

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,1-Dichloroethane	50.0	56	12.5	30.00
Bromodichloromethane	50.0	60	19.7	30.00
Bromoform	50.0	55	10.2	30.00
Vinyl chloride	20.0	20	2.4	30.00
Chloroethane	20.0	16	-21.2	30.00
Chloromethane	20.0	23	14.0	30.00
1,2-Dibromo-3-chloropropane	50.0	59	17.5	30.00
Dichlorodifluoromethane	20.0	27	36.8 *	30.00

* Values outside of QC limits

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2107025 **Laboratory ID:** AA67203-SCV1

Sequence: AA67203 **Standard ID:** A1G0391

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Dibromochloromethane	50.0	49	-1.2	30.00
Carbon Tetrachloride	50.0	48	-3.1	30.00
1,3-Dichlorobenzene	50.0	51	1.3	30.00
4-Bromofluorobenzene	50.0	50	0.1	30.00
Toluene-d8	50.0	50	-0.3	30.00
Dibromofluoromethane	50.0	48	-3.9	30.00
trans-1,2-Dichloroethene	50.0	45	-10.1	30.00
cis-1,3-Dichloropropene	50.0	46	-7.8	30.00
Tetrachloroethene	50.0	48	-4.7	30.00
Bromomethane	20.0	12	-39.8 *	30.00
1,2,4-Trichlorobenzene	50.0	51	1.5	30.00
Chlorobenzene	50.0	50	0.2	30.00
1,2-Dichloroethane	50.0	47	-5.7	30.00
1,2-Dibromoethane	50.0	50	-0.3	30.00
1,4-Dichlorobenzene	50.0	48	-3.7	30.00
trans-1,3-Dichloropropene	50.0	49	-1.7	30.00
cis-1,2-Dichloroethene	50.0	46	-7.2	30.00
1,1-Dichloroethene	50.0	45	-10.1	30.00
1,2-Dichlorobenzene	50.0	51	1.3	30.00
1,1,2,2-Tetrachloroethane	50.0	48	-3.4	30.00
Trichloroethene	50.0	49	-2.7	30.00
1,1,2-Trichloroethane	50.0	49	-2.8	30.00
1,2-Dichloropropane	50.0	46	-7.7	30.00
Freon 113	50.0	45	-10.2	30.00
Chloroform	50.0	47	-5.4	30.00
Trichlorofluoromethane	20.0	20	-2.0	30.00
1,1,1-Trichloroethane	50.0	48	-3.6	30.00

SECOND-SOURCE CALIBRATION VERIFICATION

EPA 8260D

Laboratory: ENCO Orlando **SDG:** AE05878-TE015

Client: Tetra Tech NUS, Inc. (TE015) **Project:** NASA KSC HMFN

Calibration: 2107025 **Laboratory ID:** AA67203-SCV1

Sequence: AA67203 **Standard ID:** A1G0391

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
1,1-Dichloroethane	50.0	49	-2.6	30.00
Bromodichloromethane	50.0	49	-1.0	30.00
Bromoform	50.0	54	8.3	30.00
Vinyl chloride	20.0	19	-6.2	30.00
Chloroethane	20.0	20	-1.7	30.00
Chloromethane	20.0	19	-4.6	30.00
1,2-Dibromo-3-chloropropane	50.0	52	4.2	30.00
Dichlorodifluoromethane	20.0	20	-2.3	30.00

* Values outside of QC limits

ANALYSIS SEQUENCE

AA67497

Instrument: OVGCMS5

Calibration ID: 2106098

Printed: 7/26/2021 9:24:37AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA67497-CCV1	QC		1		A1G0800	A1D0593		
1G26016-BS1	QC		2			A1D0593		
AA67497-CRL1	QC		3		A1G0802	A1D0593		
1G26016-BLK1	QC		4			A1D0593		
AE05878-02	60D TCL SOM01.2 CLP-LIK	A	5			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 1x 7/23/21 kg custom
AE05878-01	60D TCL SOM01.2 CLP-LIK	B	6			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-03	60D TCL SOM01.2 CLP-LIK	A	7			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-04	60D TCL SOM01.2 CLP-LIK	A	8			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 2x 7/23/21 kg custom rr 1x dil/lute
AE05878-05	60D TCL SOM01.2 CLP-LIK	A	9			A1D0593	Tetra Tech NUS, Inc. (TE015)	run5x c12 nc7/26/21 custom
AE05878-06	60D TCL SOM01.2 CLP-LIK	A	10			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-07	60D TCL SOM01.2 CLP-LIK	A	11			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1000x tce nc7/26/21 custom
AE05878-08	60D TCL SOM01.2 CLP-LIK	A	12			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 5000x 7/23/21 kg custom
AE05878-09	60D TCL SOM01.2 CLP-LIK	A	13			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-10	60D TCL SOM01.2 CLP-LIK	A	14			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-11	60D TCL SOM01.2 CLP-LIK	A	15			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 1x 7/23/21 kg custom
AE05878-12	60D TCL SOM01.2 CLP-LIK	A	16			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 25x 7/23/21 kg custom rr 100x C3
AE05878-13	60D TCL SOM01.2 CLP-LIK	A	17			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-14	60D TCL SOM01.2 CLP-LIK	A	18			A1D0593	Tetra Tech NUS, Inc. (TE015)	run500x f113 nc7/26/21 custom rr 20x dil/lute
AE05878-15	60D TCL SOM01.2 CLP-LIK	A	19			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-16	60D TCL SOM01.2 CLP-LIK	A	20			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-17	60D TCL SOM01.2 CLP-LIK	A	21			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-18	60D TCL SOM01.2 CLP-LIK	A	22			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-19	60D TCL SOM01.2 CLP-LIK	A	23			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 2.5x 7/23/21 kg custom rr 1x dil/lute

Samples Loaded By — 07/26/21 Date

Data Processed By — 07/27/21 Date

ANALYSIS SEQUENCE

AA67497

Instrument: OVGCMS5

Calibration ID: 2106098

Printed: 7/26/2021 9:24:37AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
1G26016-MS1	QC		24			A1D0593		
1G26016-MSD1	QC		25			A1D0593		

Samples Loaded By 07/26/21 Date

Data Processed By 07/27/21 Date

PREPARATION BENCH SHEET

Printed: 7/26/2021 9:23:13AM

1G26016

ENCO Orlando

Analysis
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A1B1158 8260 surr working (lower conc.)

Spiking Solution
A1G0767 8260 2nd source Gases/Acrolein virtual
A1G0849 8260 2nd source Mega Mix

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1G26016-BLK1		Blank		QC			5	5			5	
1G26016-BS1		LCS		QC			5	5	A1G0849 A1G0767	2 2	5	
1G26016-MS1		Matrix Spike [AE05878-02]		QC	<2	2	5	5	A1G0849 A1G0767	2 2	5	
1G26016-MSD1		Matrix Spike Dup [AE05878-02]		QC	<2	2	5	5	A1G0849 A1G0767	2 2	5	
AE05878-01	C	HMPN-MW0037-010.0-20210730MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1x nc7/26/21 custom
AE05878-02	C	HMPN-MW0038-020.0-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	hist 1x 7/23/21 kg custom
AE05878-03	C	HMPN-MW0046-015.0-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1x nc7/26/21 custom
AE05878-04	C	HMPN-MW0047-025.0-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	hist 2x 7/23/21 kg custom
AE05878-05	C	HMPN-MW0039-035.0-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run5x c12 nc7/26/21 custom
AE05878-06	C	HMPN-MW0040-042.5-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1x nc7/26/21 custom
AE05878-07	C	HMPN-MW0027-042.5-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1000x tce nc7/26/21 custom
AE05878-08	C	HMPN-MW0028-047.5-20210729MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	hist 5000x 7/23/21 kg custom
AE05878-09	C	HMPN-MW0045-030.0-20210731MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1x nc7/26/21 custom
AE05878-10	C	HMPN-MW0036-015.0-20210731MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1x nc7/26/21 custom
AE05878-11	C	HMPN-MW0041-035.0-20210731MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	hist 1x 7/23/21 kg custom
AE05878-12	C	HMPN-MW0042-042.5-20210731MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	hist 25x 7/23/21 kg custom
AE05878-13	C	HMPN-MW0043-035.0-20210731MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	2	5	5			5	run1x nc7/26/21 custom

PREPARATION BENCH SHEET

Printed: 7/26/2021 9:23:13AM

1G26016

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
__ A1B1158 8260 surr working (lower conc.)

Spiking Solution
A1G0767 8260 2nd source Gases/Acrolein virtual
A1G0849 8260 2nd source Mega Mix

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE05878-14	C	HMPN-MW0044-042.5-20210721[illegible]MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run500x f113 nc7/26/21 custom
AE05878-15	C	HMPN-MW0011-025.0-20210721[illegible]MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc7/26/21 custom
AE05878-16	C	HMPN-MW0009-010.8-20210721[illegible]MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc7/26/21 custom
AE05878-17	C	HMPN-MW0034-015.0-20210721[illegible]MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc7/26/21 custom
AE05878-18	C	HMPN-MW0035-035.0-20210721[illegible]MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	run1x nc7/26/21 custom
AE05878-19	C	HMPN-MW0016-010.0-20210722[illegible]MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	hist 2.5x 7/23/21 kg custom

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5
EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 07/26/21

StopDate 07/27/21

Instrument ID GCMS-5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1G0592	P&T Anti-Foam working solution	N/A

07/26/21
Samples Prepared By Date

Samples Prepared By Date

Sequence Name: C:\msdchem\1\sequence\215GU.s
Comment:
Operator: kkw
Data Path: C:\msdchem\1\DATA\072621\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line			Sample Name/Misc Info		
1)	Sample	1	215GU001	8260S	rinse
2)	Sample	2	215GU002	8260S	CCV1
3)	Sample	2	215GU003	8260S	CCV1
4)	Sample	3	215GU004	8260S	BS1
5)	Sample	4	215GU005	8260S	CRL1
6)	Sample	5	215GU006	8260S	BLK1
7)	Sample	6	215GU007	8260S	AE05878-02
8)	Sample	7	215GU008	8260S	AE05878-01
9)	Sample	8	215GU009	8260S	AE05878-03
10)	Sample	9	215GU010	8260S	AE05878-04@2X
11)	Sample	10	215GU011	8260S	AE05878-05@5X
12)	Sample	11	215GU012	8260S	AE05878-06
13)	Sample	12	215GU013	8260S	AE05878-07@1000X
14)	Sample	13	215GU014	8260S	AE05878-08@5000X
15)	Sample	14	215GU015	8260S	AE05878-09
16)	Sample	15	215GU016	8260S	AE05878-10
17)	Sample	16	215GU017	8260S	AE05878-11
18)	Sample	17	215GU018	8260S	AE05878-12@25X
19)	Sample	18	215GU019	8260S	AE05878-13
20)	Sample	19	215GU020	8260S	AE05878-14@500X
21)	Sample	20	215GU021	8260S	AE05878-15
22)	Sample	21	215GU022	8260S	AE05878-16
23)	Sample	22	215GU023	8260S	AE05878-17
24)	Sample	23	215GU024	8260S	AE05878-18
25)	Sample	24	215GU025	8260S	AE05878-19@2.5X
26)	Sample	25	215GU026	8260S	1G26016-MS1
27)	Sample	25	215GU027	8260S	1G26016-MSD1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU003.D
Acq On : 26 Jul 2021 8:35 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 26 12:38:51 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	1187063	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2724224	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1769790	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1346209	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	758017	53.37	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.74%				
52) D8-Toluene	11.790	98	3628840	54.02	ug/L		0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 108.04%				
73) Bromofluorobenzene	14.334	95	1613508	53.07	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 106.14%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.993	85	321684	26.34	ug/L		98
3) Chloromethane	4.416	50	447188	24.65	ug/L		100
4) Vinyl Chloride	4.592	62	348486	22.07	ug/L	#	86
5) Bromomethane	5.238	94	141038	33.28	ug/L		98
6) Chloroethane	5.438	64	121703	13.52	ug/L		99
7) Trichlorofluoromethane	5.702	101	368774	20.41	ug/L		99
8) Diethyl ether	6.190	59	577338	47.06	ug/L		98
9) 1,1-Dichloroethene	6.543	96	564405	44.73	ug/L		99
10) Trichlorotrifluoroethane	6.572	151	334593	43.74	ug/L		99
11) Acrolein	7.024	56	2134212	669.68	ug/L		99
12) Iodomethane	6.789	142	3173869	287.15	ug/L		99
13) Carbon Disulfide	6.631	76	9997803	280.00	ug/L		99
14) 3-chloropropene	7.201	41	1162557	55.33	ug/L		99
15) Acetone	7.401	43	1340119	265.85	ug/L		98
16) Methylene Chloride	7.354	84	742022	45.86	ug/L		88
17) Methyl Acetate	7.530	43	727569	54.96	ug/L	#	96
18) t-1,2-Dichloroethene	7.553	96	717196	49.81	ug/L		100
19) Methyl tert-butyl ether	7.641	73	1976981	54.16	ug/L		94
20) Acetonitrile	8.017	41	2059209	614.61	ug/L		99
21) Isopropyl ether	8.059	45	2622064	57.24	ug/L		99
22) Chloroprene	8.282	88	700424	50.91	ug/L		99
23) 1,1-Dichloroethane	8.323	63	1421248	51.93	ug/L		99
24) Acrylonitrile	8.393	53	4184538	663.37	ug/L		99
25) Vinyl Acetate	8.546	43	9157433	281.87	ug/L		100
26) c-1,2-Dichloroethene	8.958	96	857002	55.11	ug/L		98
27) 2,2-Dichloropropane	9.081	77	1072136	54.51	ug/L		99
28) Bromochloromethane	9.187	128	273690	47.65	ug/L		98
29) Cyclohexane	9.198	56	1423530	52.19	ug/L		96
30) Chloroform	9.228	83	1376219	52.65	ug/L		99
32) Dibromofluoromethane	9.439	113	758017	53.37	ug/L	#	90
33) 2-Butanone	9.551	72	683417	292.51	ug/L		94
34) 1,1,1-Trichloroethane	9.492	97	1013128	52.27	ug/L		98
35) 1,1-Dichloropropene	9.616	75	1128762	52.37	ug/L		98
36) Propionitrile	9.903	54	1709501	607.30	ug/L		92
37) Methacrylonitrile	9.915	41	6603404	598.80	ug/L		97
38) Isobutyl Alcohol	9.956	43	1602430	1189.56	ug/L		94
40) Carbon Tetrachloride	9.422	117	767187	49.26	ug/L		88
41) Benzene	9.886	78	3254072	50.40	ug/L		100
42) 1,2-Dichloroethane	10.097	62	920331	48.08	ug/L		97
43) Trichloroethene	10.462	130	694170	52.00	ug/L		98
44) Methyl cyclohexane	10.456	83	1449567	49.82	ug/L		100
45) Dibromomethane	10.908	93	473928	49.91	ug/L		98
46) 1,2-Dichloropropane	10.990	63	982409	53.47	ug/L		98
47) Bromodichloromethane	11.020	83	1000052	55.48	ug/L		99
48) Methyl Methacrylate	11.085	69	732147	50.38	ug/L		97
49) 1,4-Dioxane	11.202	88	246712	1491.48	ug/L		98
50) 2-Chloroethyl vinyl ether	11.496	63	2729342	265.29	ug/L		99
51) C-1,3-Dichloropropene	11.613	75	1557235	57.54	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU003.D
Acq On : 26 Jul 2021 8:35 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 26 12:38:51 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

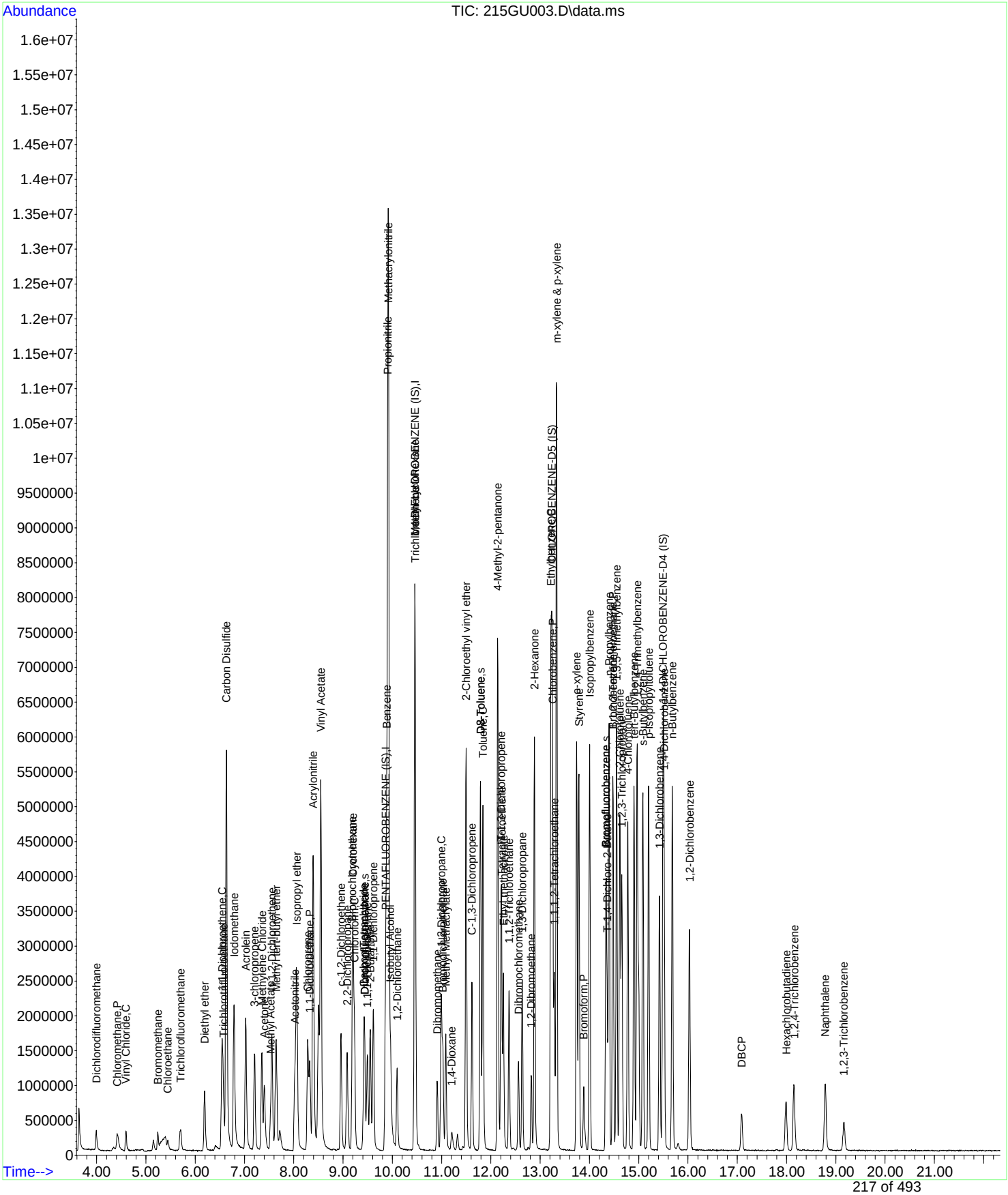
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.790	98	3628840	54.02	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	729728	291.52	ug/L		92
56) Toluene	11.837	92	2241264	51.78	ug/L		98
57) T-1,3-Dichloropropene	12.207	75	1231045	56.20	ug/L		100
58) Tetrachloroethene	12.218	164	488461	49.32	ug/L		97
59) Ethyl methacrylate	12.254	69	1334049	52.49	ug/L		100
60) 1,1,2-Trichloroethane	12.371	97	802312	53.87	ug/L		100
61) Dibromochloromethane	12.559	129	687825	51.87	ug/L		98
62) 1,3-Dichloropropane	12.636	76	1494724	54.79	ug/L		98
63) 1,2-Dibromoethane	12.818	107	801397	53.71	ug/L		94
64) 2-Hexanone	12.882	43	3890763	289.31	ug/L		100
65) Ethylbenzene	13.217	106	1299129	53.21	ug/L		98
66) Chlorobenzene	13.253	112	2253700	52.42	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.288	131	691007	55.67	ug/L		97
68) m-xylene & p-xylene	13.335	106	3236551	103.30	ug/L		100
69) o-xylene	13.740	106	1672054	54.09	ug/L		99
70) Styrene	13.787	104	2835922	51.81	ug/L		98
71) Bromoform	13.881	173	387630	51.27	ug/L		99
72) Isopropylbenzene	14.005	105	4221684	51.47	ug/L		100
74) Bromofluorobenzene	14.334	95	1613508	53.07	ug/L	#	75
75) n-Propylbenzene	14.398	91	5504167	51.21	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.475	83	1437398	56.42	ug/L		98
77) 1,2,3-Trichloropropane	14.657	61	309130	52.43	ug/L		100
78) T-1,4-Dichloro-2-Butene	14.357	53	443005	59.39	ug/L		92
80) Bromobenzene	14.475	156	769636	52.79	ug/L		95
81) 1,2,4-Trimethylbenzene	14.968	105	3725258	52.38	ug/L		99
82) 2-Chlorotoluene	14.616	91	3290702	55.21	ug/L		99
83) 4-Chlorotoluene	14.780	91	3390773	51.85	ug/L		99
84) tert-Butylbenzene	14.904	119	2911216	51.91	ug/L		99
85) 1,3,5-Trimethylbenzene	14.551	105	3668847	51.65	ug/L		97
86) p-Isopropyltoluene	15.203	119	3592645	52.34	ug/L		100
87) s-Butylbenzene	15.086	105	4414611	51.76	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	1635241	53.61	ug/L		98
89) 1,4-Dichlorobenzene	15.515	146	1645319	52.05	ug/L		99
90) n-Butylbenzene	15.679	91	3776944	53.32	ug/L		100
91) 1,2-Dichlorobenzene	16.032	146	1537666	52.25	ug/L		99
92) DBCP	17.089	157	187078	60.98	ug/L		98
93) Hexachlorobutadiene	17.994	225	191551	58.12	ug/L		88
94) 1,2,4-Trichlorobenzene	18.153	180	410220	59.08	ug/L		96
95) Naphthalene	18.782	128	1284005	62.67	ug/L		99
96) 1,2,3-Trichlorobenzene	19.158	180	194748	61.98	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU003.D
Acq On : 26 Jul 2021 8:35 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 26 12:38:51 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU004.D
Acq On : 26 Jul 2021 9:06 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 26 09:29:11 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	1225332	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2809745	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1741827	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1349946	50.00	ug/L		0.01
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	757489	51.66	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.32%				
52) D8-Toluene	11.784	98	3564962	51.45	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.90%				
73) Bromofluorobenzene	14.334	95	1513778	50.59	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.18%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.993	85	41797	3.32	ug/L	#	89
3) Chloromethane	4.422	50	178026	9.50	ug/L		99
4) Vinyl Chloride	4.592	62	204595	12.55	ug/L		94
5) Bromomethane	5.238	94	32417	7.96	ug/L	#	95
6) Chloroethane	5.462	64	143049	15.61	ug/L	#	90
7) Trichlorofluoromethane	5.709	101	327853	17.58	ug/L		97
8) Diethyl ether	6.190	59	279311	22.06	ug/L		98
9) 1,1-Dichloroethene	6.543	96	279610	21.47	ug/L		97
10) Trichlorotrifluoroethane	6.566	151	158411	20.06	ug/L		93
11) Acrolein	7.025	56	110615	33.62	ug/L		96
12) Iodomethane	6.790	142	387126	35.41	ug/L		98
13) Carbon Disulfide	6.637	76	958068	24.40	ug/L		99
14) 3-chloropropene	7.207	41	533351	23.71	ug/L		97
15) Acetone	7.407	43	254825	48.97	ug/L		95
16) Methylene Chloride	7.348	84	327978	19.64	ug/L		85
17) Methyl Acetate	7.530	43	291347	21.32	ug/L		95
18) t-1,2-Dichloroethene	7.553	96	319640	21.51	ug/L		98
19) Methyl tert-butyl ether	7.642	73	775895	20.59	ug/L		95
20) Acetonitrile	8.029	41	474615	137.23	ug/L		97
21) Isopropyl ether	8.059	45	1056005	22.33	ug/L		96
22) Chloroprene	8.282	88	299983	21.12	ug/L		96
23) 1,1-Dichloroethane	8.323	63	611951	21.66	ug/L		97
24) Acrylonitrile	8.400	53	188942	29.02	ug/L		97
25) Vinyl Acetate	8.552	43	641577	19.13	ug/L		98
26) c-1,2-Dichloroethene	8.958	96	346063	21.56	ug/L		97
27) 2,2-Dichloropropane	9.081	77	444077	21.87	ug/L		99
28) Bromochloromethane	9.193	128	121748	20.54	ug/L		99
29) Cyclohexane	9.199	56	647601	23.00	ug/L		94
30) Chloroform	9.228	83	557598	20.67	ug/L		99
32) Dibromofluoromethane	9.434	113	757489	51.66	ug/L	#	89
33) 2-Butanone	9.551	72	145034	60.14	ug/L		92
34) 1,1,1-Trichloroethane	9.492	97	435620	21.77	ug/L		99
35) 1,1-Dichloropropene	9.610	75	476010	21.39	ug/L		96
36) Propionitrile	9.910	54	81333	27.99	ug/L	#	1
37) Methacrylonitrile	9.915	41	374968	32.94	ug/L		83
38) Isobutyl Alcohol	9.915	43	277193	199.35	ug/L	#	51
40) Carbon Tetrachloride	9.422	117	326292	20.31	ug/L		99
41) Benzene	9.886	78	1431101	21.49	ug/L		98
42) 1,2-Dichloroethane	10.098	62	381441	19.32	ug/L		97
43) Trichloroethene	10.462	130	285822	20.76	ug/L		89
44) Methyl cyclohexane	10.456	83	633288	21.10	ug/L		98
45) Dibromomethane	10.914	93	190527	19.46	ug/L		96
46) 1,2-Dichloropropane	10.991	63	399083	21.06	ug/L		96
47) Bromodichloromethane	11.026	83	394235	21.21	ug/L		98
48) Methyl Methacrylate	11.091	69	281489	18.78	ug/L		97
49) 1,4-Dioxane	11.208	88	87658	614.60	ug/L		93
50) 2-Chloroethyl vinyl ether	11.496	63	1077698	101.56	ug/L		99
51) C-1,3-Dichloropropene	11.619	75	564989	20.24	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU004.D
Acq On : 26 Jul 2021 9:06 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 26 09:29:11 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

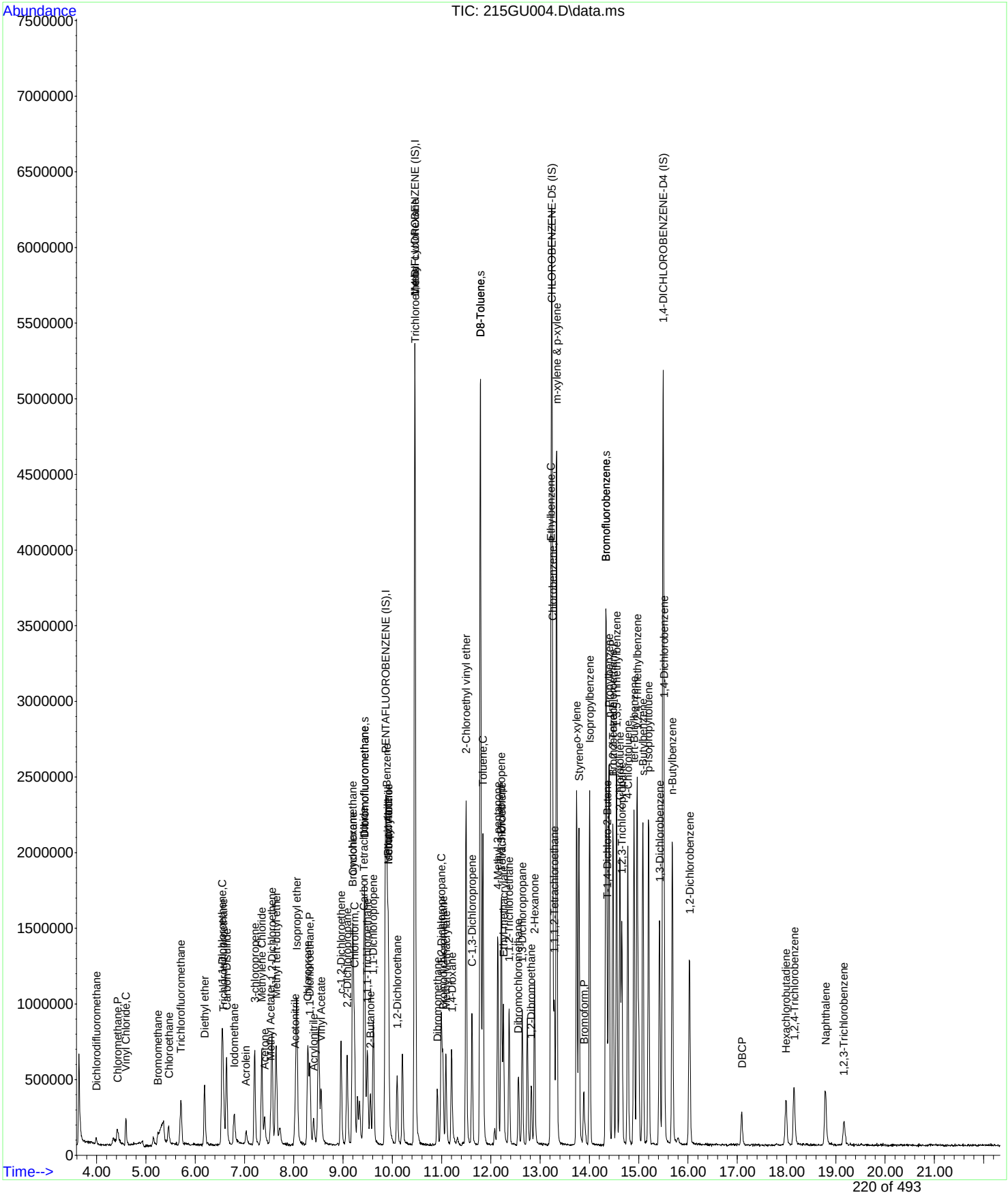
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3564962	51.45	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	150989	58.48	ug/L		98
56) Toluene	11.837	92	923524	21.68	ug/L		98
57) T-1,3-Dichloropropene	12.207	75	503595	23.36	ug/L		99
58) Tetrachloroethene	12.219	164	210444	21.59	ug/L		98
59) Ethyl methacrylate	12.254	69	508343	20.32	ug/L		98
60) 1,1,2-Trichloroethane	12.371	97	305271	20.83	ug/L		99
61) Dibromochloromethane	12.554	129	254657	19.51	ug/L		99
62) 1,3-Dichloropropane	12.636	76	562290	20.94	ug/L		100
63) 1,2-Dibromoethane	12.818	107	303560	20.67	ug/L		97
64) 2-Hexanone	12.883	43	754922	57.04	ug/L		98
65) Ethylbenzene	13.217	106	520984	21.68	ug/L		99
66) Chlorobenzene	13.253	112	904574	21.38	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.288	131	259941	21.28	ug/L		99
68) m-xylene & p-xylene	13.335	106	1317925	42.74	ug/L		99
69) o-xylene	13.740	106	667951	21.96	ug/L		99
70) Styrene	13.787	104	1126019	20.90	ug/L		97
71) Bromoform	13.887	173	149492	20.09	ug/L		96
72) Isopropylbenzene	14.005	105	1697525	20.43	ug/L		99
74) Bromofluorobenzene	14.334	95	1513778	50.59	ug/L	#	79
75) n-Propylbenzene	14.399	91	2234073	20.42	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.475	83	541315	21.59	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	117804	20.30	ug/L		97
78) T-1,4-Dichloro-2-Butene	14.357	53	171591	23.37	ug/L	#	82
80) Bromobenzene	14.475	156	320823	21.94	ug/L		99
81) 1,2,4-Trimethylbenzene	14.968	105	1515337	21.15	ug/L		99
82) 2-Chlorotoluene	14.616	91	1305870	21.85	ug/L		99
83) 4-Chlorotoluene	14.780	91	1358529	20.72	ug/L		99
84) tert-Butylbenzene	14.904	119	1157073	20.57	ug/L		98
85) 1,3,5-Trimethylbenzene	14.551	105	1510853	21.21	ug/L		100
86) p-Isopropyltoluene	15.198	119	1488087	21.62	ug/L		99
87) s-Butylbenzene	15.086	105	1850870	21.64	ug/L		99
88) 1,3-Dichlorobenzene	15.427	146	676034	22.10	ug/L		98
89) 1,4-Dichlorobenzene	15.515	146	673992	21.26	ug/L	#	86
90) n-Butylbenzene	15.679	91	1480358	20.84	ug/L		100
91) 1,2-Dichlorobenzene	16.032	146	599321	20.31	ug/L		97
92) DBCP	17.095	157	68823	26.85	ug/L		93
93) Hexachlorobutadiene	17.988	225	72450	21.92	ug/L		97
94) 1,2,4-Trichlorobenzene	18.153	180	165621	27.88	ug/L		96
95) Naphthalene	18.793	128	495873	30.90	ug/L		98
96) 1,2,3-Trichlorobenzene	19.158	180	76699	30.35	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU004.D
Acq On : 26 Jul 2021 9:06 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 26 09:29:11 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU005.D
Acq On : 26 Jul 2021 9:34 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 26 12:39:18 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	1188743	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2762389	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1725722	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1323203	50.00	ug/L		0.01
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	715600	50.31	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.62%				
52) D8-Toluene	11.784	98	3495131	51.31	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.62%				
73) Bromofluorobenzene	14.334	95	1477316	49.83	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.66%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	18786	1.54	ug/L	#	78
3) Chloromethane	4.422	50	34266	1.89	ug/L		100
4) Vinyl Chloride	4.592	62	21624	1.37	ug/L	#	44
5) Bromomethane	5.250	94	6025	1.55	ug/L	#	71
6) Chloroethane	5.468	64	19497	2.01	ug/L	#	76
7) Trichlorofluoromethane	5.720	101	23511	1.30	ug/L	#	87
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	6.795	142	48220	4.57	ug/L	#	78
13) Carbon Disulfide	0.000		0	N.D.	d		
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.	d		
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	8.605	43	4819	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.439	113	715600	50.31	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.	d		
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.886	78	11920	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU005.D
Acq On : 26 Jul 2021 9:34 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 26 12:39:18 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

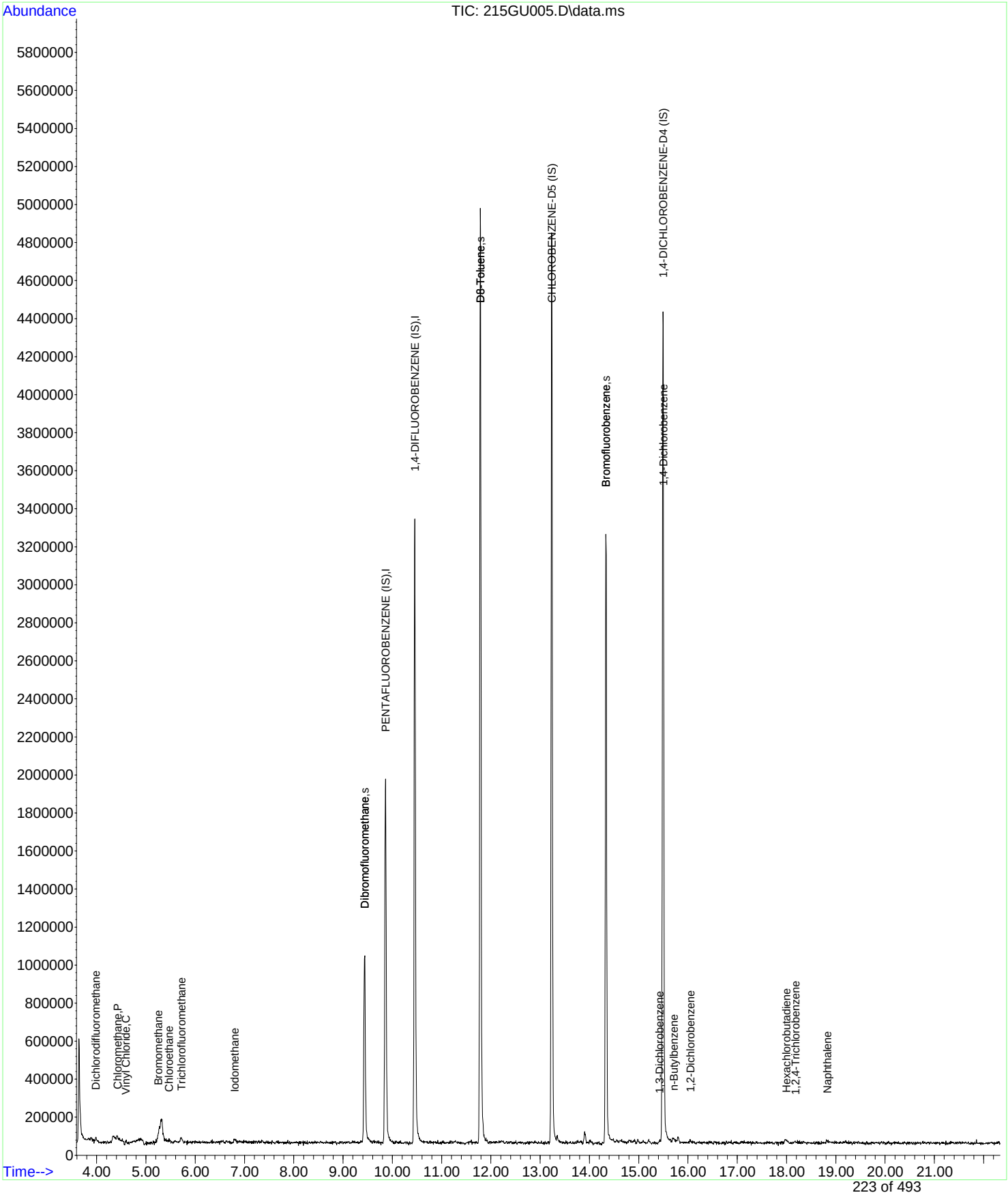
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3492981	51.27 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	11.848	92	6167	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D. d	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	13.223	106	4256	N.D.	
66) Chlorobenzene	13.253	112	5058	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D. d	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.022	105	9948	N.D.	
74) Bromofluorobenzene	14.334	95	1477316	49.83 ug/L #	78
75) n-Propylbenzene	14.404	91	14963	N.D.	
76) 1,1,2,2-Tetrachloroethane	14.481	83	4894	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.986	105	11729	N.D.	
82) 2-Chlorotoluene	14.622	91	11340	N.D.	
83) 4-Chlorotoluene	14.798	91	9341	N.D.	
84) tert-Butylbenzene	14.921	119	8485	N.D.	
85) 1,3,5-Trimethylbenzene	14.551	105	10405	N.D.	
86) p-Isopropyltoluene	15.203	119	13209	N.D.	
87) s-Butylbenzene	15.092	105	13342	N.D.	
88) 1,3-Dichlorobenzene	15.421	146	6576	0.22 ug/L #	62
89) 1,4-Dichlorobenzene	15.503	146	9295	0.30 ug/L #	1
90) n-Butylbenzene	15.715	91	19371	0.28 ug/L #	88
91) 1,2-Dichlorobenzene	16.050	146	10704	0.37 ug/L #	67
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	17.994	225	4334	1.34 ug/L #	29
94) 1,2,4-Trichlorobenzene	18.182	180	5960	1.20 ug/L #	36
95) Naphthalene	18.829	128	23423	2.00 ug/L #	69
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU005.D
Acq On : 26 Jul 2021 9:34 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 26 12:39:18 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU006.D
Acq On : 26 Jul 2021 10:02 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 26 10:35:32 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	1140364	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2663598	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1654230	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1265398	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.440	113	693632	50.83	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.66%				
52) D8-Toluene	11.784	98	3313429	50.44	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.88%				
73) Bromofluorobenzene	14.334	95	1412764	49.72	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.44%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.	d		
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.	d		
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	6.801	142	23524	2.33	ug/L	#	73
13) Carbon Disulfide	0.000		0	N.D.	d		
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.440	113	694179	50.87	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	0.000		0	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU006.D
Acq On : 26 Jul 2021 10:02 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

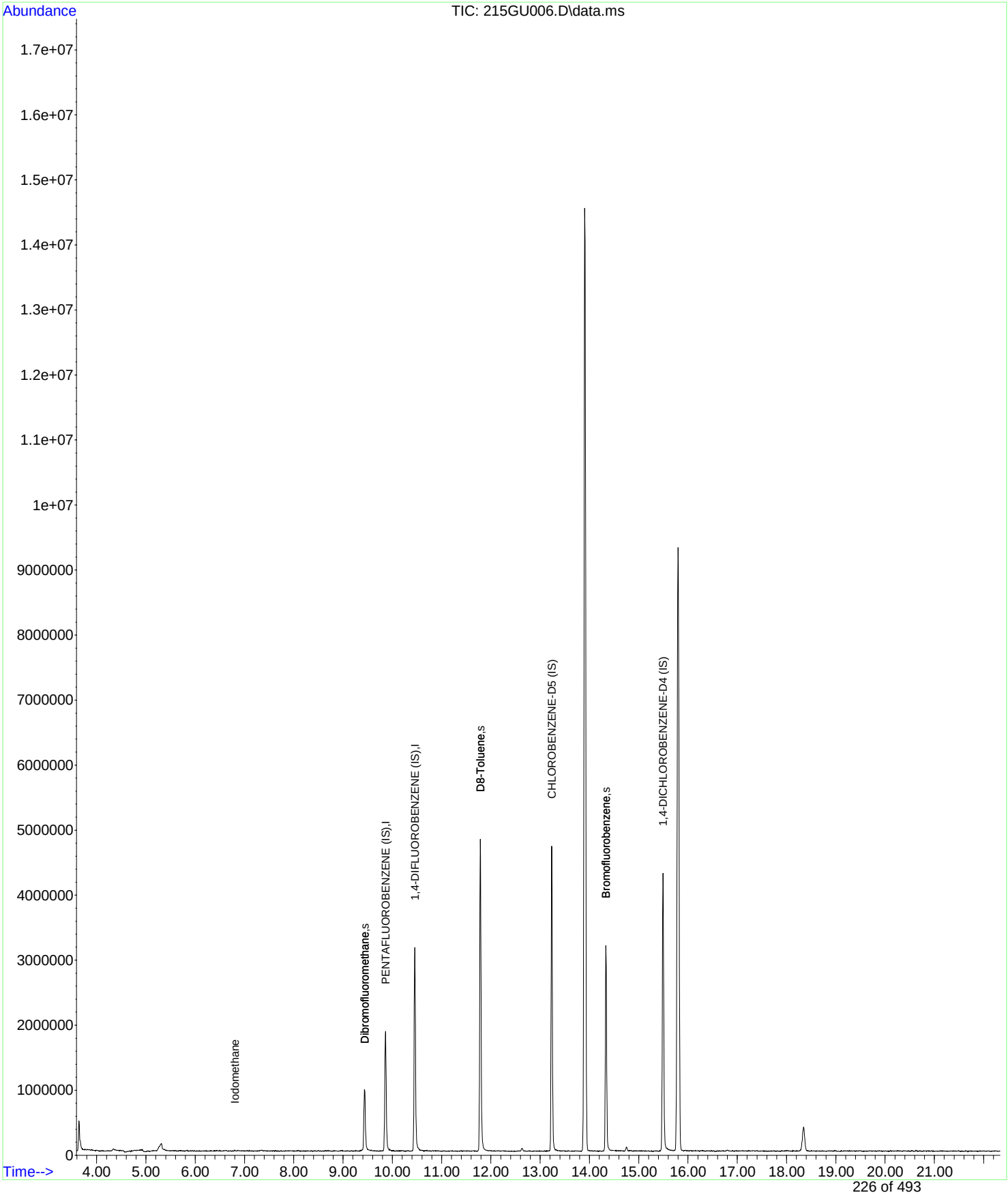
Quant Time: Jul 26 10:35:32 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3313429	50.44 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	0.000		0	N.D. d	
74) Bromofluorobenzene	14.334	95	1414923	49.79 ug/L #	76
75) n-Propylbenzene	14.334	91	5208	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	15.497	146	4951	N.D.	
89) 1,4-Dichlorobenzene	15.497	146	4951	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU006.D
Acq On : 26 Jul 2021 10:02 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 26 10:35:32 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU007.D
Acq On : 26 Jul 2021 10:30 am
Operator : kkw
Sample : AE05878-02
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 26 12:40:55 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1095521	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2649154	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1651203	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1252310	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	688194	52.50	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.00%				
52) D8-Toluene	11.784	98	3369796	51.58	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.16%				
73) Bromofluorobenzene	14.334	95	1423502	50.19	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.38%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.586	62	57573	3.95	ug/L	#	50
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.	d		
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	6.790	142	16163	1.66	ug/L	#	87
13) Carbon Disulfide	0.000		0	N.D.	d		
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.	d		
16) Methylene Chloride	0.000		0	N.D.	d		
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	7.577	96	6137	0.46	ug/L	#	44
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	8.071	45	6809	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	8.323	63	75552	2.99	ug/L		94
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	688624	52.53	ug/L	#	86
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.	d		
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.886	78	9372	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU007.D
Acq On : 26 Jul 2021 10:30 am
Operator : kkw
Sample : AE05878-02
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 26 12:40:55 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

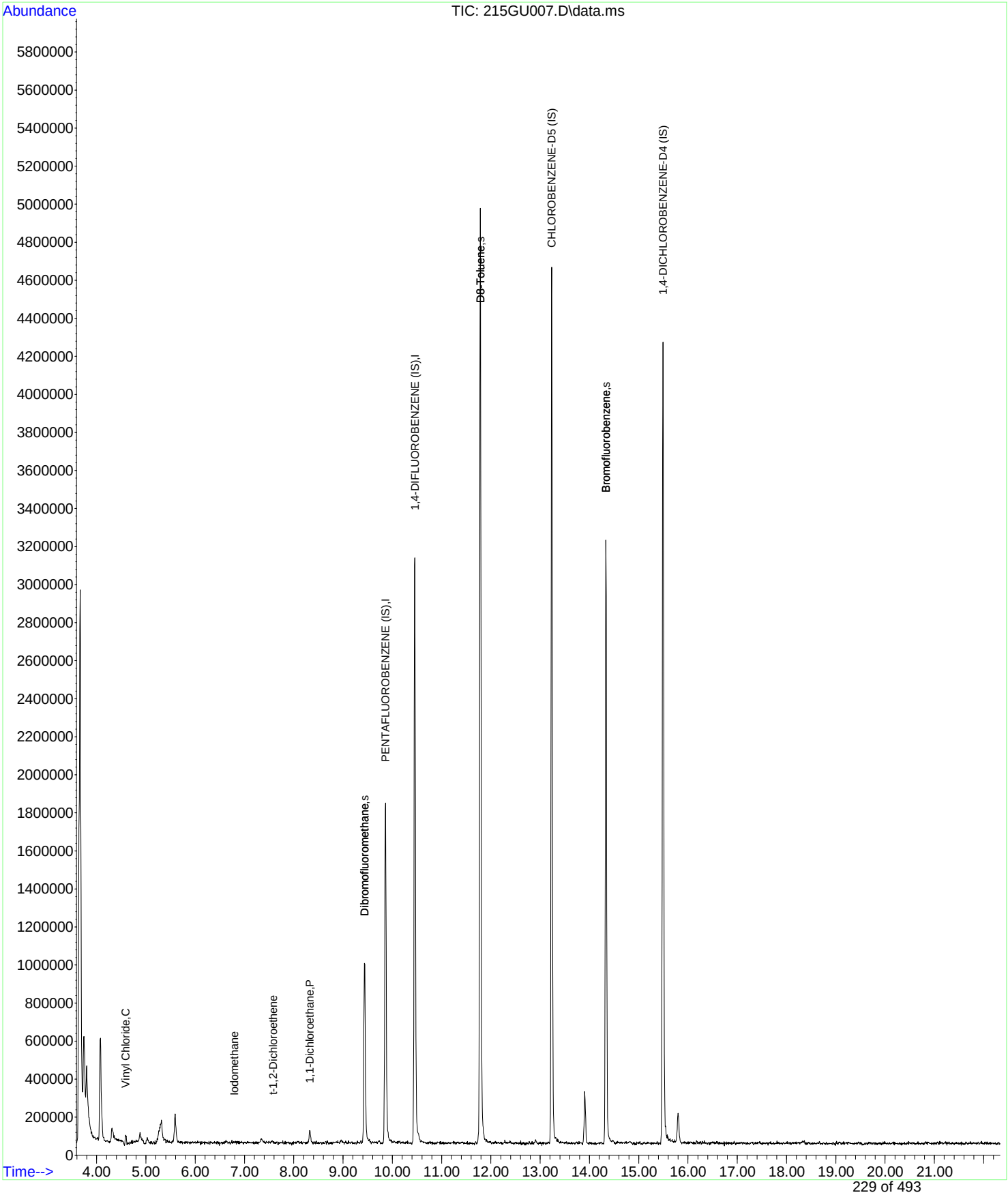
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3369796	51.58 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.843	92	6150	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1423676	50.19 ug/L #	77
75) n-Propylbenzene	14.334	91	6250	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU007.D
Acq On : 26 Jul 2021 10:30 am
Operator : kkw
Sample : AE05878-02
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 26 12:40:55 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU008.D
Acq On : 26 Jul 2021 10:58 am
Operator : kkw
Sample : AE05878-01
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 26 11:23:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	1081654	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2644846	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1596495	50.00	ug/L	# 0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1222070	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	677887	52.38	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.76%			
52) D8-Toluene	11.784	98	3332494	51.09	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.18%			
73) Bromofluorobenzene	14.334	95	1378842	50.28	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.56%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.	d	
4) Vinyl Chloride	4.592	62	201873	14.03	ug/L #	22
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.	d	
7) Trichlorofluoromethane	0.000		0	N.D.	d	
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	6.807	142	16612	1.73	ug/L #	80
13) Carbon Disulfide	0.000		0	N.D.	d	
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.559	96	7388	0.56	ug/L #	84
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	0.000		0	N.D.	d	
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.323	63	233729	9.37	ug/L	97
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.958	96	11949	0.84	ug/L #	82
27) 2,2-Dichloropropane	0.000		0	N.D.	d	
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	677887	52.38	ug/L #	86
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.892	78	19641	0.31	ug/L	93
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.	d	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU008.D
Acq On : 26 Jul 2021 10:58 am
Operator : kkw
Sample : AE05878-01
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 26 11:23:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

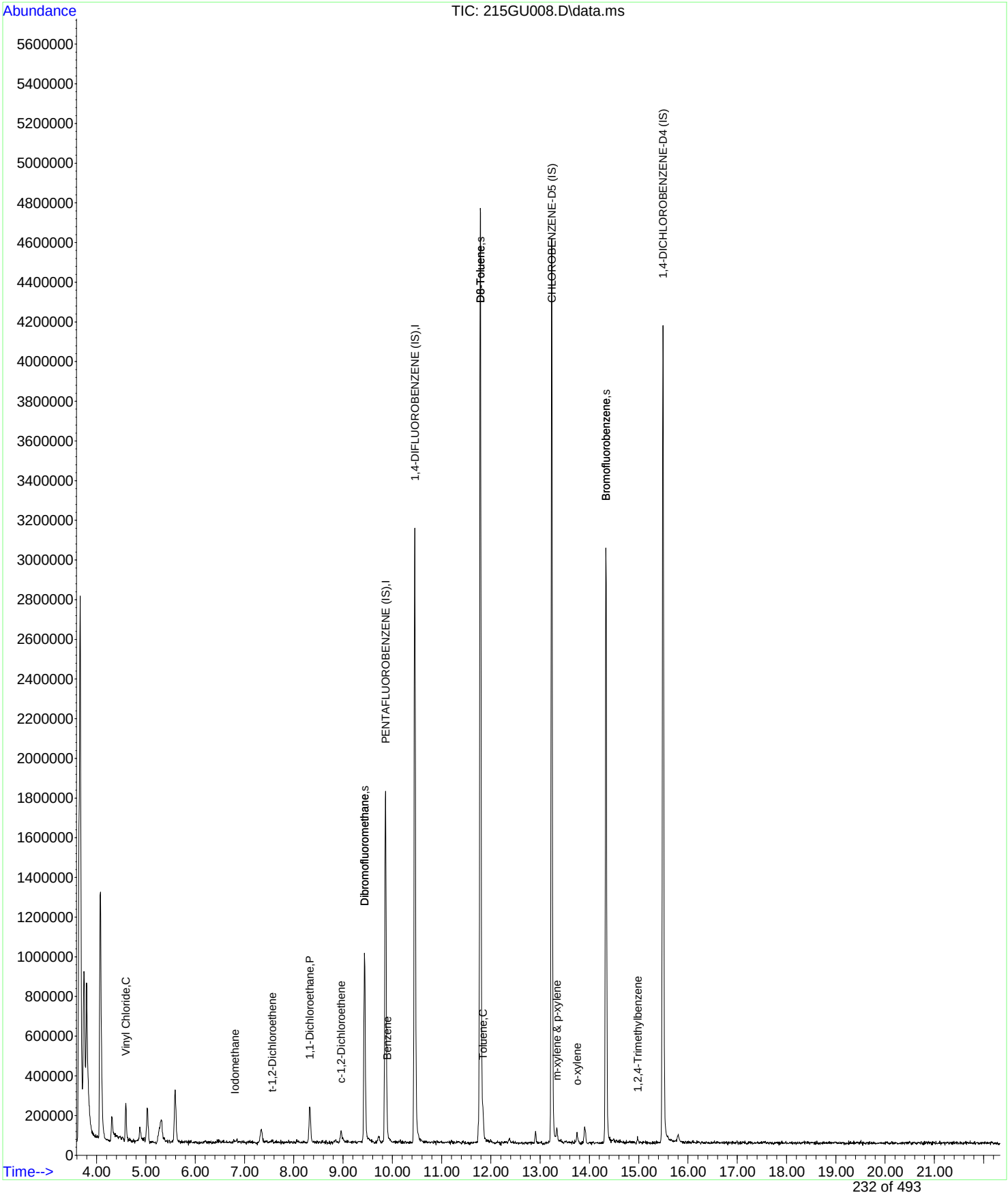
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3328724	51.03 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.837	92	45659	1.17 ug/L	93
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D. d	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	21888	0.77 ug/L	86
69) o-xylene	13.746	106	18797	0.67 ug/L	93
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1378842	50.28 ug/L #	78
75) n-Propylbenzene	14.340	91	5918	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	14926	0.23 ug/L #	85
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	14.557	105	5261	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	14.980	105	14926	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU008.D
Acq On : 26 Jul 2021 10:58 am
Operator : kkw
Sample : AE05878-01
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jul 26 11:23:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU009.D
Acq On : 26 Jul 2021 11:26 am
Operator : kkw
Sample : AE05878-03
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 26 12:43:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1057130	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2544592	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.229	82	1582822	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1222363	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.440	113	667344	52.76	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.52%				
52) D8-Toluene	11.784	98	3278493	52.25	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.50%				
73) Bromofluorobenzene	14.334	95	1372435	50.48	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.96%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D. d			
4) Vinyl Chloride	4.586	62	4938	0.35	ug/L	#	1
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D. d			
13) Carbon Disulfide	6.625	76	5562	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D. d			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	8.329	63	14784	0.61	ug/L	#	75
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	8270	0.60	ug/L	#	90
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.440	113	667344	52.76	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D. d			
41) Benzene	9.892	78	7166	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU009.D
Acq On : 26 Jul 2021 11:26 am
Operator : kkw
Sample : AE05878-03
Misc :
ALS Vial : 8 Sample Multiplier: 1

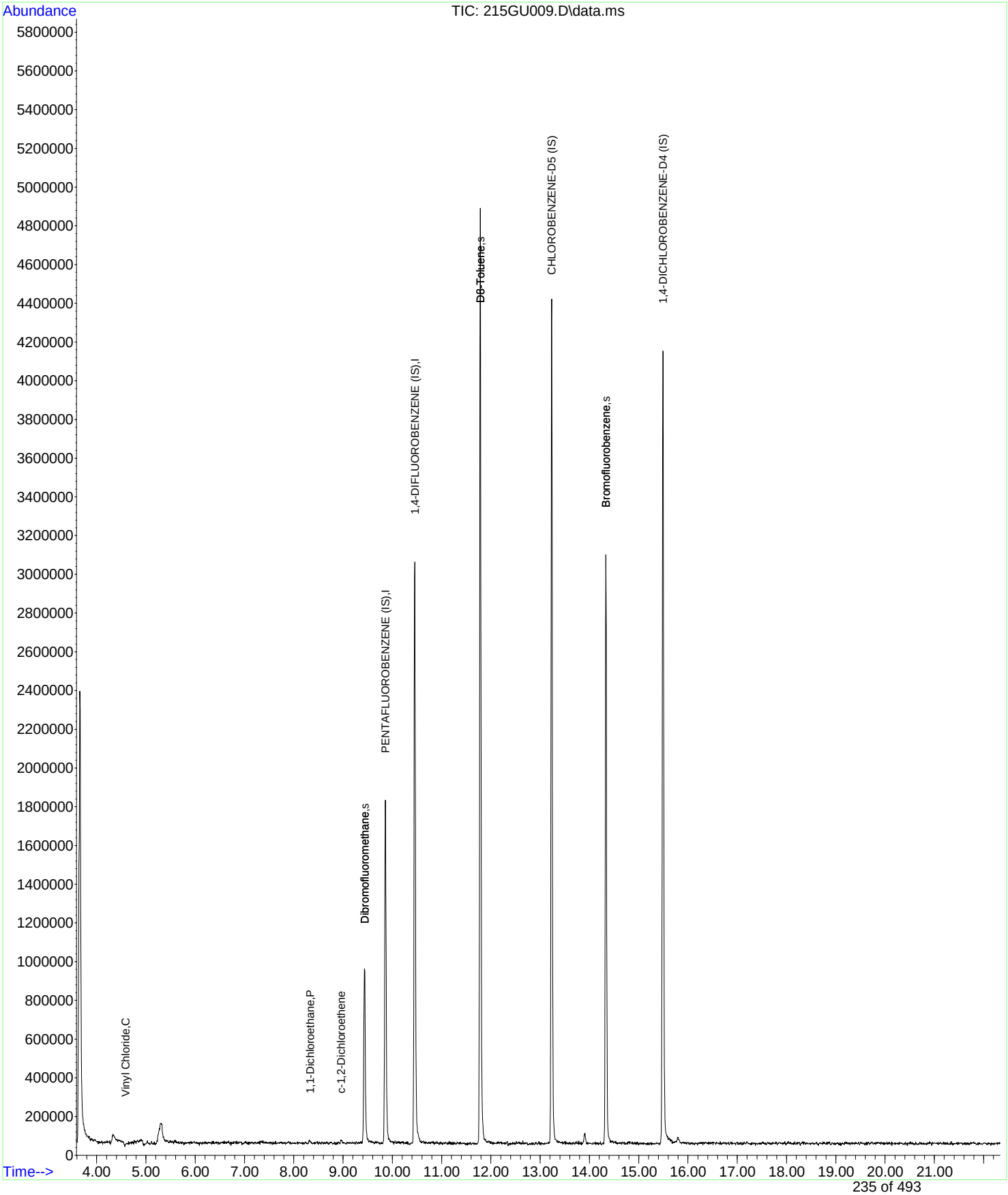
Quant Time: Jul 26 12:43:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3278307	52.24 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1373559	50.52 ug/L #	78
75) n-Propylbenzene	14.334	91	5624	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU009.D
Acq On : 26 Jul 2021 11:26 am
Operator : kkw
Sample : AE05878-03
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 26 12:43:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU010.D
Acq On : 26 Jul 2021 11:54 am
Operator : kkw
Sample : AE05878-04@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 26 12:43:55 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1019659	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2462073	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1532298	50.00	ug/L	# 0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1205294	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	659804	54.08	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.16%			
52) D8-Toluene	11.784	98	3106333	51.16	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.32%			
73) Bromofluorobenzene	14.334	95	1356700	51.54	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 103.08%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.643	76	5656	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.323	63	6967	0.30	ug/L #	53
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.969	96	4276	0.32	ug/L #	44
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	660440	54.13	ug/L #	89
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	9.892	78	6909	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU010.D
Acq On : 26 Jul 2021 11:54 am
Operator : kkw
Sample : AE05878-04@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 26 12:43:55 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

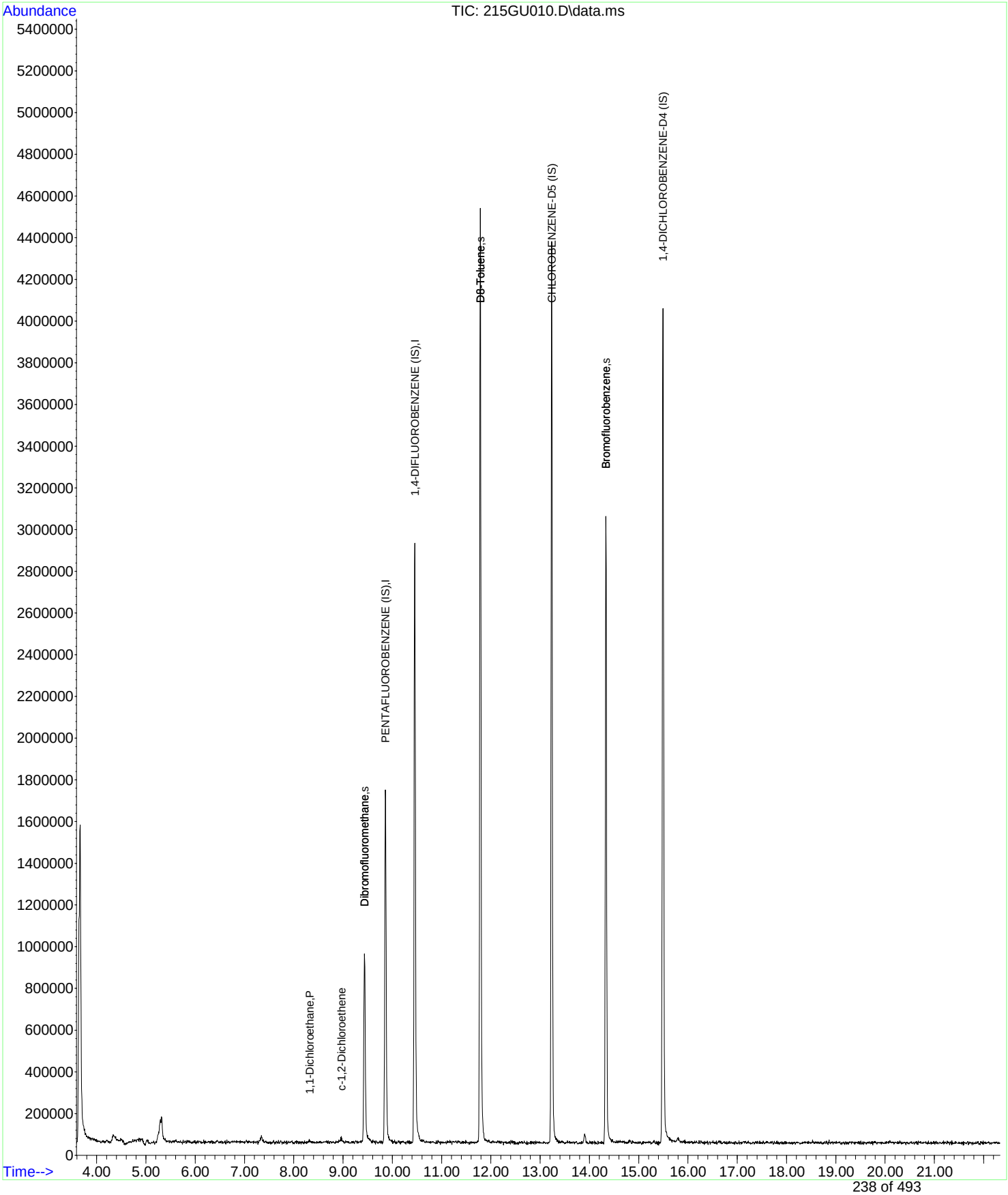
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	3106333	51.16	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1357944	51.59	ug/L #	77
75) n-Propylbenzene	14.334	91	4382	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU010.D
Acq On : 26 Jul 2021 11:54 am
Operator : kkw
Sample : AE05878-04@2X
Misc : 2
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 26 12:43:55 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU011.D
Acq On : 26 Jul 2021 12:22 pm
Operator : kkw
Sample : AE05878-05@5X
Misc : 5
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 26 12:45:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1001965	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2502973	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1565135	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1207716	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	653503	54.51	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.02%				
52) D8-Toluene	11.784	98	3169777	51.35	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.70%				
73) Bromofluorobenzene	14.334	95	1349465	50.19	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.38%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.592	62	407968	30.61	ug/L		94
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D. d			
13) Carbon Disulfide	6.631	76	6136	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	729504	55.58	ug/L		97
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	653503	54.51	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.898	78	5890	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.468	130	14536	1.19	ug/L	#	1
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU011.D
Acq On : 26 Jul 2021 12:22 pm
Operator : kkw
Sample : AE05878-05@5X
Misc : 5
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 26 12:45:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

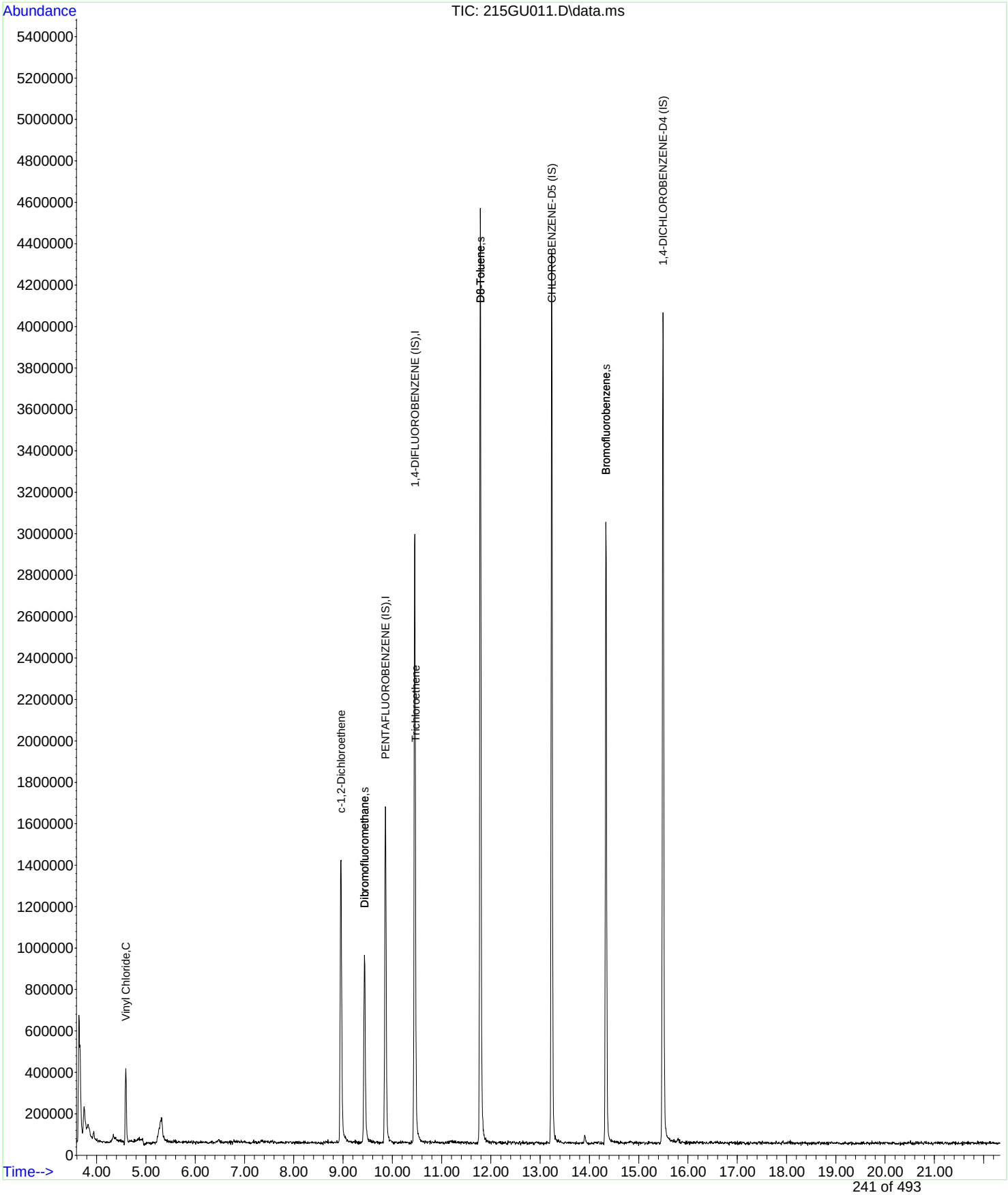
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3169777	51.35 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1350621	50.24 ug/L #	77
75) n-Propylbenzene	14.334	91	5734	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU011.D
Acq On : 26 Jul 2021 12:22 pm
Operator : kkw
Sample : AE05878-05@5X
Misc : 5
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 26 12:45:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU012.D
Acq On : 26 Jul 2021 12:50 pm
Operator : kkw
Sample : AE05878-06
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 26 13:13:33 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.863	168	991122	50.00 ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2435457	50.00 ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1508234	50.00 ug/L	# 0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1172707	50.00 ug/L	0.01
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	632914	53.37 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.74%		
52) D8-Toluene	11.784	98	3110820	51.79 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.58%		
73) Bromofluorobenzene	14.334	95	1320793	50.98 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D.	
4) Vinyl Chloride	4.592	62	22707	1.72 ug/L #	12
5) Bromomethane	0.000		0	N.D.	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	6.637	76	4930	N.D.	
14) 3-chloropropene	0.000		0	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.565	96	4133	0.34 ug/L #	69
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D.	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	0.000		0	N.D.	
26) c-1,2-Dichloroethene	8.958	96	240511	18.53 ug/L	97
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	634053	53.46 ug/L #	86
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D.	
40) Carbon Tetrachloride	0.000		0	N.D.	
41) Benzene	9.892	78	5997	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.456	130	28046	2.35 ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU012.D
Acq On : 26 Jul 2021 12:50 pm
Operator : kkw
Sample : AE05878-06
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 26 13:13:33 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

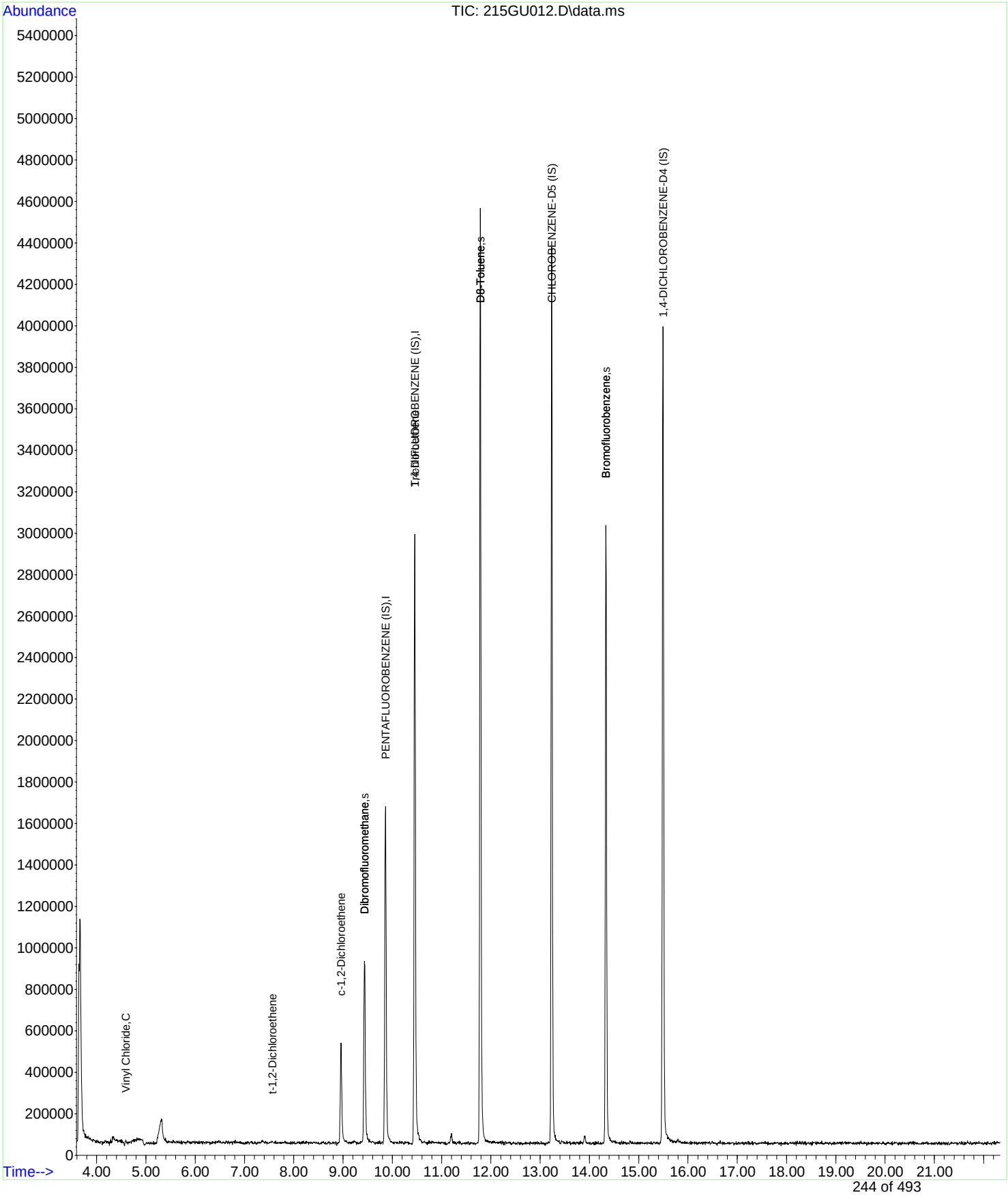
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3110820	51.79 ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1320793	50.98 ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU012.D
Acq On : 26 Jul 2021 12:50 pm
Operator : kkw
Sample : AE05878-06
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 26 13:13:33 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU013.D
Acq On : 26 Jul 2021 1:18 pm
Operator : kkw
Sample : AE05878-07@1000X
Misc : 1000
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 26 13:43:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	961575	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2358635	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1515567	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1167524	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	642226	55.82	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 111.64%				
52) D8-Toluene	11.790	98	3074686	52.86	ug/L		0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.72%				
73) Bromofluorobenzene	14.334	95	1301203	49.98	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.96%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	6.572	151	226367	36.53	ug/L		98
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	6.631	76	4979	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	34323	2.72	ug/L		92
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	642791	55.87	ug/L	#	89
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.904	78	4031	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.462	130	1116320	96.58	ug/L		97
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU013.D
Acq On : 26 Jul 2021 1:18 pm
Operator : kkw
Sample : AE05878-07@1000X
Misc : 1000
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 26 13:43:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

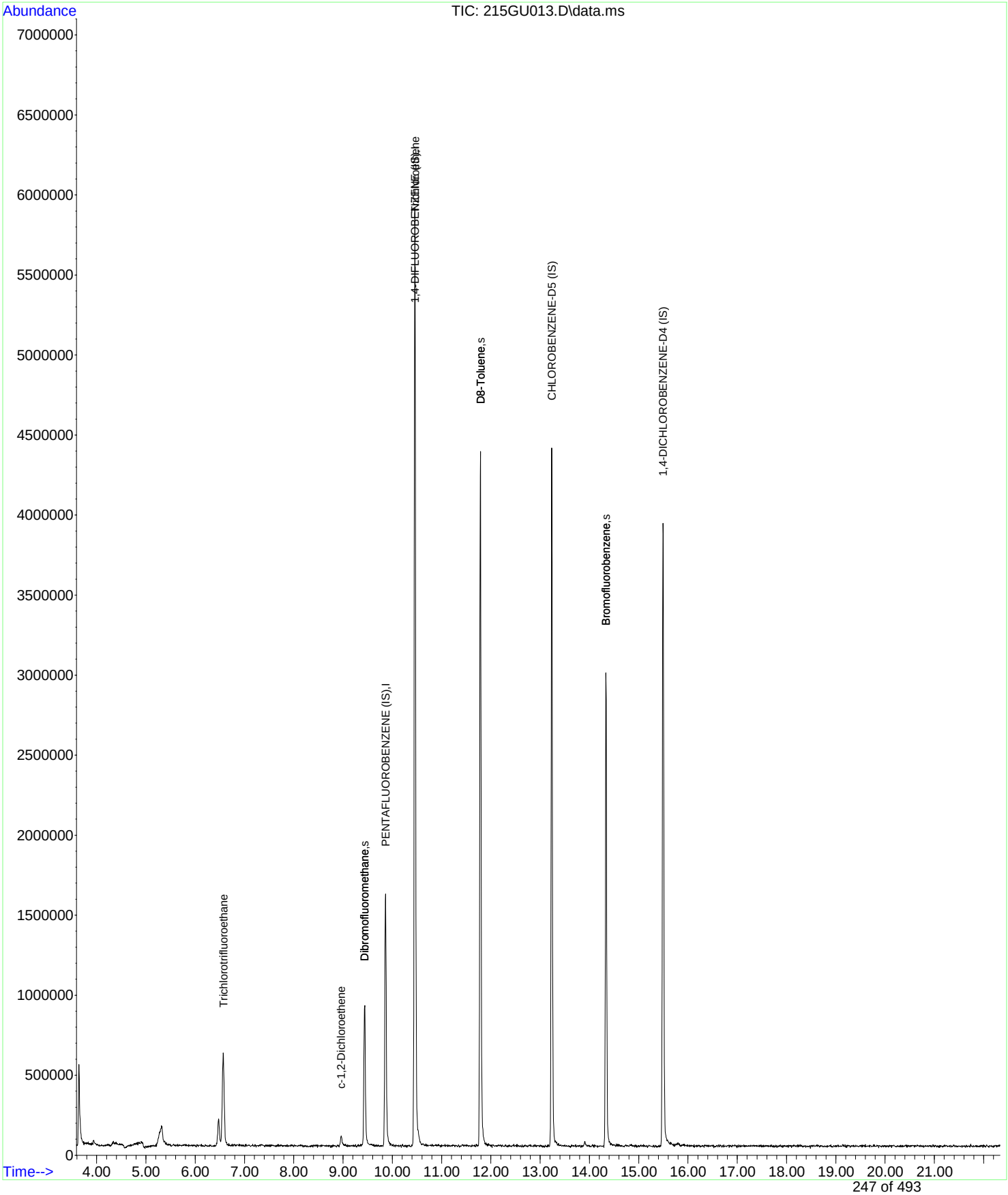
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.790	98	3071909	52.81	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1301203	49.98	ug/L #	78
75) n-Propylbenzene	0.000		0	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU013.D
Acq On : 26 Jul 2021 1:18 pm
Operator : kkw
Sample : AE05878-07@1000X
Misc : 1000
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 26 13:43:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU014.D
Acq On : 26 Jul 2021 1:46 pm
Operator : kkw
Sample : AE05878-08@5000X
Misc : 5000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 27 07:25:00 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	968042	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2317750	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1524084	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1149538	50.00	ug/L		0.01
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	626691	54.10	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.20%				
52) D8-Toluene	11.790	98	3052081	53.40	ug/L		0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 106.80%				
73) Bromofluorobenzene	14.334	95	1303107	49.77	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.54%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	6.566	151	143805	23.05	ug/L		97
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	6.790	142	8548	1.00	ug/L	#	82
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.964	96	38950	3.07	ug/L		98
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	627537	54.18	ug/L	#	87
33) 2-Butanone	0.000		0	N.D. d			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D. d			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.892	78	8896	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.462	130	1108149	97.57	ug/L		98
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU014.D
Acq On : 26 Jul 2021 1:46 pm
Operator : kkw
Sample : AE05878-08@5000X
Misc : 5000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 27 07:25:00 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

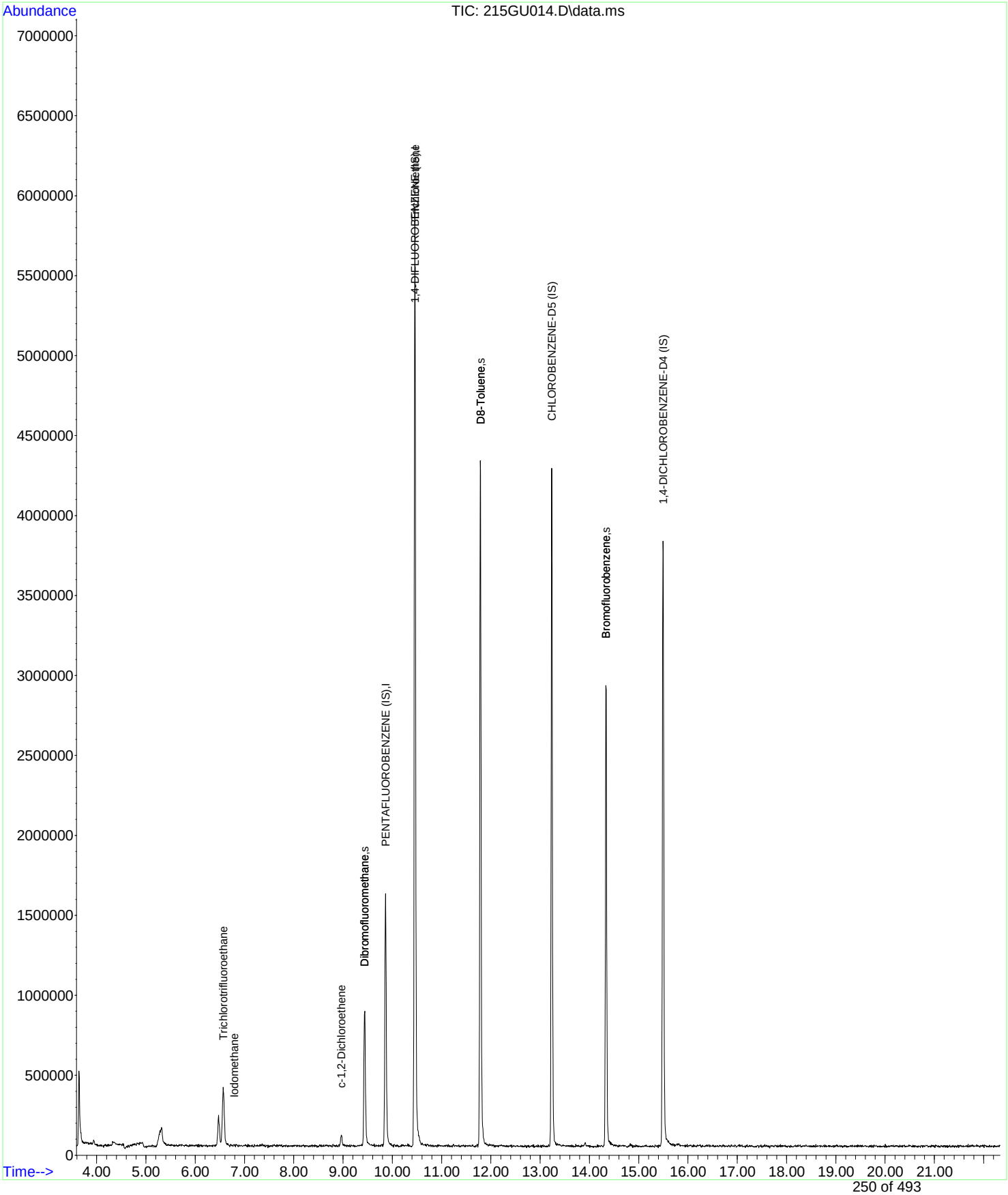
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3052081	53.40 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1303107	49.77 ug/L #	76
75) n-Propylbenzene	14.340	91	5212	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU014.D
Acq On : 26 Jul 2021 1:46 pm
Operator : kkw
Sample : AE05878-08@5000X
Misc : 5000
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 27 07:25:00 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU015.D
Acq On : 26 Jul 2021 2:14 pm
Operator : kkw
Sample : AE05878-09
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 27 07:25:05 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	984947	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2429055	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1512894	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1140192	50.00	ug/L		0.01
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	638000	54.13	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.26%				
52) D8-Toluene	11.790	98	3106995	51.87	ug/L		0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.74%				
73) Bromofluorobenzene	14.334	95	1306817	50.28	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.56%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.592	62	25401	1.94	ug/L	#	32
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	23688	1.84	ug/L	#	83
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.439	113	638000	54.13	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.898	78	4782	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	11.214	88	12634	115.35	ug/L		92
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU015.D
Acq On : 26 Jul 2021 2:14 pm
Operator : kkw
Sample : AE05878-09
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 27 07:25:05 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

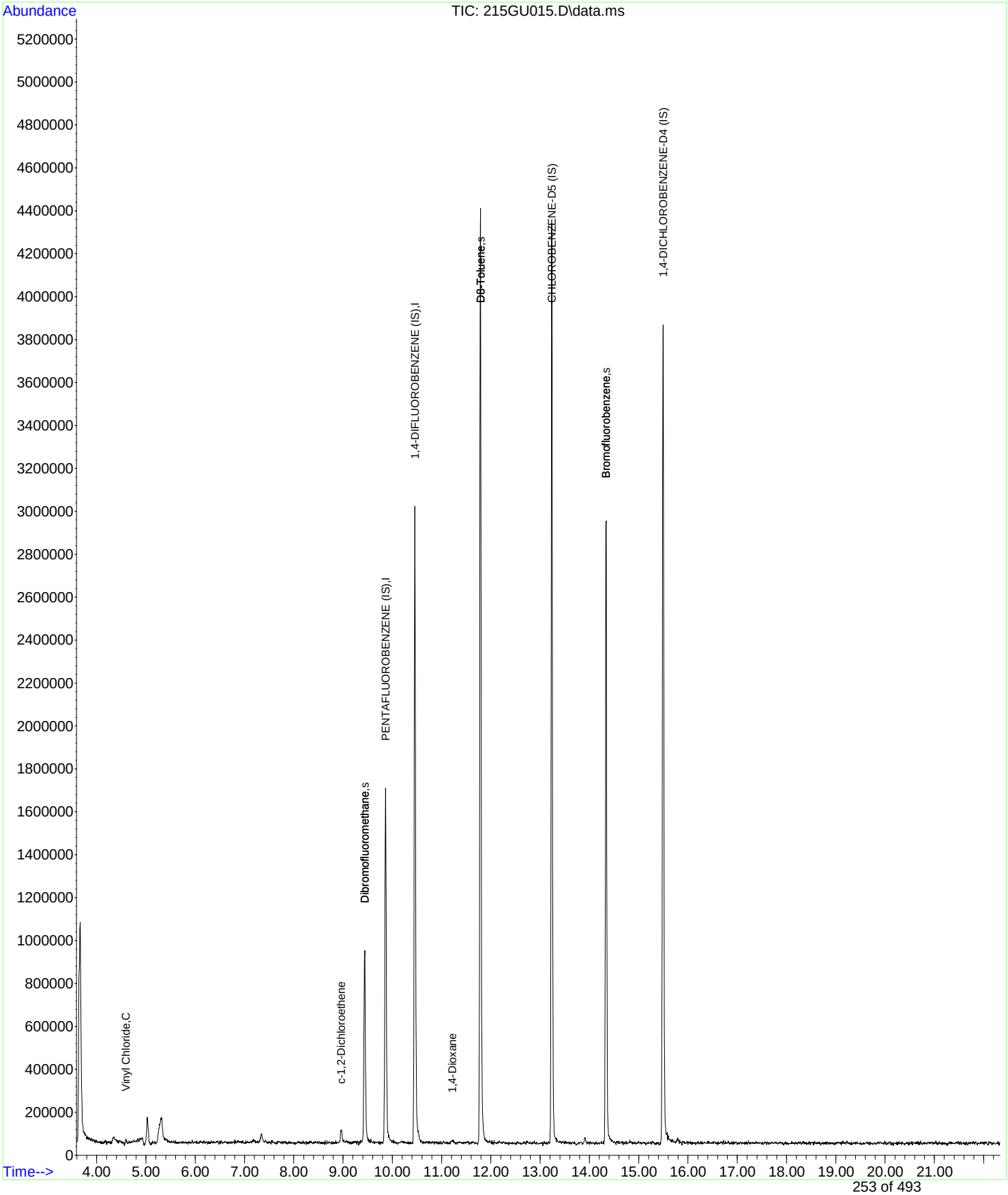
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3102618	51.79 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1306817	50.28 ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU015.D
Acq On : 26 Jul 2021 2:14 pm
Operator : kkw
Sample : AE05878-09
Misc :
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 27 07:25:05 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU016.D
Acq On : 26 Jul 2021 2:42 pm
Operator : kkw
Sample : AE05878-10
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 27 07:25:09 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	949225	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2386925	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1493178	50.00	ug/L	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1117556	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	621407	54.71	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.42%			
52) D8-Toluene	11.790	98	3038858	51.63	ug/L	0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.26%			
73) Bromofluorobenzene	14.334	95	1263964	49.28	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.56%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.654	76	4288	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.	d	
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.952	96	6789	0.55	ug/L #	71
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	621407	54.71	ug/L #	88
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.892	78	9603	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU016.D
Acq On : 26 Jul 2021 2:42 pm
Operator : kkw
Sample : AE05878-10
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 27 07:25:09 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

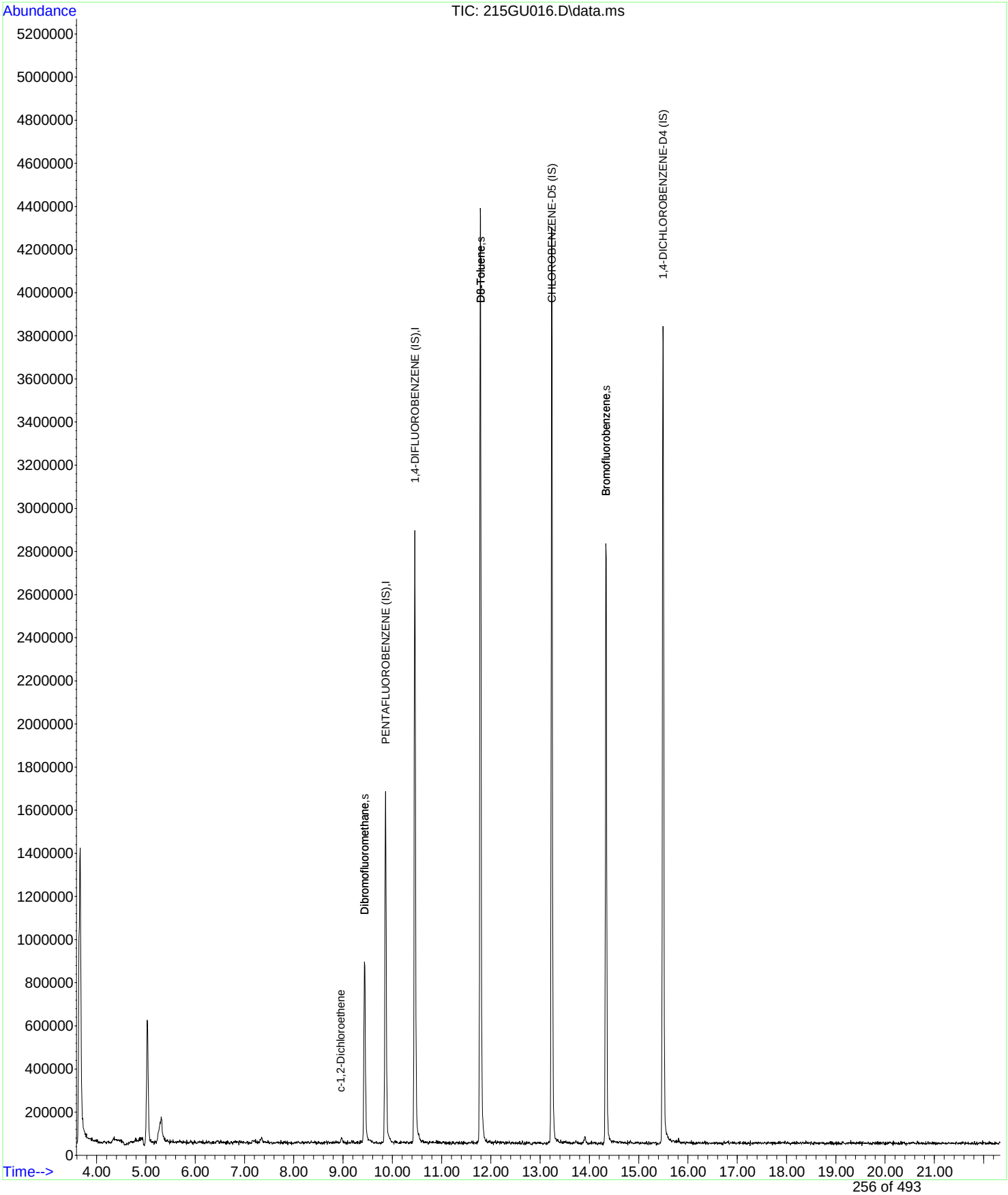
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.790	98	3038858	51.63	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1265461	49.34	ug/L #	79
75) n-Propylbenzene	14.340	91	5555	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU016.D
Acq On : 26 Jul 2021 2:42 pm
Operator : kkw
Sample : AE05878-10
Misc :
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 27 07:25:09 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU017.D
Acq On : 26 Jul 2021 3:10 pm
Operator : kkw
Sample : AE05878-11
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 27 07:25:13 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	975181	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2376404	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1480189	50.00	ug/L	# 0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1155350	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.433	113	651339	55.82	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 111.64%			
52) D8-Toluene	11.784	98	3115027	53.15	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 106.30%			
73) Bromofluorobenzene	14.334	95	1301827	51.20	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 102.40%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	4.592	62	364343	28.09	ug/L	94
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.637	76	6258	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	7.430	43	23292	5.62	ug/L #	79
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	7.565	96	9148	0.77	ug/L #	60
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.958	96	1178296	92.24	ug/L	97
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.433	113	651339	55.82	ug/L #	93
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.903	78	4943	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	223717	19.21	ug/L	84
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	11.784	75	4237	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU017.D
Acq On : 26 Jul 2021 3:10 pm
Operator : kkw
Sample : AE05878-11
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 27 07:25:13 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

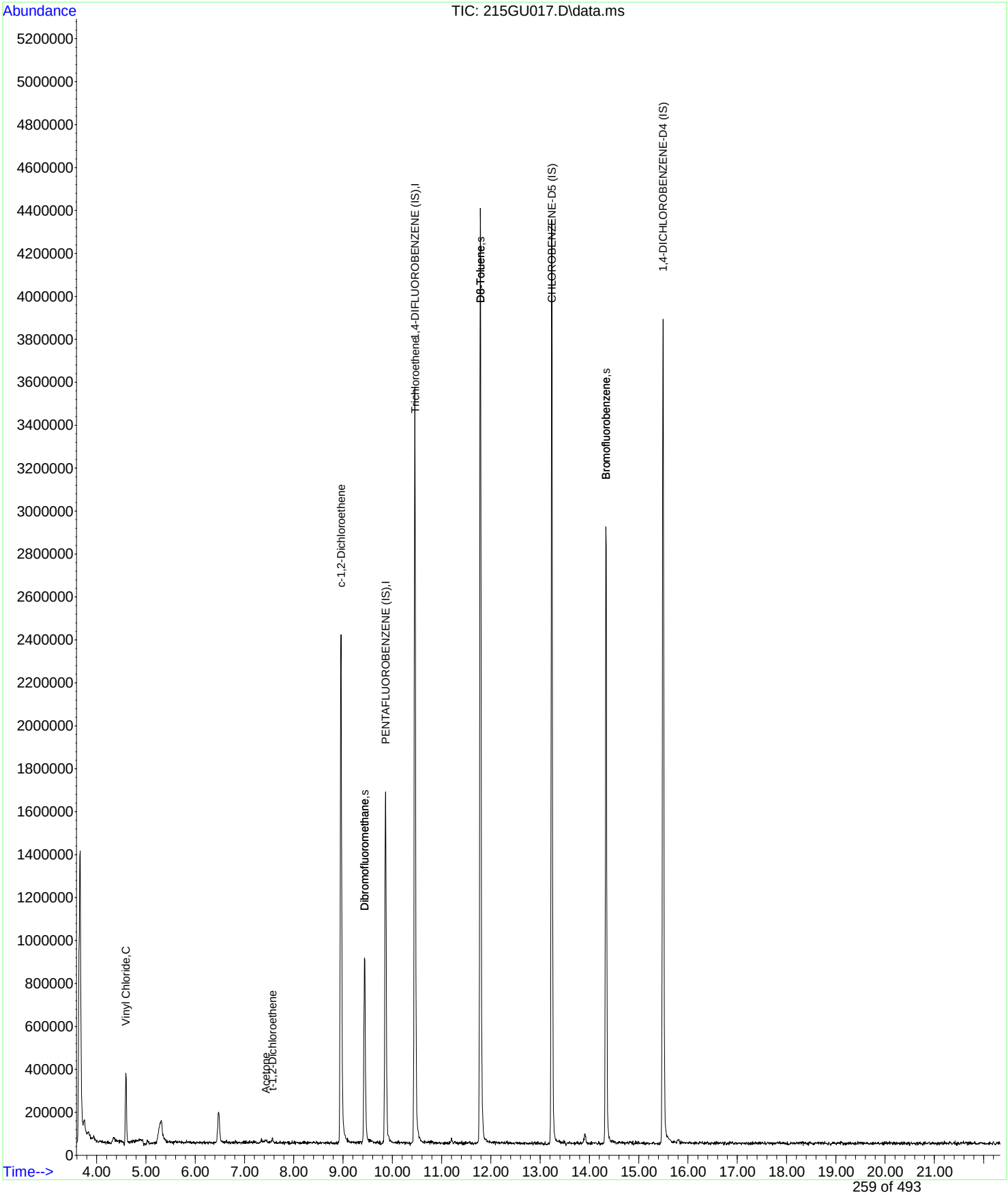
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3115027	53.15 ug/L	97
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1302675	51.23 ug/L #	78
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU017.D
Acq On : 26 Jul 2021 3:10 pm
Operator : kkw
Sample : AE05878-11
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 27 07:25:13 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU018.D
Acq On : 26 Jul 2021 3:38 pm
Operator : kkw
Sample : AE05878-12@25X
Misc : 25
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 27 07:25:17 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.863	168	977873	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2373184	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1498947	50.00	ug/L	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1173705	50.00	ug/L	0.01
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	642564	54.92	ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 109.84%			
52) D8-Toluene	11.790	98	3072279	52.50	ug/L	0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.00%			
73) Bromofluorobenzene	14.340	95	1310752	50.91	ug/L	0.01
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	4.592	62	74566	5.73	ug/L	97
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	6.555	96	5730	0.55	ug/L #	1
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	7.565	96	5251	0.44	ug/L #	62
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.958	96	1644637	128.39	ug/L	97
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.439	113	642564	54.92	ug/L #	90
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D. d		
41) Benzene	9.904	78	4999	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	499218	42.93	ug/L	98
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU018.D
Acq On : 26 Jul 2021 3:38 pm
Operator : kkw
Sample : AE05878-12@25X
Misc : 25
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 27 07:25:17 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

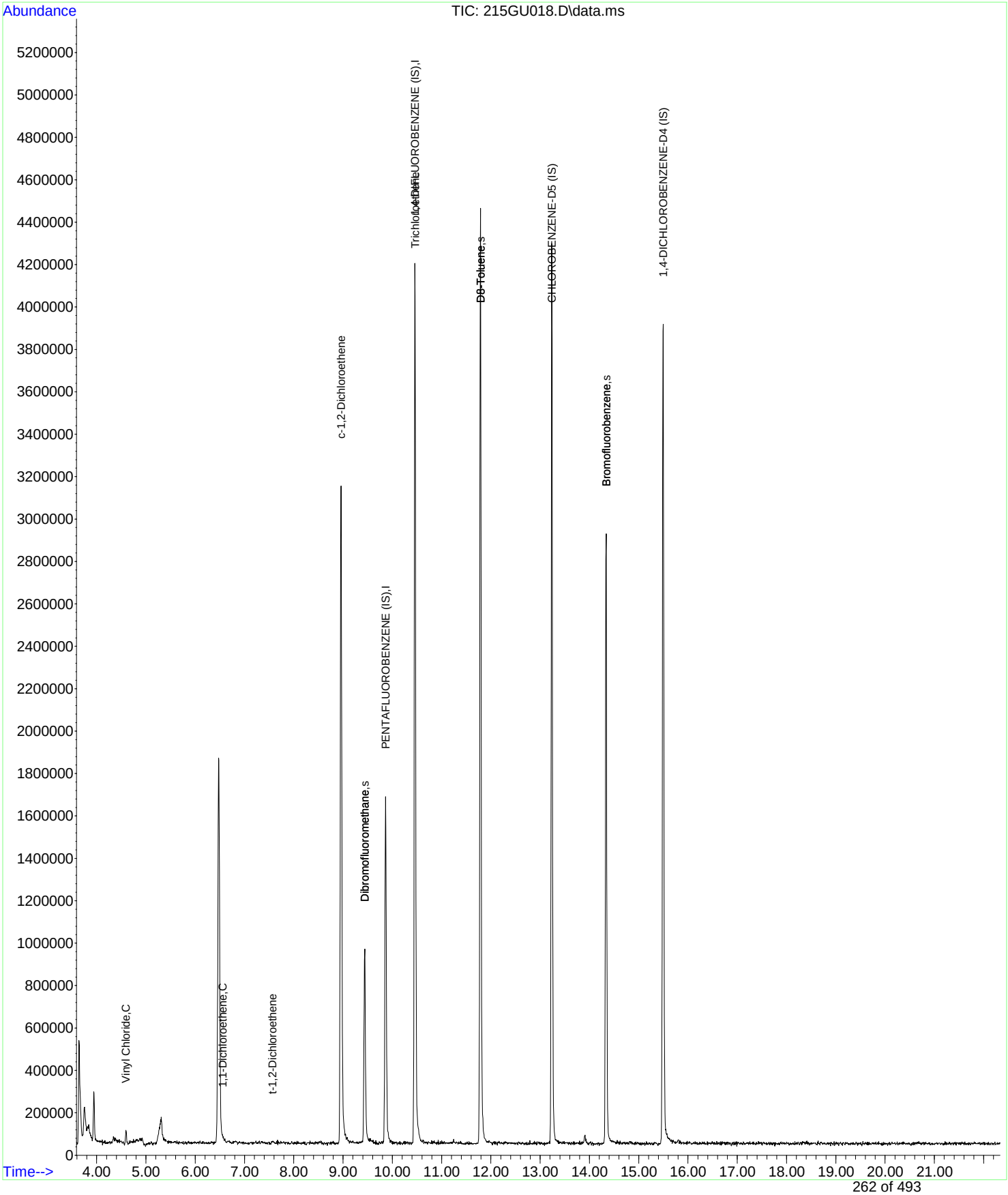
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.790	98	3069374	52.45	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.340	95	1310752	50.91	ug/L #	76
75) n-Propylbenzene	14.334	91	4980	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU018.D
Acq On : 26 Jul 2021 3:38 pm
Operator : kkw
Sample : AE05878-12@25X
Misc : 25
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 27 07:25:17 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU019.D
Acq On : 26 Jul 2021 4:07 pm
Operator : kkw
Sample : AE05878-13
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 27 07:25:21 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	933431	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2310606	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1438993	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1103603	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.440	113	616772	55.22	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 110.44%				
52) D8-Toluene	11.784	98	2947488	51.73	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.46%				
73) Bromofluorobenzene	14.334	95	1260519	50.99	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.98%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D. d			
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	6.572	151	5280	0.88	ug/L	#	1
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D. d			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	8.447	43	4077	N.D.			
26) c-1,2-Dichloroethene	8.964	96	188817	15.44	ug/L		92
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.440	113	616772	55.22	ug/L	#	89
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.898	78	4443	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.468	130	22601	2.00	ug/L	#	1
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU019.D
Acq On : 26 Jul 2021 4:07 pm
Operator : kkw
Sample : AE05878-13
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 27 07:25:21 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

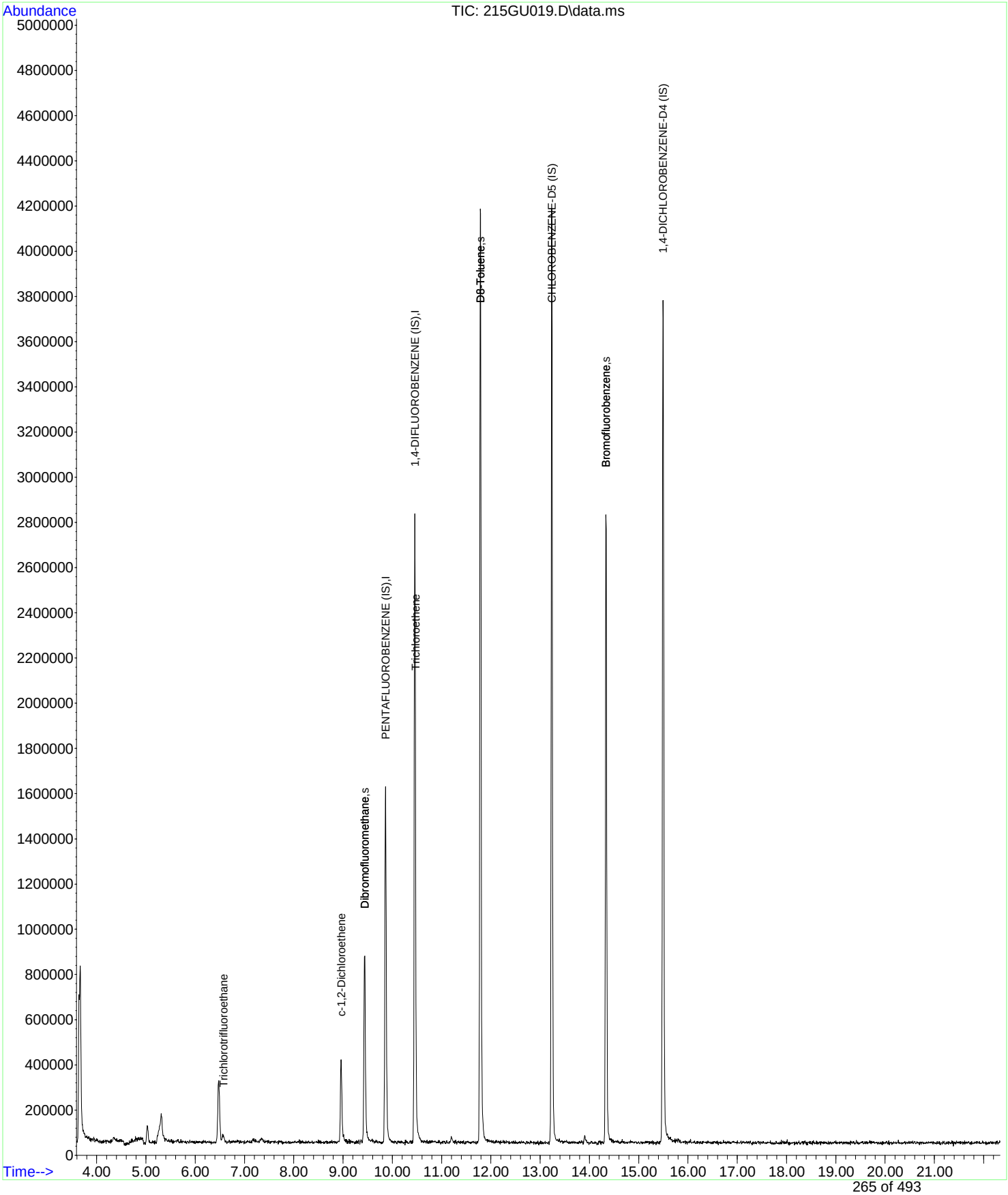
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2947488	51.73 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1261963	51.05 ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU019.D
Acq On : 26 Jul 2021 4:07 pm
Operator : kkw
Sample : AE05878-13
Misc :
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 27 07:25:21 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU020.D
Acq On : 26 Jul 2021 4:35 pm
Operator : kkw
Sample : AE05878-14@500X
Misc : 500
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 27 07:25:25 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	944988	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2358261	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1474733	50.00	ug/L	# 0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1108340	50.00	ug/L	0.01
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	624582	55.24	ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 110.48%			
52) D8-Toluene	11.790	98	3016591	51.87	ug/L	0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.74%			
73) Bromofluorobenzene	14.334	95	1279926	50.52	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.566	151	233917	38.41	ug/L	97
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.		
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.969	96	9629	0.78	ug/L #	79
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.439	113	625228	55.29	ug/L #	90
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	0.000		0	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.474	130	7625	0.66	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU020.D
Acq On : 26 Jul 2021 4:35 pm
Operator : kkw
Sample : AE05878-14@500X
Misc : 500
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 27 07:25:25 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

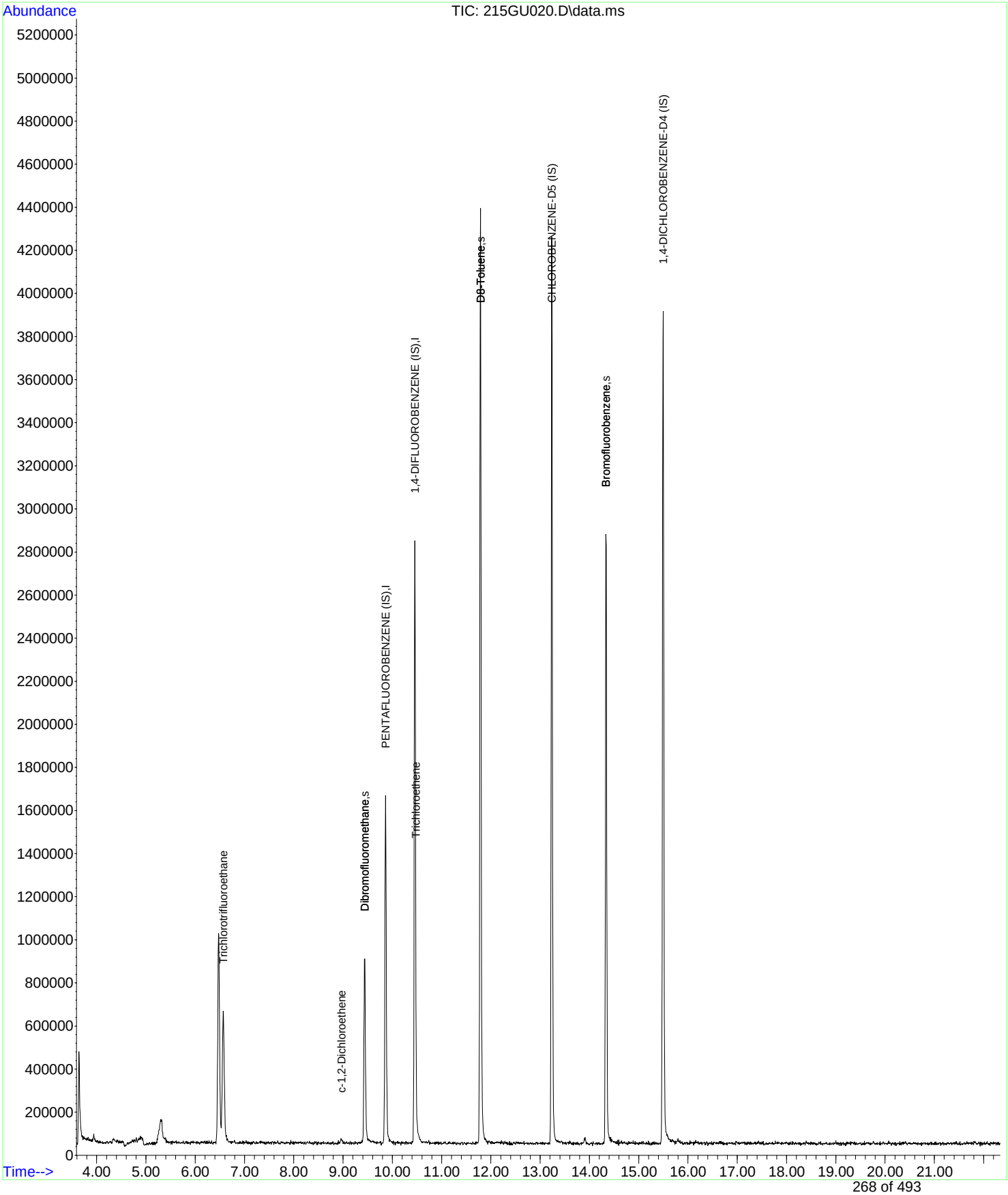
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.790	98	3012902	51.81 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1281335	50.58 ug/L #	76
75) n-Propylbenzene	14.340	91	5030	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU020.D
Acq On : 26 Jul 2021 4:35 pm
Operator : kkw
Sample : AE05878-14@500X
Misc : 500
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 27 07:25:25 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU021.D
Acq On : 26 Jul 2021 5:03 pm
Operator : kkw
Sample : AE05878-15
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 27 07:25:29 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	968444	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2355485	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1470716	50.00	ug/L	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1114514	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.439	113	621534	53.64	ug/L	0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 107.28%			
52) D8-Toluene	11.790	98	2997477	51.60	ug/L	0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.20%			
73) Bromofluorobenzene	14.334	95	1268390	50.21	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.42%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	4.592	62	104123	8.08	ug/L #	87
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.		
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.329	63	4208	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.958	96	74260	5.85	ug/L	97
27) 2,2-Dichloropropane	0.000		0	N.D. d		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.439	113	622152	53.69	ug/L #	89
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D. d		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.898	78	6139	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU021.D
Acq On : 26 Jul 2021 5:03 pm
Operator : kkw
Sample : AE05878-15
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 27 07:25:29 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

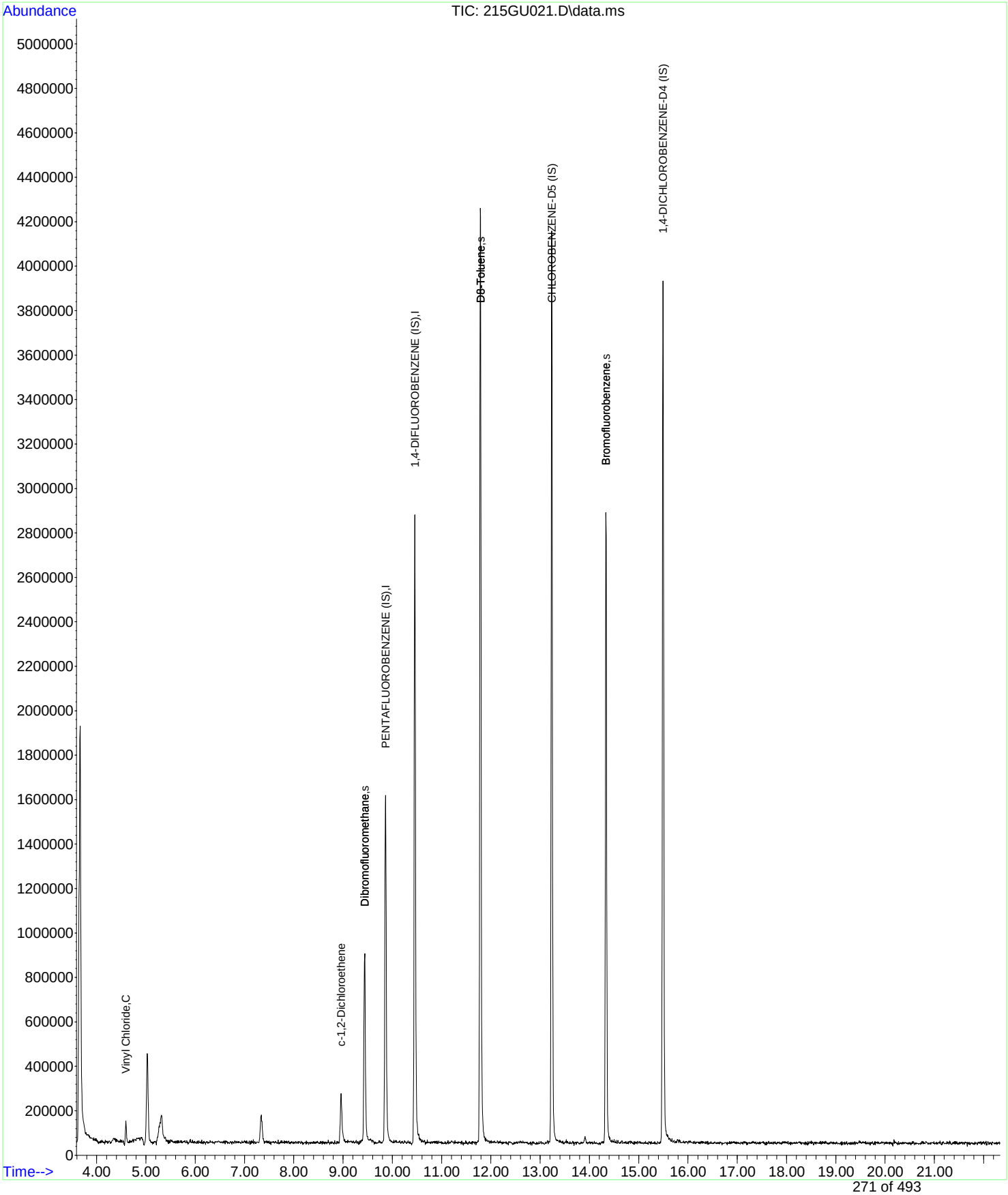
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.790	98	2993911	51.54	ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1268390	50.21	ug/L #	77
75) n-Propylbenzene	14.334	91	5448	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU021.D
Acq On : 26 Jul 2021 5:03 pm
Operator : kkw
Sample : AE05878-15
Misc :
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 27 07:25:29 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU022.D
Acq On : 26 Jul 2021 5:31 pm
Operator : kkw
Sample : AE05878-16
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 27 07:25:33 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.862	168	965323	50.00 ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2378895	50.00 ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1458997	50.00 ug/L	# 0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1119576	50.00 ug/L	0.01
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	624941	54.10 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.20%		
52) D8-Toluene	11.790	98	3010295	51.31 ug/L	0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.62%		
73) Bromofluorobenzene	14.334	95	1280838	51.11 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 102.22%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D.	
4) Vinyl Chloride	4.592	62	142964	11.14 ug/L #	86
5) Bromomethane	0.000		0	N.D.	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D.	
13) Carbon Disulfide	6.649	76	5482	N.D.	
14) 3-chloropropene	0.000		0	N.D.	
15) Acetone	0.000		0	N.D. d	
16) Methylene Chloride	0.000		0	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	7.559	96	6649	0.57 ug/L	91
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D.	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	0.000		0	N.D.	
26) c-1,2-Dichloroethene	8.958	96	959641	75.89 ug/L	97
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	624941	54.10 ug/L #	89
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D.	
40) Carbon Tetrachloride	0.000		0	N.D.	
41) Benzene	9.898	78	5647	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.462	130	85542	7.34 ug/L #	54
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU022.D
Acq On : 26 Jul 2021 5:31 pm
Operator : kkw
Sample : AE05878-16
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 27 07:25:33 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

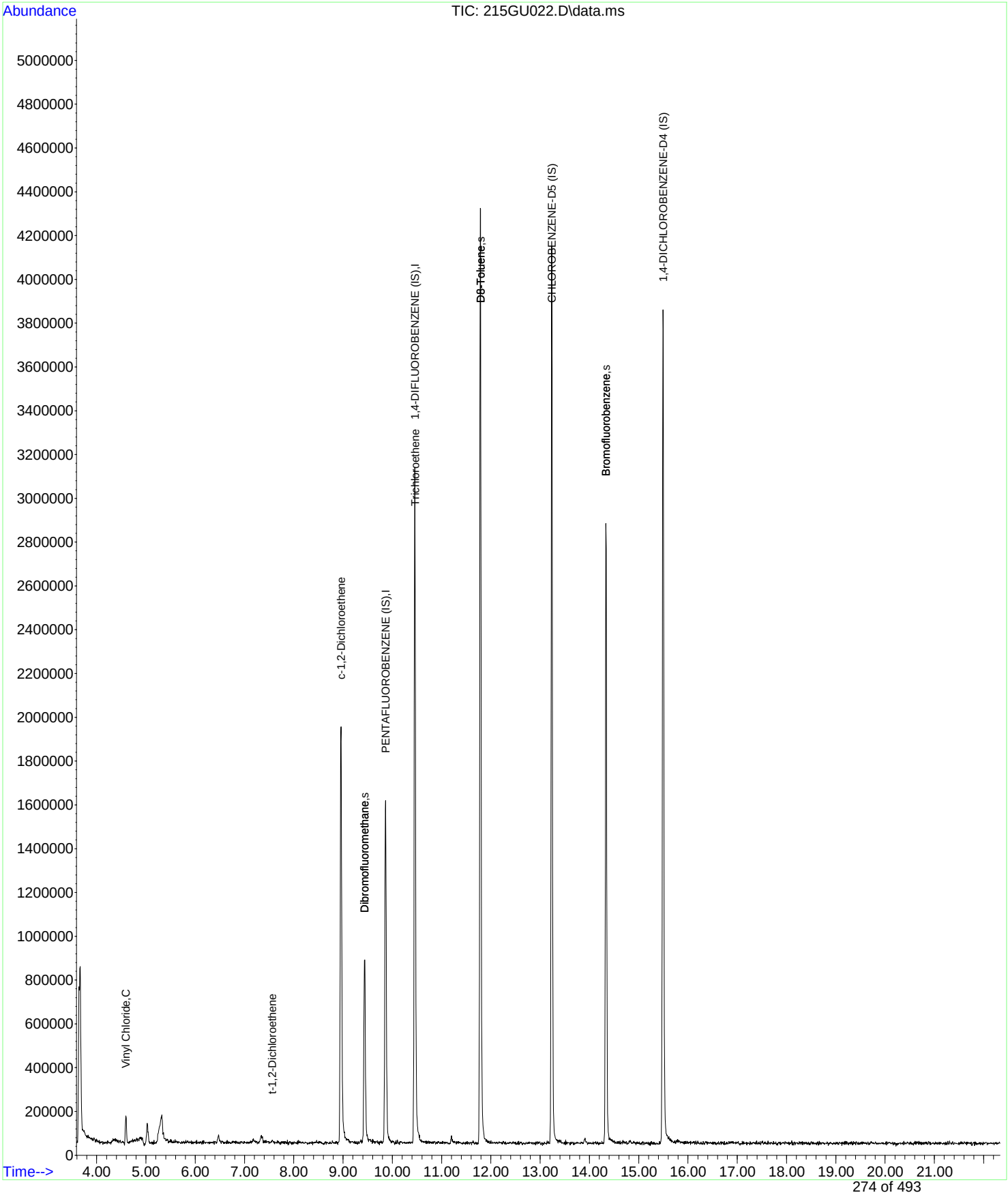
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.790	98	3006868	51.25	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1282836	51.19	ug/L #	76
75) n-Propylbenzene	14.328	91	5873	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU022.D
Acq On : 26 Jul 2021 5:31 pm
Operator : kkw
Sample : AE05878-16
Misc :
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 27 07:25:33 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU023.D
Acq On : 26 Jul 2021 5:59 pm
Operator : kkw
Sample : AE05878-17
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 27 07:25:37 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	969770	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2391287	50.00	ug/L	0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1472112	50.00	ug/L	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.497	152	1117088	50.00	ug/L	0.01
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	631519	54.42	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.84%			
52) D8-Toluene	11.790	98	3014045	51.11	ug/L	0.01
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.22%			
73) Bromofluorobenzene	14.334	95	1280229	50.63	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.26%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.		
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D. d		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D. d		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.963	96	72024	5.67	ug/L	90
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	631739	54.44	ug/L #	91
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.892	78	6414	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.468	130	12503	1.07	ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU023.D
Acq On : 26 Jul 2021 5:59 pm
Operator : kkw
Sample : AE05878-17
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 27 07:25:37 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

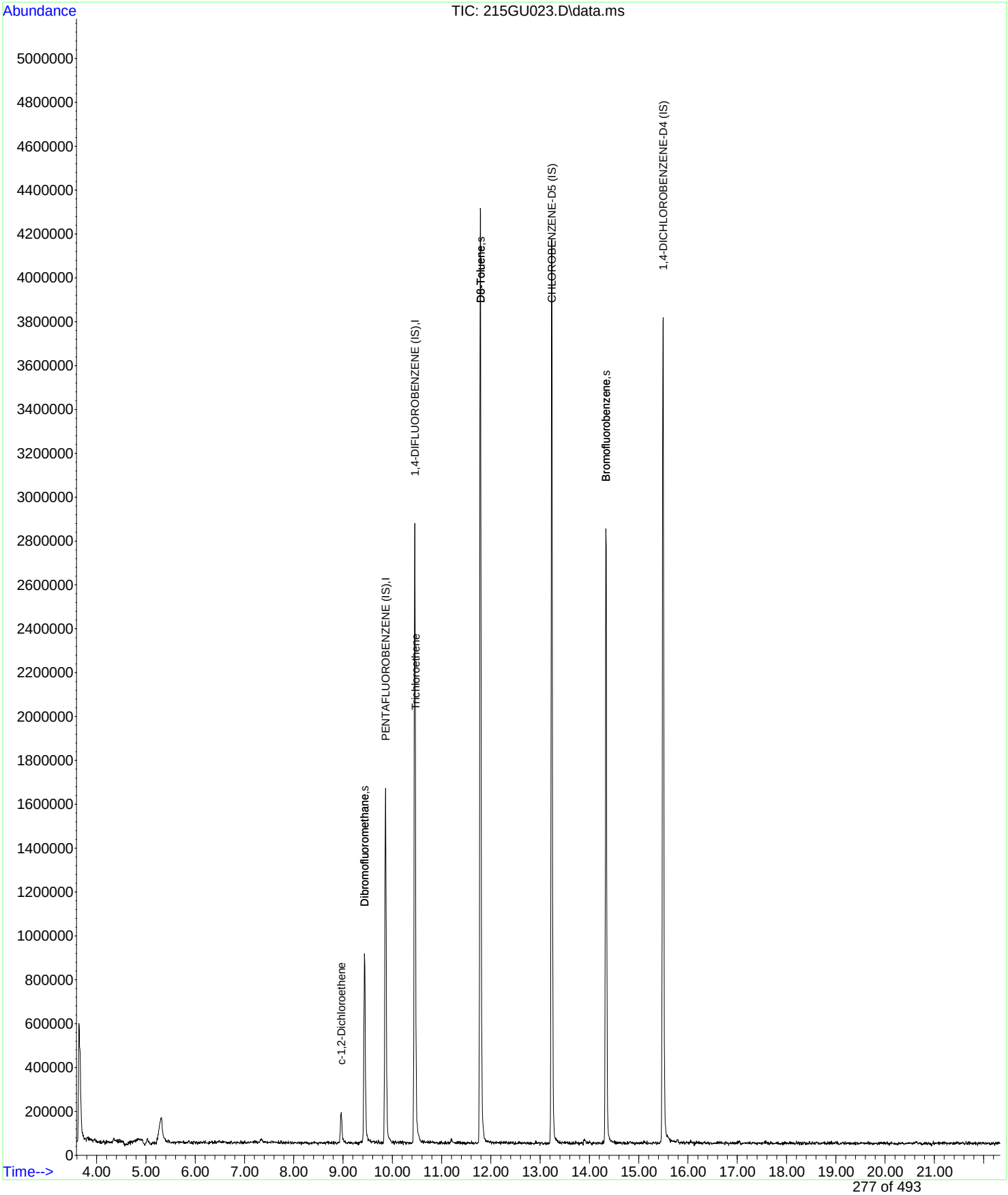
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.790	98	3012348	51.08	ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1280229	50.63	ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU023.D
Acq On : 26 Jul 2021 5:59 pm
Operator : kkw
Sample : AE05878-17
Misc :
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 27 07:25:37 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU024.D
Acq On : 26 Jul 2021 6:27 pm
Operator : kkw
Sample : AE05878-18
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 27 07:25:41 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	949063	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2337063	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1466475	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1117679	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.440	113	604845	53.26	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.52%				
52) D8-Toluene	11.784	98	2967360	51.49	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.98%				
73) Bromofluorobenzene	14.334	95	1273017	50.53	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.06%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.586	62	7986	0.63	ug/L	#	28
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	6.649	76	4335	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.	d		
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.	d		
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.964	96	98062	7.89	ug/L		92
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.440	113	604845	53.26	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.892	78	5649	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.468	130	9882	0.86	ug/L	#	1
44) Methyl cyclohexane	10.462	83	31641	1.27	ug/L	#	37
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU024.D
Acq On : 26 Jul 2021 6:27 pm
Operator : kkw
Sample : AE05878-18
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 27 07:25:41 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

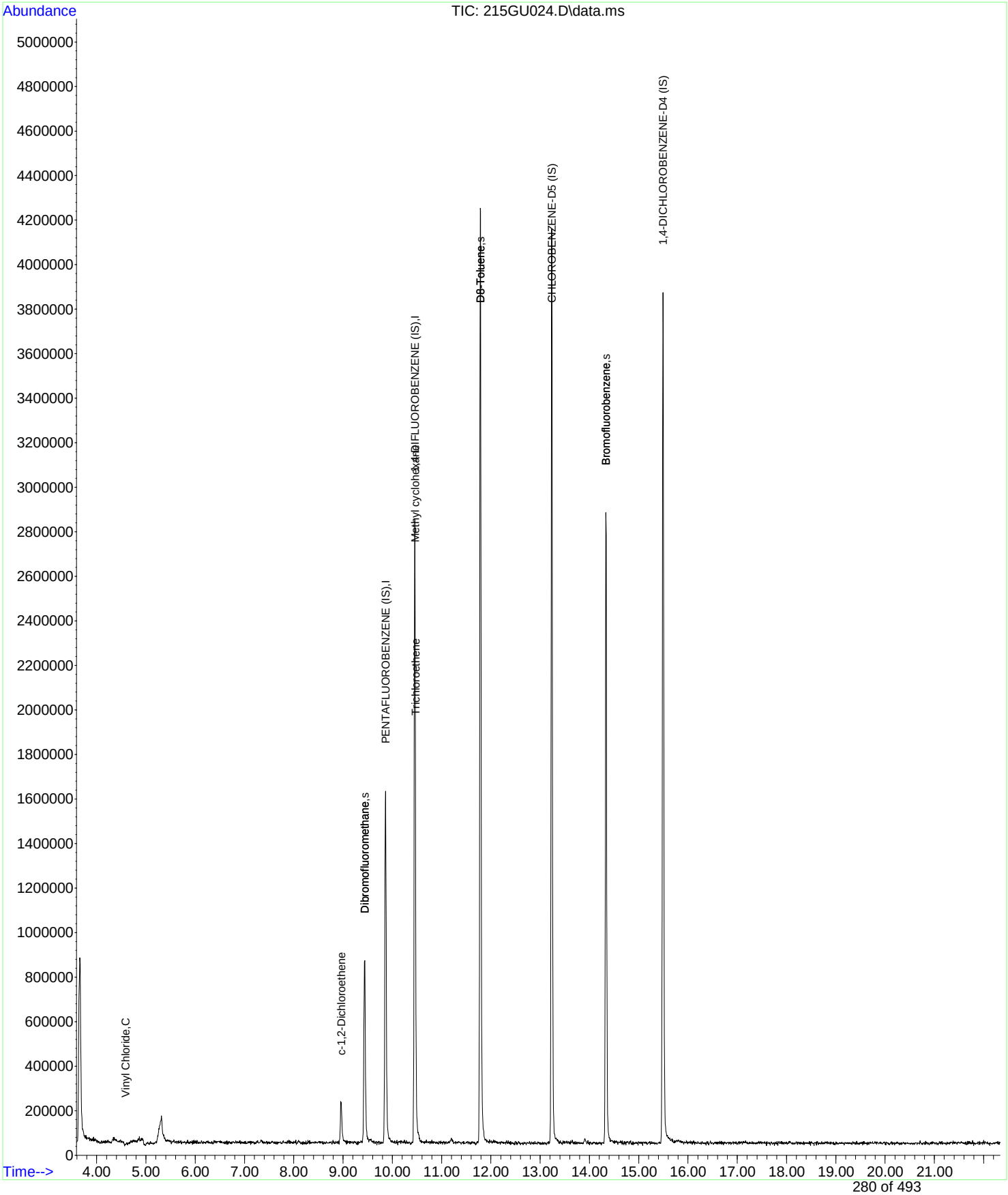
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2961657	51.39	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1273017	50.53	ug/L #	75
75) n-Propylbenzene	14.346	91	4346	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU024.D
Acq On : 26 Jul 2021 6:27 pm
Operator : kkw
Sample : AE05878-18
Misc :
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jul 27 07:25:41 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU025.D
Acq On : 26 Jul 2021 6:55 pm
Operator : kkw
Sample : AE05878-19@2.5X
Misc : 2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 27 07:25:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	940361	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2333267	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1460347	50.00	ug/L	#	0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1126208	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.439	113	612289	54.42	ug/L		0.01
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.84%				
52) D8-Toluene	11.784	98	2975755	51.72	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.44%				
73) Bromofluorobenzene	14.334	95	1266284	50.48	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.96%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.963	96	24506	1.99	ug/L		84
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.439	113	612998	54.48	ug/L	#	89
33) 2-Butanone	0.000		0	N.D. d			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.898	78	4812	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU025.D
Acq On : 26 Jul 2021 6:55 pm
Operator : kkw
Sample : AE05878-19@2.5X
Misc : 2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 27 07:25:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

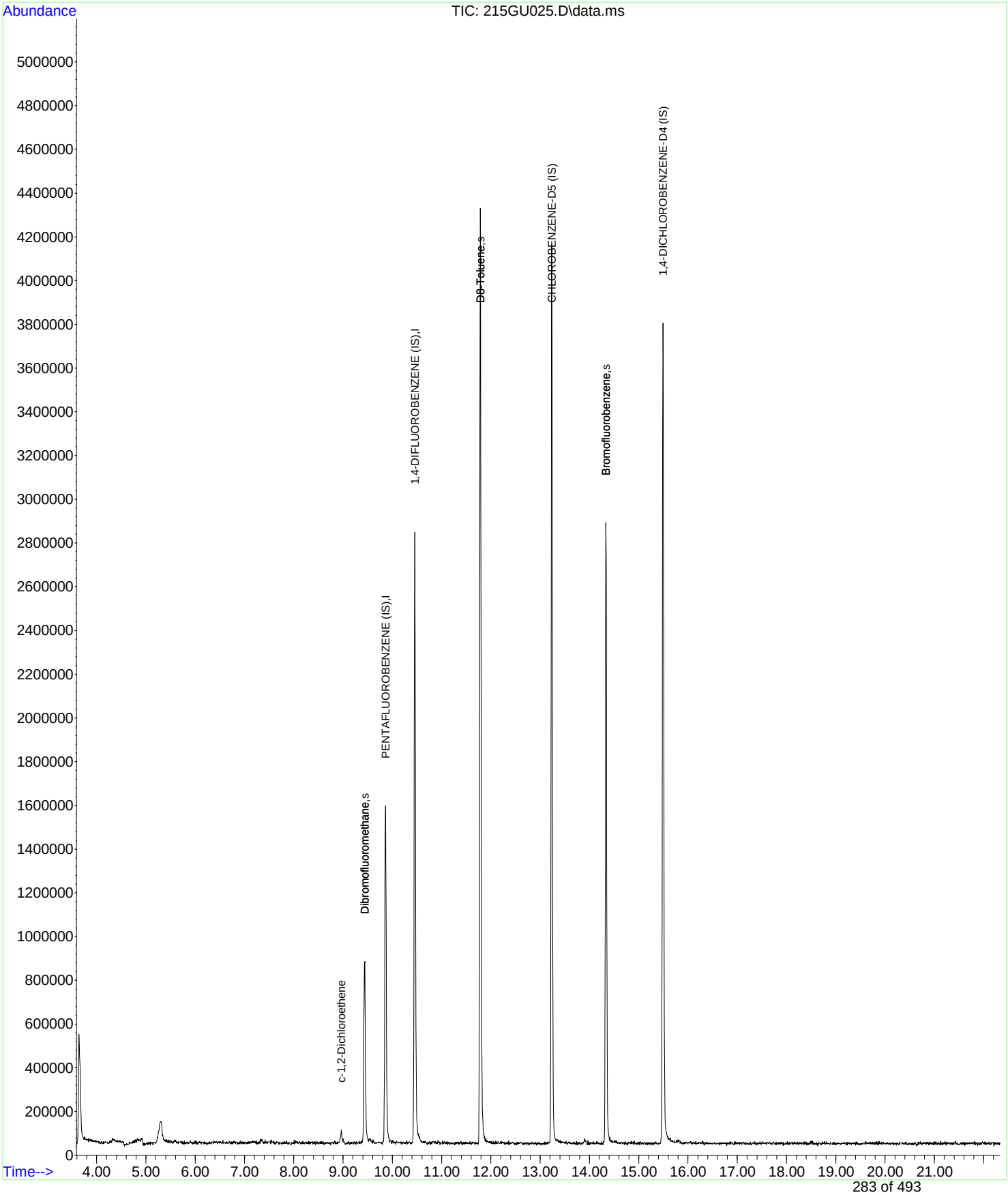
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2975755	51.72 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1267134	50.51 ug/L #	77
75) n-Propylbenzene	14.328	91	5336	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU025.D
Acq On : 26 Jul 2021 6:55 pm
Operator : kkw
Sample : AE05878-19@2.5X
Misc : 2.5
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 27 07:25:45 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU026.D
Acq On : 26 Jul 2021 7:23 pm
Operator : kkw
Sample : 1G26016-MS1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 27 07:25:49 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.862	168	973114	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2356129	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1541359	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1165853	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	630281	54.13	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 108.26%				
52) D8-Toluene	11.784	98	3126429	53.81	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 107.62%				
73) Bromofluorobenzene	14.334	95	1333981	50.38	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.76%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	34346	3.43	ug/L	#	92
3) Chloromethane	4.422	50	154759	10.40	ug/L		99
4) Vinyl Chloride	4.592	62	222641	17.20	ug/L		94
5) Bromomethane	5.244	94	48269	14.63	ug/L		94
6) Chloroethane	5.462	64	131198	18.37	ug/L		96
7) Trichlorofluoromethane	5.714	101	289354	19.54	ug/L		100
8) Diethyl ether	6.190	59	232226	23.09	ug/L		93
9) 1,1-Dichloroethene	6.543	96	232026	22.43	ug/L		96
10) Trichlorotrifluoroethane	6.560	151	138590	22.10	ug/L		98
11) Acrolein	7.036	56	78259	29.96	ug/L		97
12) Iodomethane	6.790	142	194665	22.47	ug/L		98
13) Carbon Disulfide	6.637	76	805962	25.86	ug/L		99
14) 3-chloropropene	7.207	41	420245	23.51	ug/L		99
15) Acetone	7.401	43	193058	46.72	ug/L		98
16) Methylene Chloride	7.348	84	284254	21.43	ug/L		94
17) Methyl Acetate	7.530	43	216270	19.93	ug/L		96
18) t-1,2-Dichloroethene	7.559	96	273096	23.14	ug/L		93
19) Methyl tert-butyl ether	7.641	73	639290	21.37	ug/L		97
20) Acetonitrile	8.059	41	347241	126.43	ug/L	#	92
21) Isopropyl ether	8.059	45	833473	22.20	ug/L		99
22) Chloroprene	8.282	88	258234	22.90	ug/L		99
23) 1,1-Dichloroethane	8.323	63	600333	26.76	ug/L		99
24) Acrylonitrile	8.399	53	126456	24.45	ug/L	#	92
25) Vinyl Acetate	8.552	43	481083	18.06	ug/L		99
26) c-1,2-Dichloroethene	8.958	96	282803	22.19	ug/L		94
27) 2,2-Dichloropropane	9.081	77	341772	21.20	ug/L		98
28) Bromochloromethane	9.193	128	119697	25.42	ug/L		100
29) Cyclohexane	9.198	56	544126	24.33	ug/L		97
30) Chloroform	9.228	83	480005	22.40	ug/L		98
32) Dibromofluoromethane	9.434	113	630281	54.13	ug/L	#	85
33) 2-Butanone	9.551	72	114931	60.01	ug/L		78
34) 1,1,1-Trichloroethane	9.492	97	391273	24.63	ug/L		98
35) 1,1-Dichloropropene	9.616	75	406029	22.98	ug/L		98
36) Propionitrile	9.909	54	59703	25.87	ug/L	#	1
37) Methacrylonitrile	9.915	41	306327	33.89	ug/L	#	80
38) Isobutyl Alcohol	9.909	43	229650	207.96	ug/L	#	48
40) Carbon Tetrachloride	9.422	117	284480	21.12	ug/L		86
41) Benzene	9.886	78	1246724	22.33	ug/L		99
42) 1,2-Dichloroethane	10.097	62	343537	20.75	ug/L		98
43) Trichloroethene	10.462	130	257820	22.33	ug/L		90
44) Methyl cyclohexane	10.462	83	563037	22.37	ug/L		95
45) Dibromomethane	10.914	93	170678	20.78	ug/L		97
46) 1,2-Dichloropropane	10.991	63	331431	20.86	ug/L		98
47) Bromodichloromethane	11.020	83	344175	22.08	ug/L		99
48) Methyl Methacrylate	11.085	69	228977	18.22	ug/L		96
49) 1,4-Dioxane	11.196	88	54829	473.39	ug/L	#	80
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.619	75	457543	19.55	ug/L		96

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU026.D
Acq On : 26 Jul 2021 7:23 pm
Operator : kkw
Sample : 1G26016-MS1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 27 07:25:49 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

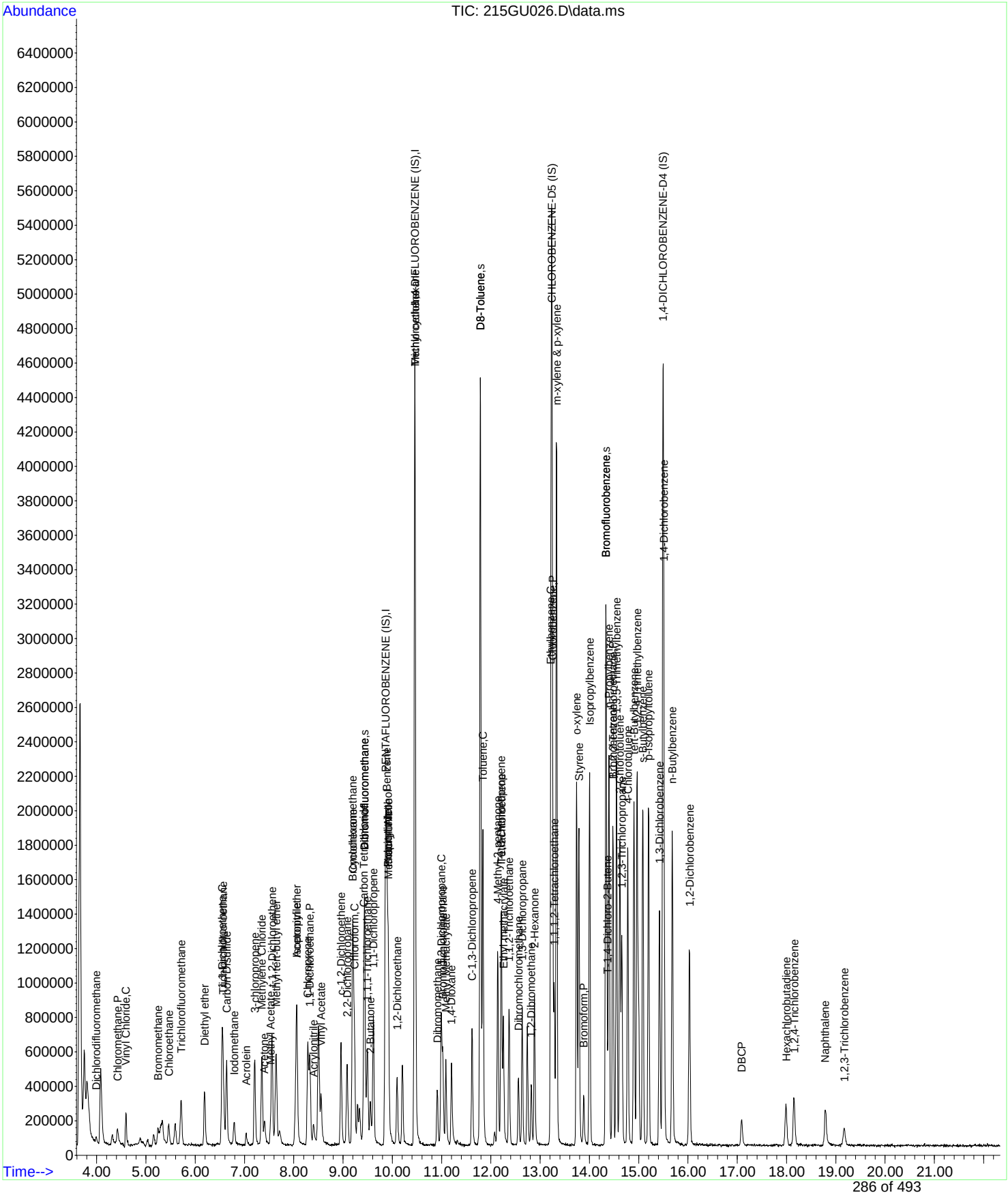
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3126429	53.81	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	116125	53.64	ug/L		91
56) Toluene	11.837	92	822287	21.81	ug/L		100
57) T-1,3-Dichloropropene	12.207	75	414852	21.75	ug/L		99
58) Tetrachloroethene	12.213	164	184638	21.41	ug/L		95
59) Ethyl methacrylate	12.254	69	424775	19.19	ug/L		94
60) 1,1,2-Trichloroethane	12.371	97	275069	21.21	ug/L		97
61) Dibromochloromethane	12.559	129	214467	18.57	ug/L		98
62) 1,3-Dichloropropane	12.636	76	488149	20.55	ug/L		99
63) 1,2-Dibromoethane	12.818	107	261062	20.09	ug/L		97
64) 2-Hexanone	12.882	43	575061	49.10	ug/L		99
65) Ethylbenzene	13.211	106	464525	21.84	ug/L		100
66) Chlorobenzene	13.253	112	823897	22.00	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.288	131	236481	21.88	ug/L		99
68) m-xylene & p-xylene	13.335	106	1191213	43.65	ug/L		100
69) o-xylene	13.740	106	616624	22.91	ug/L		91
70) Styrene	13.787	104	986981	20.70	ug/L		98
71) Bromoform	13.881	173	118320	17.97	ug/L		98
72) Isopropylbenzene	14.005	105	1597618	21.75	ug/L		99
74) Bromofluorobenzene	14.334	95	1333981	50.38	ug/L	#	77
75) n-Propylbenzene	14.393	91	2065717	21.36	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.475	83	467880	21.09	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	102693	20.00	ug/L		98
78) T-1,4-Dichloro-2-Butene	14.363	53	143174	22.04	ug/L	#	82
80) Bromobenzene	14.475	156	277709	21.99	ug/L		100
81) 1,2,4-Trimethylbenzene	14.968	105	1380050	22.31	ug/L		99
82) 2-Chlorotoluene	14.616	91	1204633	23.34	ug/L		99
83) 4-Chlorotoluene	14.780	91	1222416	21.59	ug/L		100
84) tert-Butylbenzene	14.904	119	1081356	22.26	ug/L		99
85) 1,3,5-Trimethylbenzene	14.551	105	1372263	22.31	ug/L		100
86) p-Isopropyltoluene	15.197	119	1357949	22.85	ug/L		99
87) s-Butylbenzene	15.080	105	1701644	23.04	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	586597	22.21	ug/L		99
89) 1,4-Dichlorobenzene	15.509	146	604011	22.06	ug/L	#	86
90) n-Butylbenzene	15.679	91	1339439	21.84	ug/L		99
91) 1,2-Dichlorobenzene	16.032	146	538661	21.14	ug/L		97
92) DBCP	17.089	157	50005	23.09	ug/L		98
93) Hexachlorobutadiene	17.994	225	53619	18.79	ug/L		97
94) 1,2,4-Trichlorobenzene	18.153	180	121588	24.19	ug/L		96
95) Naphthalene	18.782	128	313398	24.06	ug/L	#	95
96) 1,2,3-Trichlorobenzene	19.175	180	47891	23.24	ug/L	#	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU026.D
Acq On : 26 Jul 2021 7:23 pm
Operator : kkw
Sample : 1G26016-MS1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 27 07:25:49 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU027.D
Acq On : 26 Jul 2021 7:51 pm
Operator : kkw
Sample : 1G26016-MSD1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 27 07:25:54 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	1032133	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2471299	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1575361	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1209368	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	657457	53.23	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.46%				
52) D8-Toluene	11.784	98	3132977	51.41	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.82%				
73) Bromofluorobenzene	14.334	95	1362777	50.36	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.72%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.993	85	36858	3.47	ug/L	#	89
3) Chloromethane	4.422	50	157578	9.99	ug/L		99
4) Vinyl Chloride	4.598	62	215500	15.70	ug/L		95
5) Bromomethane	5.238	94	47468	13.61	ug/L	#	90
6) Chloroethane	5.456	64	130764	17.11	ug/L		96
7) Trichlorofluoromethane	5.714	101	278272	17.71	ug/L		94
8) Diethyl ether	6.190	59	230952	21.65	ug/L		99
9) 1,1-Dichloroethene	6.543	96	242912	22.14	ug/L		96
10) Trichlorotrifluoroethane	6.578	151	138249	20.78	ug/L		95
11) Acrolein	7.036	56	83765	30.23	ug/L		97
12) Iodomethane	6.784	142	233665	25.42	ug/L		96
13) Carbon Disulfide	6.637	76	790535	23.90	ug/L		99
14) 3-chloropropene	7.201	41	426212	22.46	ug/L		97
15) Acetone	7.407	43	193476	44.14	ug/L		95
16) Methylene Chloride	7.354	84	296245	21.06	ug/L		94
17) Methyl Acetate	7.530	43	215715	18.74	ug/L		97
18) t-1,2-Dichloroethene	7.559	96	266438	21.28	ug/L		93
19) Methyl tert-butyl ether	7.636	73	674620	21.26	ug/L		97
20) Acetonitrile	8.053	41	346879	119.07	ug/L	#	88
21) Isopropyl ether	8.053	45	871378	21.88	ug/L		98
22) Chloroprene	8.288	88	249857	20.89	ug/L		93
23) 1,1-Dichloroethane	8.323	63	606639	25.49	ug/L		99
24) Acrylonitrile	8.405	53	132697	24.19	ug/L	#	96
25) Vinyl Acetate	8.552	43	485443	17.18	ug/L		96
26) c-1,2-Dichloroethene	8.958	96	293505	21.71	ug/L		96
27) 2,2-Dichloropropane	9.081	77	339350	19.84	ug/L		98
28) Bromochloromethane	9.193	128	112272	22.48	ug/L		96
29) Cyclohexane	9.199	56	559605	23.60	ug/L		100
30) Chloroform	9.228	83	503485	22.15	ug/L		96
32) Dibromofluoromethane	9.434	113	657457	53.23	ug/L	#	89
33) 2-Butanone	9.551	72	113512	55.88	ug/L		88
34) 1,1,1-Trichloroethane	9.492	97	391692	23.24	ug/L		97
35) 1,1-Dichloropropene	9.616	75	422092	22.52	ug/L		95
36) Propionitrile	9.910	54	61631	25.18	ug/L	#	1
37) Methacrylonitrile	9.915	41	294362	30.70	ug/L		84
38) Isobutyl Alcohol	9.910	43	234173	199.93	ug/L	#	51
40) Carbon Tetrachloride	9.422	117	343883	24.34	ug/L	#	85
41) Benzene	9.886	78	1277462	21.81	ug/L		99
42) 1,2-Dichloroethane	10.092	62	335642	19.33	ug/L		96
43) Trichloroethene	10.462	130	243092	20.07	ug/L		83
44) Methyl cyclohexane	10.456	83	605112	22.92	ug/L		93
45) Dibromomethane	10.908	93	168754	19.59	ug/L		98
46) 1,2-Dichloropropane	10.991	63	342676	20.56	ug/L		99
47) Bromodichloromethane	11.020	83	350927	21.46	ug/L		99
48) Methyl Methacrylate	11.091	69	224686	17.04	ug/L		99
49) 1,4-Dioxane	11.202	88	66402	538.49	ug/L		97
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	11.619	75	459745	18.73	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU027.D
Acq On : 26 Jul 2021 7:51 pm
Operator : kkw
Sample : 1G26016-MSD1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 27 07:25:54 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

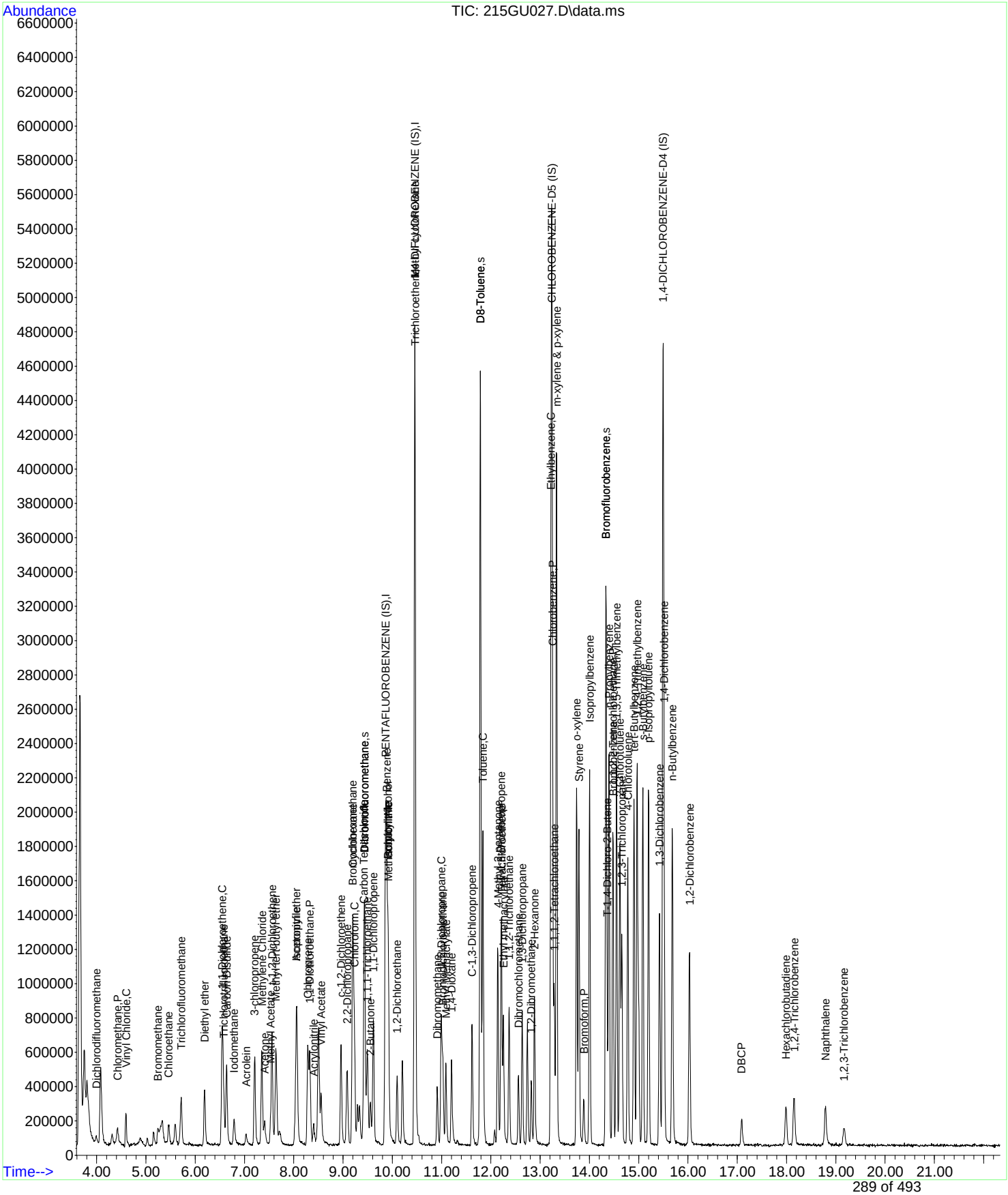
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3132977	51.41	ug/L		95
54) 4-Methyl-2-pentanone	12.142	100	121529	53.52	ug/L		97
56) Toluene	11.837	92	835386	21.68	ug/L		98
57) T-1,3-Dichloropropene	12.207	75	414867	21.28	ug/L		97
58) Tetrachloroethene	12.219	164	180890	20.52	ug/L		99
59) Ethyl methacrylate	12.254	69	432817	19.13	ug/L		97
60) 1,1,2-Trichloroethane	12.371	97	270438	20.40	ug/L		98
61) Dibromochloromethane	12.559	129	219653	18.61	ug/L		98
62) 1,3-Dichloropropane	12.636	76	498310	20.52	ug/L		97
63) 1,2-Dibromoethane	12.818	107	275618	20.75	ug/L		99
64) 2-Hexanone	12.883	43	580361	48.48	ug/L		99
65) Ethylbenzene	13.218	106	474237	21.82	ug/L		96
66) Chlorobenzene	13.253	112	816746	21.34	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.288	131	243237	22.02	ug/L		97
68) m-xylene & p-xylene	13.335	106	1208866	43.34	ug/L		99
69) o-xylene	13.740	106	607514	22.08	ug/L		97
70) Styrene	13.787	104	983468	20.18	ug/L		98
71) Bromoform	13.887	173	114736	17.05	ug/L		97
72) Isopropylbenzene	14.005	105	1573731	20.95	ug/L		99
74) Bromofluorobenzene	14.334	95	1362777	50.36	ug/L	#	77
75) n-Propylbenzene	14.399	91	2101387	21.26	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.475	83	468477	20.66	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	101426	19.33	ug/L		97
78) T-1,4-Dichloro-2-Butene	14.357	53	130362	19.63	ug/L	#	73
80) Bromobenzene	14.481	156	274235	20.94	ug/L		96
81) 1,2,4-Trimethylbenzene	14.968	105	1416523	22.08	ug/L		98
82) 2-Chlorotoluene	14.616	91	1192564	22.27	ug/L		100
83) 4-Chlorotoluene	14.780	91	1179455	20.08	ug/L		99
84) tert-Butylbenzene	14.904	119	1108456	22.00	ug/L		98
85) 1,3,5-Trimethylbenzene	14.551	105	1365418	21.40	ug/L		99
86) p-Isopropyltoluene	15.198	119	1406272	22.81	ug/L		99
87) s-Butylbenzene	15.086	105	1753963	22.89	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	600945	21.93	ug/L		98
89) 1,4-Dichlorobenzene	15.515	146	620311	21.84	ug/L	#	85
90) n-Butylbenzene	15.679	91	1390950	21.86	ug/L		99
91) 1,2-Dichlorobenzene	16.032	146	554808	20.99	ug/L		98
92) DBCP	17.084	157	52676	23.41	ug/L		94
93) Hexachlorobutadiene	17.988	225	52724	17.81	ug/L		91
94) 1,2,4-Trichlorobenzene	18.153	180	125765	24.13	ug/L		99
95) Naphthalene	18.788	128	318627	23.67	ug/L		98
96) 1,2,3-Trichlorobenzene	19.164	180	52322	24.27	ug/L		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072621\
Data File : 215GU027.D
Acq On : 26 Jul 2021 7:51 pm
Operator : kkw
Sample : 1G26016-MSD1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 27 07:25:54 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA67513

Instrument: OVGCMS2

Calibration ID: 2107025

Printed: 7/27/2021 1:11:01PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA67513-TUN1	QC		1		A1B1157			
AA67513-CCV1	QC		2		A1G0786	A1E0960		
1G27015-BS1	QC		3			A1E0960		
1G27015-BLK1	QC		4			A1E0960		
AE06213-01	8260D Extended	C	5			A1E0960		
AE06213-02	8260D Extended	D	6			A1E0960		
AE06213-03	8260D Extended	A	7			A1E0960		
1G27015-BLK2	QC		8			A1E0960		
AE06066-01	TCLP 8260D	A 01	9			A1E0960		
AE06066-01	60D TCL SOM01.2 CLP-LIK	A 01	10			A1E0960		
AE06066-01	8260D Extended	A 01	11			A1E0960		
AE06066-01	8260D Arom	A 01	12			A1E0960		
AE06066-01	624.1	A 01	13			A1E0960		
1G27015-MS1	QC		14			A1E0960		
1G27015-MSD1	QC		15			A1E0960		
AE06067-01	TCLP 8260D	A 01	16			A1E0960		
AE06068-01	TCLP 8260D	A 02	17			A1E0960		
AE06116-01	TCLP 8260D	A 02	18			A1E0960		
AE06158-02	624.1	B	19			A1E0960		
AE06170-01	8260D Extended	A	20			A1E0960		
AE06128-01RE1	8260D Arom	C	21			A1E0960		
AE06128-04RE1	8260D Arom	C	22			A1E0960		
AE05878-12RE1	60D TCL SOM01.2 CLP-LIK	B	23			A1E0960	Tetra Tech NUS, Inc. (TE015)	π@100x cis12dce Re-extract added 7/

Samples Loaded By 07/27/21 Date

Data Processed By 7/27/21 Date

PREPARATION BENCH SHEET

Printed: 7/27/2021 9:42:57AM

1G27015

ENCO Orlando

Analysis
624.1 [EPA 624.1]
8260D Arom [EPA 8260D]
8260D Extended [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]
TCLP 8260D [EPA 8260D]

Surrogate Solution
__ A1B1156 8260 surr working

Prepared using: EPA 5030B_MS

Spiking Solution
A1G0849 8260 2nd source Mega Mix
A1G0888 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1G27015-BLK1		Blank		QC			5	5			1	
1G27015-BLK2		1g26034-blk1		QC			5	5			1	
1G27015-BS1		LCS		QC			5	5	A1G0888 A1G0849	2 2	1	
1G27015-MS1		Matrix Spike [AE06066-01]		QC	NC 7/01/21		0.05	5	A1G0888 A1G0849	2 2	1	
1G27015-MSD1		Matrix Spike Dup [AE06066-01]		QC			0.05	5	A1G0888 A1G0849	2 2	1	
AE05878-12RE1	C	HMPN-MW0042-042.5-202107B[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	2	N	5	5			1	rr@100x cis12dce Re-extract added 7/27/2021 by KKW
AE06066-01		ARS21-9635 Punta Gorda Corp A 01[C4 Roll-off	29-Jul-21	TCLP 8260D			5	5			1	Benzene only
AE06066-01		ARS21-9635 Punta Gorda Corp A 01[C4 Roll-off		624.1			5	5			1	Added for BatchQC in: 1G27015
AE06066-01		ARS21-9635 Punta Gorda Corp A 01[C4 Roll-off		8260D Arom	NC 7/28/21		5	5			1	Added for BatchQC in: 1G27015
AE06066-01		ARS21-9635 Punta Gorda Corp A 01[C4 Roll-off		8260D Extended			5	5			1	Added for BatchQC in: 1G27015
AE06066-01		ARS21-9635 Punta Gorda Corp A 01[C4 Roll-off		8260D TCL SOM01.2 CLP-LIKE			5	5			1	Added for BatchQC in: 1G27015
AE06067-01		ARS21-9636 Stanfield Mobile Mo 01[C4	29-Jul-21	TCLP 8260D			5	5			1	Benzene only
AE06068-01		ARS21-9637 A&R Trans, INC A 02[C4	29-Jul-21	TCLP 8260D			5	5			1	Benzene only
AE06116-01		21071075-001 A 02[C4	29-Jul-21	TCLP 8260D			5	5			1	
AE06128-01RE1		MW-1 C[MS12	29-Jul-21	8260D Arom	2	N	5	5			1	rr2.5x overdilute Re-extract added 7/27/2021 by NMC

PREPARATION BENCH SHEET

Printed: 7/27/2021 9:42:57AM

1G27015

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution
__ A1B1156 8260 surr working

Spiking Solution
A1G0849 8260 2nd source Mega Mix
A1G0888 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE06128-04RE1	MW-12 C[MS12	29-Jul-21	8260D Arom	<2	N	5	5			1	rr1x overdilute Re-extract added 7/27/2021 by NMC
AE06158-02	BE01717-02 (Pond Inf (Grab)) B[MS13	03-Aug-21	624.1	<2	N	5	5			1	run 1000x jmw 7/27/21 toluene and chloroform rk 013020
AE06170-01	Lovet Nail Liquid A[MS14	30-Jul-21	8260D Extended	<2	N	5	5			1	MMA
AE06213-01	Cell 13 C[MS14	30-Jul-21	8260D Extended	<2	N	5	5			1	History 1x ND jmw 6/17/21 Water - Benzene only 02/05/18 DC
AE06213-02	Cell 13 D[MS14	30-Jul-21	8260D Extended	<2	N	5	5			1	History 1x ND jmw 6/17/21 Water - Benzene only 02/05/18 DC
AE06213-03	TRIP BLANK A[MS14	30-Jul-21	8260D Extended	<2	N	5	5			1	tb Water - Benzene only 02/05/18 DC

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 2

Start Date 7/27/21

StopDate 7/27/21

Instrument ID OVGCMS2

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1G0592	P&T Anti-Foam working solution	N/A

Samples Prepared By Date

Samples Prepared By Date

Sequence Name: C:\HPCHEM\1\SEQUENCE\212GV.S
Comment:
Operator: nmc
Data Path: C:\HPchem\1\DATA\072721\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212GV001	8260S	aa67513-tun1
2	Sample	2	212GV002	8260S	aa67513-ccv1
3	Sample	3	212GV003	8260S	bs1
4	Sample	4	212GV004	8260S	rinse
5	Sample	5	212GV005	8260S	1g27015-blk1
6	Sample	6	212GV006	8260S	ae06213-01
7	Sample	7	212GV007	8260S	ae06213-02
8	Sample	8	212GV008	8260S	ae06213-03
9	Sample	9	212GV009	8260S	1g27015-blk2@100x
10	Sample	10	212GV010	8260S	ae06066-01@100x
11	Sample	11	212GV011	8260S	1g27015-ms1
12	Sample	11	212GV012	8260S	1g27015-msd1
13	Sample	12	212GV013	8260S	ae06067-01@100x
14	Sample	13	212GV014	8260S	ae06068-01@100x
15	Sample	14	212GV015	8260S	ae06116-01@100x
16	Sample	15	212GV016	8260S	ae06158-02@1000x
17	Sample	16	212GV017	8260S	ae06170-01@500000x
18	Sample	17	212GV018	8260S	ae06128-01re1@2.5x
19	Sample	18	212GV019	8260S	ae06128-04re1
20	Sample	19	212GV020	8260S	ae05878-12re1@100x

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV002.D Vial: 2
Acq On : 27 Jul 2021 7:40 am Operator: nmc
Sample : aa67513-ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 8:08 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	169573	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	324590	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	165365	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	149824	50.00	ug/kg	-0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	97504	56.31	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 112.62%			
54) D8-Toluene	13.25	98	299047	49.83	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 99.66%			
75) Bromofluorobenzene	15.74	95	129352	49.71	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 99.42%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.94	85	68167	24.68	ug/kg	99
3) Chloromethane	6.41	50	80886	23.78	ug/kg	99
4) Vinyl Chloride	6.60	62	60729	22.88	ug/kg	97
5) Bromomethane	7.23	96	30498	24.63	ug/kg	98
6) Chloroethane	7.47	64	31197	25.93	ug/kg	98
7) Trichlorofluoromethane	7.74	101	54130	21.77	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	84455	52.56	ug/kg	99
9) acrolein	8.93	56	253842	608.34	ug/kg	98
10) Acetone	9.27	43	169490	297.45	ug/kg	94
11) 1,1-Dichloroethene	8.52	96	76811	50.58	ug/kg	95
12) 3-Chloropropene	9.12	76	55593	64.95	ug/kg	88
13) Acetonitrile	9.81	41	151840	567.74	ug/kg	97
14) Iodomethane	8.75	142	710214	373.74	ug/kg	98
15) Carbon disulfide	8.64	76	1530433	416.65	ug/kg	100
16) Methylene Chloride	9.24	84	100650	51.05	ug/kg	97
17) Methyl tert-butyl ether	9.55	73	261077	53.53	ug/kg	98
18) Acrylonitrile	10.14	53	635080	643.28	ug/kg	99
19) T-1,2-Dichloroethene	9.46	96	92858	50.81	ug/kg	95
20) Isopropyl Ether	9.92	45	471636	58.81	ug/kg	97
21) C-1,2-Dichloroethene	10.69	96	106437	53.98	ug/kg	95
22) 1,1-Dichloroethane	10.14	63	185434	55.83	ug/kg	99
23) Vinyl Acetate	10.32	43	1544348	305.69	ug/kg	98
24) Chloroprene	10.12	88	89239	65.01	ug/kg	98
25) 2-Butanone	11.20	72	50957	254.56	ug/kg	85
26) Propionitrile	11.47	54	159937	586.88	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	143421	56.84	ug/kg	92
28) Methacrylonitrile	11.51	67	419675	546.49	ug/kg	89
29) Chloroform	10.91	83	177946	56.85	ug/kg	98
31) Dibromofluoromethane	11.09	113	97504	56.31	ug/kg	100
32) Bromochloromethane	10.89	128	63154	55.73	ug/kg	97
33) 1,1,1-Trichloroethane	11.21	97	138674	57.96	ug/kg	100
34) 1,1-Dichloropropene	11.31	75	135013	55.56	ug/kg	99
35) Diethyl Ether	8.16	59	90184	49.57	ug/kg	96
36) Methyl Acetate	9.41	74	18119	54.01	ug/kg#	83
37) Cyclohexane	10.98	56	143251	50.53	ug/kg	96
39) Methyl Cyclohexane	12.09	55	116056	50.21	ug/kg	94
40) Carbon Tetrachloride	11.17	117	146287	52.05	ug/kg	100
41) 1,2-Dichloroethane	11.69	62	140755	52.04	ug/kg	98
42) Benzene	11.55	78	341286	45.88	ug/kg	94
43) Isobutyl Alcohol	11.56	43	178787	1000.57	ug/kg#	93
44) Trichloroethene	12.06	130	113785	53.03	ug/kg	97
45) 1,2-Dichloropropane	12.51	63	110725	47.32	ug/kg	96
46) Methyl Methacrylate	12.58	100	32152	51.69	ug/kg	99
47) 1,4-Dioxane	12.71	88	19538	1030.56	ug/kg	98
48) Bromodichloromethane	12.52	83	135267	49.55	ug/kg	99
49) Dibromomethane	12.43	93	68665	48.41	ug/kg	99
50) 4-Methyl-2-Pentanone	13.52	100	75815	237.79	ug/kg	95
51) 2-Chloroethyl vinyl ether	12.93	63	67386	337.17	ug/kg	97
52) 2-Hexanone	14.22	43	402440	255.69	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV002.D Vial: 2
Acq On : 27 Jul 2021 7:40 am Operator: nmc
Sample : aa67513-ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 8:08 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

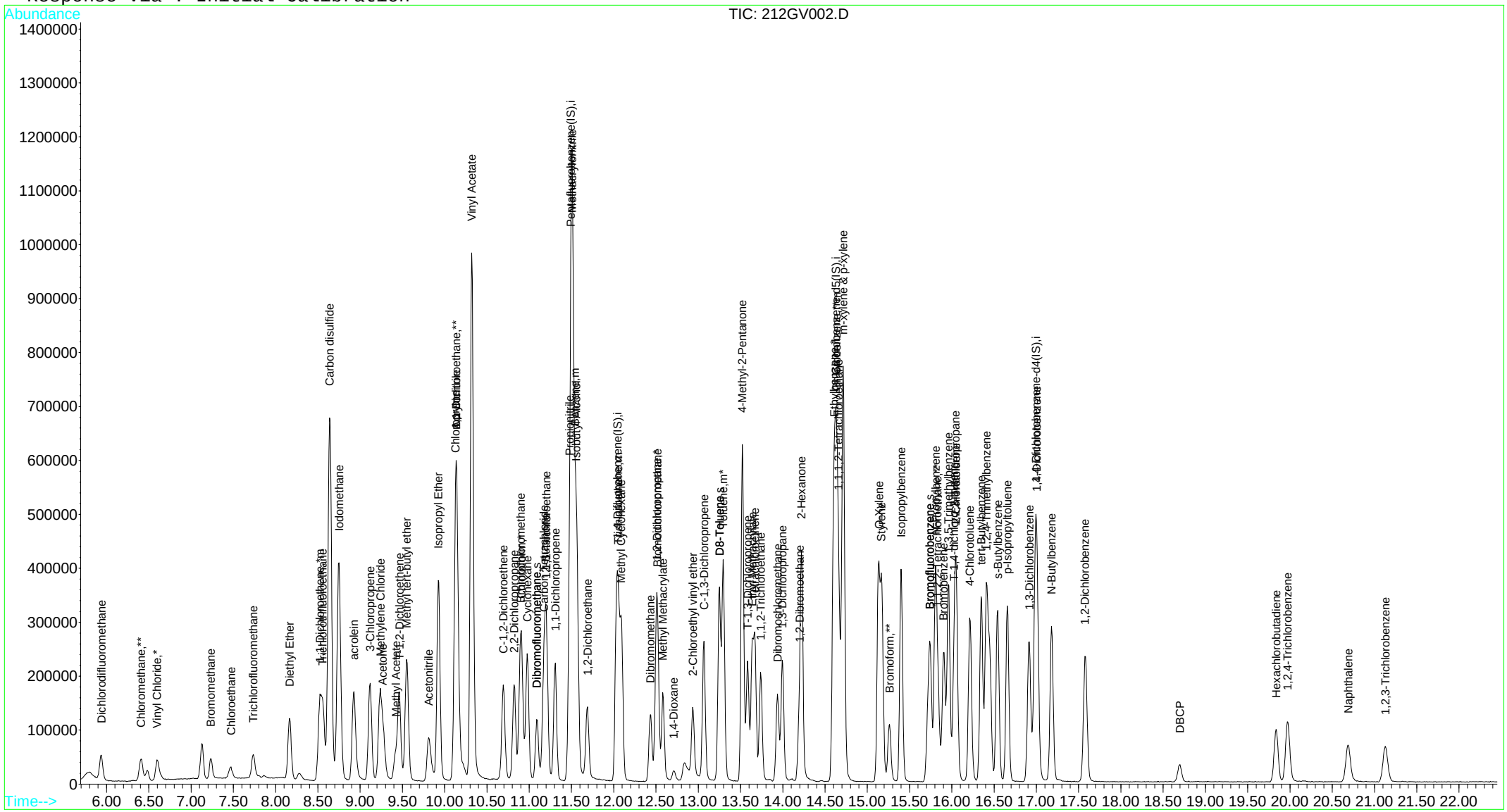
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	190282	49.87	ug/kg	97
55) D8-Toluene	13.25	98	299047	49.83	ug/kg	92
57) Toluene	13.29	92	226751	44.99	ug/kg	98
58) Ethyl Methacrylate	13.64	69	145886	47.21	ug/kg	94
59) T-1,3-Dichloropropene	13.58	75	156906	44.97	ug/kg	99
60) 1,1,2-Trichloroethane	13.74	97	85498	43.03	ug/kg	99
61) 1,3-Dichloropropane	13.99	76	171915	44.25	ug/kg	100
62) Tetrachloroethene	13.67	164	73161	42.79	ug/kg	96
63) Dibromochloromethane	13.94	129	123922	45.82	ug/kg	98
64) 1,2-Dibromoethane	14.19	107	106558	46.17	ug/kg	99
65) Chlorobenzene	14.64	112	257598	46.61	ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.66	131	104931	48.02	ug/kg	98
67) Ethylbenzene	14.60	106	129399	46.83	ug/kg	99
68) m-xylene & p-xylene	14.71	106	319400	93.31	ug/kg	98
69) O-Xylene	15.13	106	161622	47.37	ug/kg	99
70) Bromoform	15.26	173	66303	44.18	ug/kg	100
71) Styrene	15.17	104	267314	48.85	ug/kg	99
72) Isopropylbenzene	15.40	105	387845	47.18	ug/kg	100
73) 1,2,3-Trichloropropane	16.03	75	130122	42.98	ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.84	83	108899	41.53	ug/kg	99
76) Bromofluorobenzene	15.74	95	129352	49.71	ug/kg#	68
77) T-1,4-dichloro-2-butene	16.02	53	32333	46.26	ug/kg	94
78) N-Propylbenzene	15.81	91	434670	45.40	ug/kg	99
80) Bromobenzene	15.91	156	106565	41.74	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.96	105	300779	42.52	ug/kg	100
82) 2-Chlorotoluene	16.05	91	265962	41.03	ug/kg	97
83) 4-Chlorotoluene	16.21	91	280625	42.26	ug/kg	97
84) 1,2,4-Trimethylbenzene	16.41	105	305267	42.49	ug/kg	98
85) s-Butylbenzene	16.54	105	353296	42.04	ug/kg	99
86) tert-Butylbenzene	16.34	119	274365	43.36	ug/kg	99
87) p-Isopropyltoluene	16.66	119	316152	43.82	ug/kg	99
88) 1,3-Dichlorobenzene	16.92	146	189934	43.86	ug/kg	98
89) 1,4-Dichlorobenzene	17.01	146	195404	44.10	ug/kg	98
90) 1,2-Dichlorobenzene	17.58	146	180954	44.13	ug/kg	99
91) N-Butylbenzene	17.18	91	260696	41.47	ug/kg	99
92) DBCP	18.70	75	14791	39.14	ug/kg	95
93) Naphthalene	20.68	128	140224	36.56	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	77166	40.07	ug/kg	98
95) Hexachlorobutadiene	19.83	225	35325	42.23	ug/kg	100
96) 1,2,3-Trichlorobenzene	21.13	180	49648	35.44	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\072721\212GV002.D Vial: 2
Acq On : 27 Jul 2021 7:40 am Operator: nmc
Sample : aa67513-ccv1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 8:08 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV003.D Vial: 3
Acq On : 27 Jul 2021 8:09 am Operator: nmc
Sample : bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 8:55 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	182262	50.00	ug/kg	-0.01
38) 1,4-Difluorobenzene(IS)	12.03	114	339603	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	170540	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.98	152	145434	50.00	ug/kg	-0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	102193	54.91	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 109.82%			
54) D8-Toluene	13.25	98	309401	49.28	ug/kg	-0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 98.56%			
75) Bromofluorobenzene	15.74	95	130188	48.52	ug/kg	-0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 97.04%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	72215	24.32	ug/kg	100
3) Chloromethane	6.41	50	76270	20.86	ug/kg	98
4) Vinyl Chloride	6.60	62	61951	21.71	ug/kg	99
5) Bromomethane	7.24	96	17054	11.05	ug/kg	98
6) Chloroethane	7.47	64	33146	25.63	ug/kg	97
7) Trichlorofluoromethane	7.74	101	57867	21.65	ug/kg	98
8) Trichlorotrifluoroethane	8.56	101	42815	24.79	ug/kg	100
9) acrolein	8.94	56	12752	28.43	ug/kg	87
10) Acetone	9.28	43	33742	55.09	ug/kg	96
11) 1,1-Dichloroethene	8.53	96	39567	24.24	ug/kg	97
12) 3-Chloropropene	9.12	76	25726	28.57	ug/kg	94
13) Acetonitrile	9.83	41	25549	88.88	ug/kg	95
14) Iodomethane	8.75	142	99229	48.58	ug/kg	99
15) Carbon disulfide	8.64	76	158636	40.18	ug/kg	99
16) Methylene Chloride	9.23	84	45963	21.69	ug/kg	97
17) Methyl tert-butyl ether	9.55	73	111849	21.34	ug/kg	98
18) Acrylonitrile	10.12	53	94117	88.70	ug/kg#	70
19) T-1,2-Dichloroethene	9.46	96	45273	23.05	ug/kg	97
20) Isopropyl Ether	9.93	45	193577	22.46	ug/kg	99
21) C-1,2-Dichloroethene	10.70	96	46388	21.89	ug/kg	98
22) 1,1-Dichloroethane	10.14	63	85825	24.04	ug/kg	98
23) Vinyl Acetate	10.33	43	126546	23.30	ug/kg	96
24) Chloroprene	10.12	88	37257	25.25	ug/kg	1
25) 2-Butanone	11.20	72	9799	45.54	ug/kg	67
26) Propionitrile	11.48	54	5527	18.87	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	61543	22.69	ug/kg	93
28) Methacrylonitrile	11.51	67	19122	23.17	ug/kg	90
29) Chloroform	10.91	83	77753	23.11	ug/kg	98
31) Dibromofluoromethane	11.09	113	102193	54.91	ug/kg	100
32) Bromochloromethane	10.89	128	28608	23.49	ug/kg	95
33) 1,1,1-Trichloroethane	11.20	97	61235	23.81	ug/kg	99
34) 1,1-Dichloropropene	11.30	75	58027	22.22	ug/kg	98
35) Diethyl Ether	8.16	59	43258	22.12	ug/kg	98
36) Methyl Acetate	9.42	74	7546	20.93	ug/kg	88
37) Cyclohexane	10.98	56	71102	23.33	ug/kg	97
39) Methyl Cyclohexane	12.09	55	54481	22.53	ug/kg	92
40) Carbon Tetrachloride	11.17	117	64142	21.81	ug/kg	100
41) 1,2-Dichloroethane	11.69	62	58332	20.61	ug/kg	98
42) Benzene	11.54	78	158277	20.34	ug/kg#	55
43) Isobutyl Alcohol	11.57	43	42662	228.20	ug/kg#	1
44) Trichloroethene	12.06	130	49134	21.89	ug/kg	97
45) 1,2-Dichloropropane	12.50	63	47123	19.25	ug/kg	95
46) Methyl Methacrylate	12.58	100	13502	20.75	ug/kg	96
47) 1,4-Dioxane	12.71	88	8251	415.97	ug/kg	96
48) Bromodichloromethane	12.52	83	58395	20.44	ug/kg	99
49) Dibromomethane	12.43	93	29094	19.60	ug/kg	99
50) 4-Methyl-2-Pentanone	13.52	100	15415	46.21	ug/kg	96
51) 2-Chloroethyl vinyl ether	12.94	63	17918	101.65	ug/kg	97
52) 2-Hexanone	14.22	43	80741	49.03	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV003.D Vial: 3
Acq On : 27 Jul 2021 8:09 am Operator: nmc
Sample : bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 8:55 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

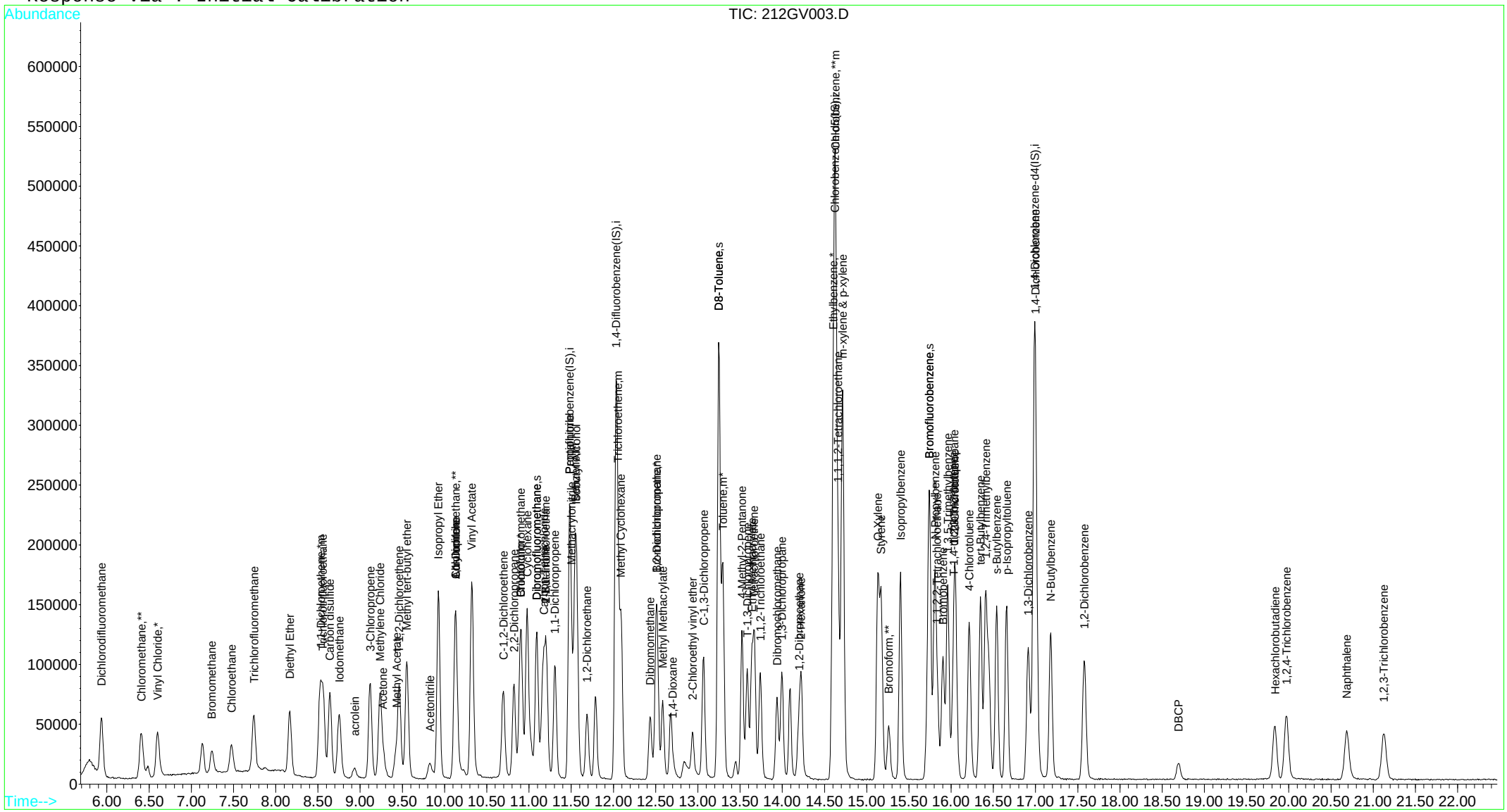
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	77025	19.29	ug/kg	99
55) D8-Toluene	13.25	98	309401	49.28	ug/kg	92
57) Toluene	13.30	92	97854	18.83	ug/kg	98
58) Ethyl Methacrylate	13.63	69	60393	18.95	ug/kg	98
59) T-1,3-Dichloropropene	13.59	75	68359	19.00	ug/kg	97
60) 1,1,2-Trichloroethane	13.74	97	36828	17.97	ug/kg	99
61) 1,3-Dichloropropane	14.00	76	70011	17.48	ug/kg	99
62) Tetrachloroethene	13.67	164	33559	19.03	ug/kg	96
63) Dibromochloromethane	13.94	129	52372	18.78	ug/kg	99
64) 1,2-Dibromoethane	14.19	107	44647	18.76	ug/kg	100
65) Chlorobenzene	14.64	112	114839	20.15	ug/kg	98
66) 1,1,1,2-Tetrachloroethane	14.67	131	45829	20.34	ug/kg#	33
67) Ethylbenzene	14.60	106	55384	19.43	ug/kg	100
68) m-xylene & p-xylene	14.72	106	136478	38.66	ug/kg	97
69) O-Xylene	15.13	106	69631	19.79	ug/kg	98
70) Bromoform	15.27	173	28817	18.62	ug/kg	99
71) Styrene	15.17	104	114193	20.23	ug/kg	99
72) Isopropylbenzene	15.40	105	168899	19.92	ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	53780	17.22	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.84	83	44563	16.48	ug/kg	99
76) Bromofluorobenzene	15.74	95	130188	48.52	ug/kg#	78
77) T-1,4-dichloro-2-butene	16.02	53	13212	18.33	ug/kg	94
78) N-Propylbenzene	15.80	91	188000	19.04	ug/kg	98
80) Bromobenzene	15.90	156	45616	18.41	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.96	105	131325	19.12	ug/kg	99
82) 2-Chlorotoluene	16.05	91	115154	18.30	ug/kg	97
83) 4-Chlorotoluene	16.21	91	119936	18.61	ug/kg	97
84) 1,2,4-Trimethylbenzene	16.40	105	132059	18.93	ug/kg	99
85) s-Butylbenzene	16.54	105	159866	19.60	ug/kg	99
86) tert-Butylbenzene	16.35	119	118374	19.27	ug/kg	100
87) p-Isopropyltoluene	16.66	119	141369	20.19	ug/kg	99
88) 1,3-Dichlorobenzene	16.91	146	81131	19.30	ug/kg	99
89) 1,4-Dichlorobenzene	17.00	146	81681	18.99	ug/kg	98
90) 1,2-Dichlorobenzene	17.58	146	76521	19.23	ug/kg	99
91) N-Butylbenzene	17.18	91	113546	18.61	ug/kg	98
92) DBCP	18.69	75	6634	18.09	ug/kg	94
93) Naphthalene	20.68	128	82127	22.06	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	37493	20.06	ug/kg	98
95) Hexachlorobutadiene	19.84	225	16250	20.01	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.13	180	29019	21.34	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\072721\212GV003.D Vial: 3
Acq On : 27 Jul 2021 8:09 am Operator: nmc
Sample : bs1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 8:55 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV005.D Vial: 5
Acq On : 27 Jul 2021 9:07 am Operator: nmc
Sample : 1g27015-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 10:54 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	176714	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	327495	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.62	82	162085	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	137408	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	103575	57.40	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 114.80%			
54) D8-Toluene	13.25	98	304334	50.26	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 100.52%			
75) Bromofluorobenzene	15.74	95	126622	49.65	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 99.30%			

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.	
3) Chloromethane	0.00	50	0	N.D.	
4) Vinyl Chloride	0.00	62	0	N.D.	
5) Bromomethane	0.00	96	0	N.D.	
6) Chloroethane	0.00	64	0	N.D.	
7) Trichlorofluoromethane	0.00	101	0	N.D.	
8) Trichlorotrifluoroethane	0.00	101	0	N.D.	
9) acrolein	0.00	56	0	N.D.	
10) Acetone	0.00	43	0	N.D.	
11) 1,1-Dichloroethene	0.00	96	0	N.D.	
12) 3-Chloropropene	0.00	76	0	N.D.	
13) Acetonitrile	0.00	41	0	N.D.	
14) Iodomethane	0.00	142	0	N.D.	
15) Carbon disulfide	0.00	76	0	N.D. d	
16) Methylene Chloride	0.00	84	0	N.D.	
17) Methyl tert-butyl ether	0.00	73	0	N.D.	
18) Acrylonitrile	0.00	53	0	N.D.	
19) T-1,2-Dichloroethene	0.00	96	0	N.D.	
20) Isopropyl Ether	0.00	45	0	N.D.	
21) C-1,2-Dichloroethene	0.00	96	0	N.D.	
22) 1,1-Dichloroethane	0.00	63	0	N.D.	
23) Vinyl Acetate	0.00	43	0	N.D.	
24) Chloroprene	0.00	88	0	N.D.	
25) 2-Butanone	0.00	72	0	N.D.	
26) Propionitrile	0.00	54	0	N.D.	
27) 2,2-Dichloropropane	0.00	77	0	N.D.	
28) Methacrylonitrile	0.00	67	0	N.D. d	
29) Chloroform	0.00	83	0	N.D.	
31) Dibromofluoromethane	11.09	113	103575	57.40 ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.	
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
34) 1,1-Dichloropropene	0.00	75	0	N.D.	
35) Diethyl Ether	0.00	59	0	N.D.	
36) Methyl Acetate	0.00	74	0	N.D.	
37) Cyclohexane	0.00	56	0	N.D.	
39) Methyl Cyclohexane	0.00	55	0	N.D. d	
40) Carbon Tetrachloride	0.00	117	0	N.D.	
41) 1,2-Dichloroethane	0.00	62	0	N.D.	
42) Benzene	0.00	78	0	N.D. d	
43) Isobutyl Alcohol	0.00	43	0	N.D.	
44) Trichloroethene	0.00	130	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	
46) Methyl Methacrylate	0.00	100	0	N.D.	
47) 1,4-Dioxane	0.00	88	0	N.D.	
48) Bromodichloromethane	0.00	83	0	N.D.	
49) Dibromomethane	0.00	93	0	N.D.	
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.	
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	
52) 2-Hexanone	0.00	43	0	N.D. d	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV005.D Vial: 5
Acq On : 27 Jul 2021 9:07 am Operator: nmc
Sample : 1g27015-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 10:54 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

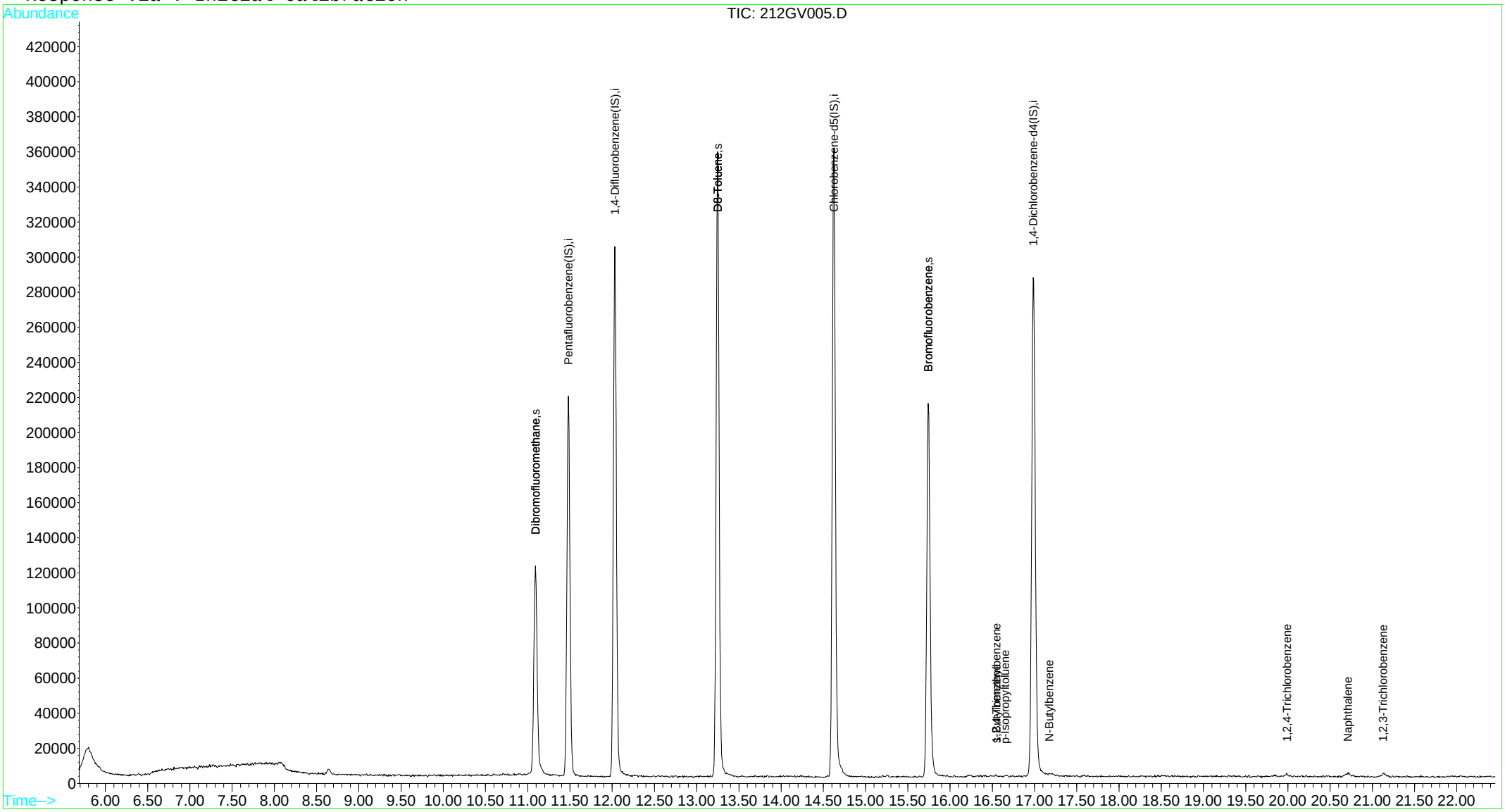
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	304334	50.26 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D.	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	126622	49.65 ug/kg#	80
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D. d	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	16.54	105	771	0.12 ug/kg#	28
85) s-Butylbenzene	16.54	105	771	0.10 ug/kg#	57
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.66	119	695	0.11 ug/kg#	51
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	17.18	91	901	0.16 ug/kg#	29
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.70	128	4659	1.32 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	1011	0.57 ug/kg#	84
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	21.12	180	1405	1.09 ug/kg#	82

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\072721\212GV005.D Vial: 5
Acq On : 27 Jul 2021 9:07 am Operator: nmc
Sample : 1g27015-blk1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 10:54 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV010.D Vial: 10
Acq On : 27 Jul 2021 11:30 am Operator: nmc
Sample : ae06066-01@100x Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:27 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	175076	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	324513	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	161609	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	135897	50.00	ug/kg	-0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	101288	56.66	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 113.32%			
54) D8-Toluene	13.25	98	295867	49.31	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 98.62%			
75) Bromofluorobenzene	15.74	95	121443	47.76	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 95.52%			

Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D.	
3) Chloromethane	0.00	50	0	N.D.	
4) Vinyl Chloride	0.00	62	0	N.D.	
5) Bromomethane	0.00	96	0	N.D.	
6) Chloroethane	0.00	64	0	N.D.	
7) Trichlorofluoromethane	0.00	101	0	N.D.	
8) Trichlorotrifluoroethane	0.00	101	0	N.D.	
9) acrolein	0.00	56	0	N.D.	
10) Acetone	0.00	43	0	N.D.	
11) 1,1-Dichloroethene	0.00	96	0	N.D.	
12) 3-Chloropropene	0.00	76	0	N.D.	
13) Acetonitrile	0.00	41	0	N.D.	
14) Iodomethane	0.00	142	0	N.D.	
15) Carbon disulfide	0.00	76	0	N.D. d	
16) Methylene Chloride	0.00	84	0	N.D. d	
17) Methyl tert-butyl ether	0.00	73	0	N.D.	
18) Acrylonitrile	0.00	53	0	N.D.	
19) T-1,2-Dichloroethene	0.00	96	0	N.D.	
20) Isopropyl Ether	0.00	45	0	N.D.	
21) C-1,2-Dichloroethene	0.00	96	0	N.D.	
22) 1,1-Dichloroethane	0.00	63	0	N.D.	
23) Vinyl Acetate	0.00	43	0	N.D.	
24) Chloroprene	0.00	88	0	N.D.	
25) 2-Butanone	0.00	72	0	N.D.	
26) Propionitrile	0.00	54	0	N.D.	
27) 2,2-Dichloropropane	0.00	77	0	N.D.	
28) Methacrylonitrile	0.00	67	0	N.D.	
29) Chloroform	0.00	83	0	N.D.	
31) Dibromofluoromethane	11.10	113	101288	56.66 ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.	
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.	
34) 1,1-Dichloropropene	0.00	75	0	N.D.	
35) Diethyl Ether	0.00	59	0	N.D.	
36) Methyl Acetate	0.00	74	0	N.D.	
37) Cyclohexane	0.00	56	0	N.D.	
39) Methyl Cyclohexane	0.00	55	0	N.D. d	
40) Carbon Tetrachloride	0.00	117	0	N.D.	
41) 1,2-Dichloroethane	0.00	62	0	N.D.	
42) Benzene	0.00	78	0	N.D. d	
43) Isobutyl Alcohol	0.00	43	0	N.D. d	
44) Trichloroethene	0.00	130	0	N.D.	
45) 1,2-Dichloropropane	0.00	63	0	N.D.	
46) Methyl Methacrylate	0.00	100	0	N.D.	
47) 1,4-Dioxane	0.00	88	0	N.D.	
48) Bromodichloromethane	0.00	83	0	N.D.	
49) Dibromomethane	0.00	93	0	N.D.	
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D. d	
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.	
52) 2-Hexanone	0.00	43	0	N.D.	

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV010.D Vial: 10
Acq On : 27 Jul 2021 11:30 am Operator: nmc
Sample : ae06066-01@100x Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:27 2021 Quant Results File: 070721.RES

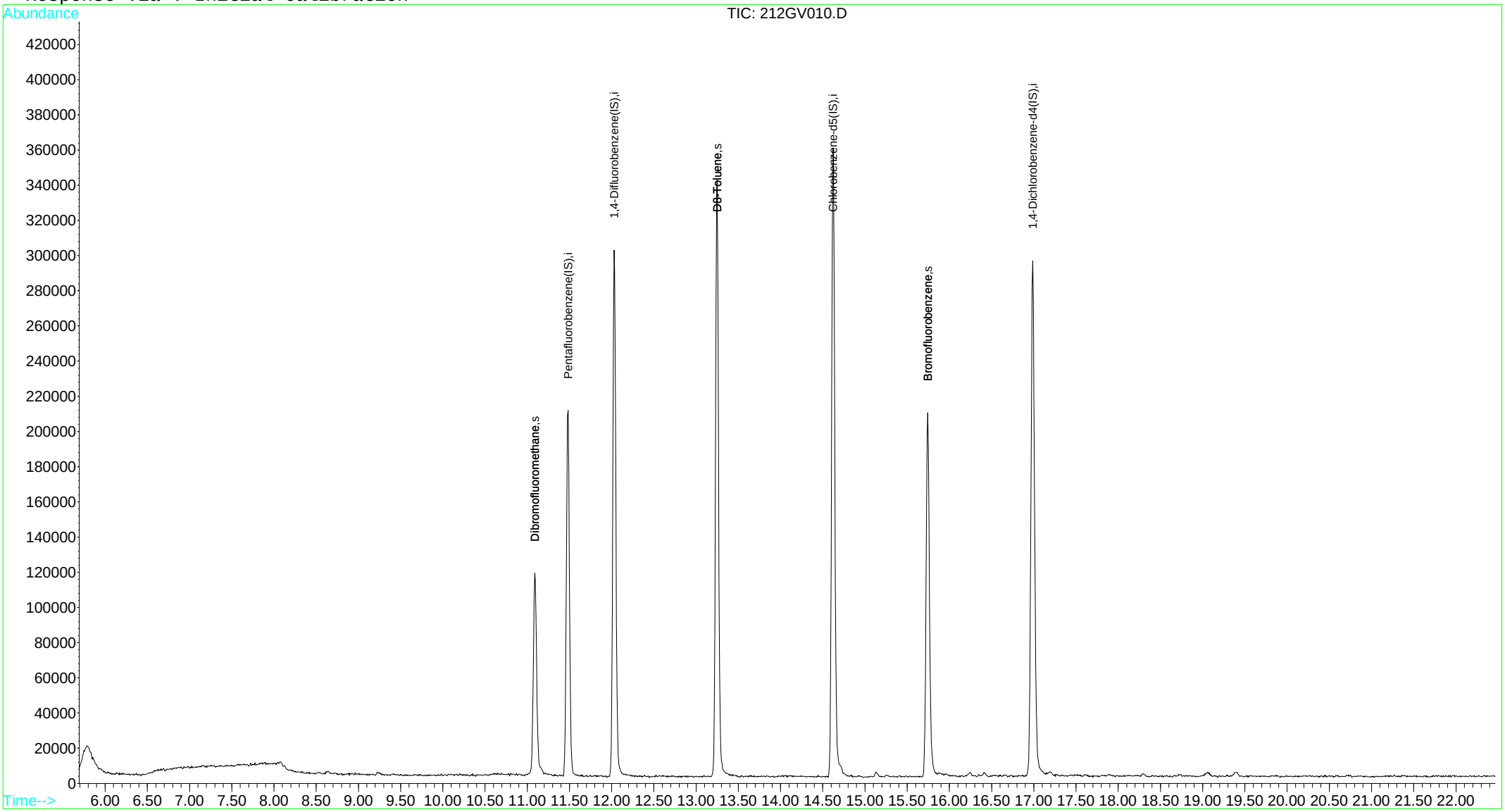
Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	295867	49.31 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D.	
68) m-xylene & p-xylene	0.00	106	0	N.D.	
69) O-Xylene	0.00	106	0	N.D. d	
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D.	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	121443	47.76 ug/kg#	81
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D. d	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D. d	
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	0.00	119	0	N.D.	
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	0.00	128	0	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

Quantitation Report

Data File : C:\HPCHEM\1\DATA\072721\212GV010.D Vial: 10
Acq On : 27 Jul 2021 11:30 am Operator: nmc
Sample : ae06066-01@100x Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:27 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV011.D Vial: 11
Acq On : 27 Jul 2021 11:59 am Operator: nmc
Sample : 1g27015-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:22 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	166346	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	311370	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	159192	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	138557	50.00	ug/kg	-0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	95895	56.46	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 112.92%			
54) D8-Toluene	13.24	98	287286	49.90	ug/kg	-0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 99.80%			
75) Bromofluorobenzene	15.74	95	124620	49.75	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 99.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	70527	26.03	ug/kg	99
3) Chloromethane	6.41	50	77033	23.08	ug/kg	100
4) Vinyl Chloride	6.60	62	60887	23.38	ug/kg	99
5) Bromomethane	7.24	96	18491	13.46	ug/kg	93
6) Chloroethane	7.47	64	29508	25.00	ug/kg	98
7) Trichlorofluoromethane	7.73	101	56364	23.11	ug/kg	100
8) Trichlorotrifluoroethane	8.56	101	44370	28.15	ug/kg	100
9) acrolein	8.92	56	13074	31.94	ug/kg	97
10) Acetone	9.27	43	35330	63.21	ug/kg	97
11) 1,1-Dichloroethene	8.52	96	41112	27.60	ug/kg	94
12) 3-Chloropropene	9.12	76	27022	32.79	ug/kg	95
13) Acetonitrile	9.82	41	26863	102.39	ug/kg	83
14) Iodomethane	8.74	142	65449	35.11	ug/kg	99
15) Carbon disulfide	8.64	76	143957	39.95	ug/kg	99
16) Methylene Chloride	9.23	84	46363	23.97	ug/kg	96
17) Methyl tert-butyl ether	9.56	73	113417	23.70	ug/kg	97
18) Acrylonitrile	10.12	53	97947	101.14	ug/kg#	71
19) T-1,2-Dichloroethene	9.46	96	44526	24.83	ug/kg	94
20) Isopropyl Ether	9.92	45	193661	24.62	ug/kg	98
21) C-1,2-Dichloroethene	10.69	96	46447	24.01	ug/kg	96
22) 1,1-Dichloroethane	10.14	63	89207	27.38	ug/kg	98
23) Vinyl Acetate	10.33	43	126679	25.56	ug/kg	97
24) Chloroprene	10.12	88	39362	29.23	ug/kg	1
25) 2-Butanone	11.19	72	9750	49.65	ug/kg#	49
26) Propionitrile	11.48	54	5787	21.65	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	64170	25.93	ug/kg	93
28) Methacrylonitrile	11.51	67	19099	25.35	ug/kg	90
29) Chloroform	10.91	83	79551	25.91	ug/kg	98
31) Dibromofluoromethane	11.09	113	95895	56.46	ug/kg	100
32) Bromochloromethane	10.89	128	28184	25.36	ug/kg	97
33) 1,1,1-Trichloroethane	11.20	97	64766	27.60	ug/kg	99
34) 1,1-Dichloropropene	11.31	75	61158	25.66	ug/kg	99
35) Diethyl Ether	8.16	59	43207	24.21	ug/kg	98
36) Methyl Acetate	9.42	74	8336	25.33	ug/kg	89
37) Cyclohexane	10.98	56	74821	26.90	ug/kg	95
39) Methyl Cyclohexane	12.09	55	55552	25.05	ug/kg	94
40) Carbon Tetrachloride	11.17	117	67622	25.08	ug/kg	99
41) 1,2-Dichloroethane	11.68	62	61025	23.52	ug/kg	98
42) Benzene	11.54	78	161469	22.63	ug/kg#	56
43) Isobutyl Alcohol	11.57	43	44584	260.10	ug/kg#	1
44) Trichloroethene	12.06	130	49958	24.27	ug/kg	96
45) 1,2-Dichloropropane	12.50	63	49108	21.88	ug/kg	97
46) Methyl Methacrylate	12.59	100	13467	22.57	ug/kg	92
47) 1,4-Dioxane	12.71	88	8364	459.90	ug/kg	95
48) Bromodichloromethane	12.52	83	58690	22.41	ug/kg	95
49) Dibromomethane	12.43	93	28635	21.04	ug/kg	99
50) 4-Methyl-2-Pentanone	13.52	100	15721	51.40	ug/kg	97
51) 2-Chloroethyl vinyl ether	12.94	63	16035	99.39	ug/kg	97
52) 2-Hexanone	14.22	43	82875	54.89	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV011.D Vial: 11
Acq On : 27 Jul 2021 11:59 am Operator: nmc
Sample : 1g27015-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:22 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

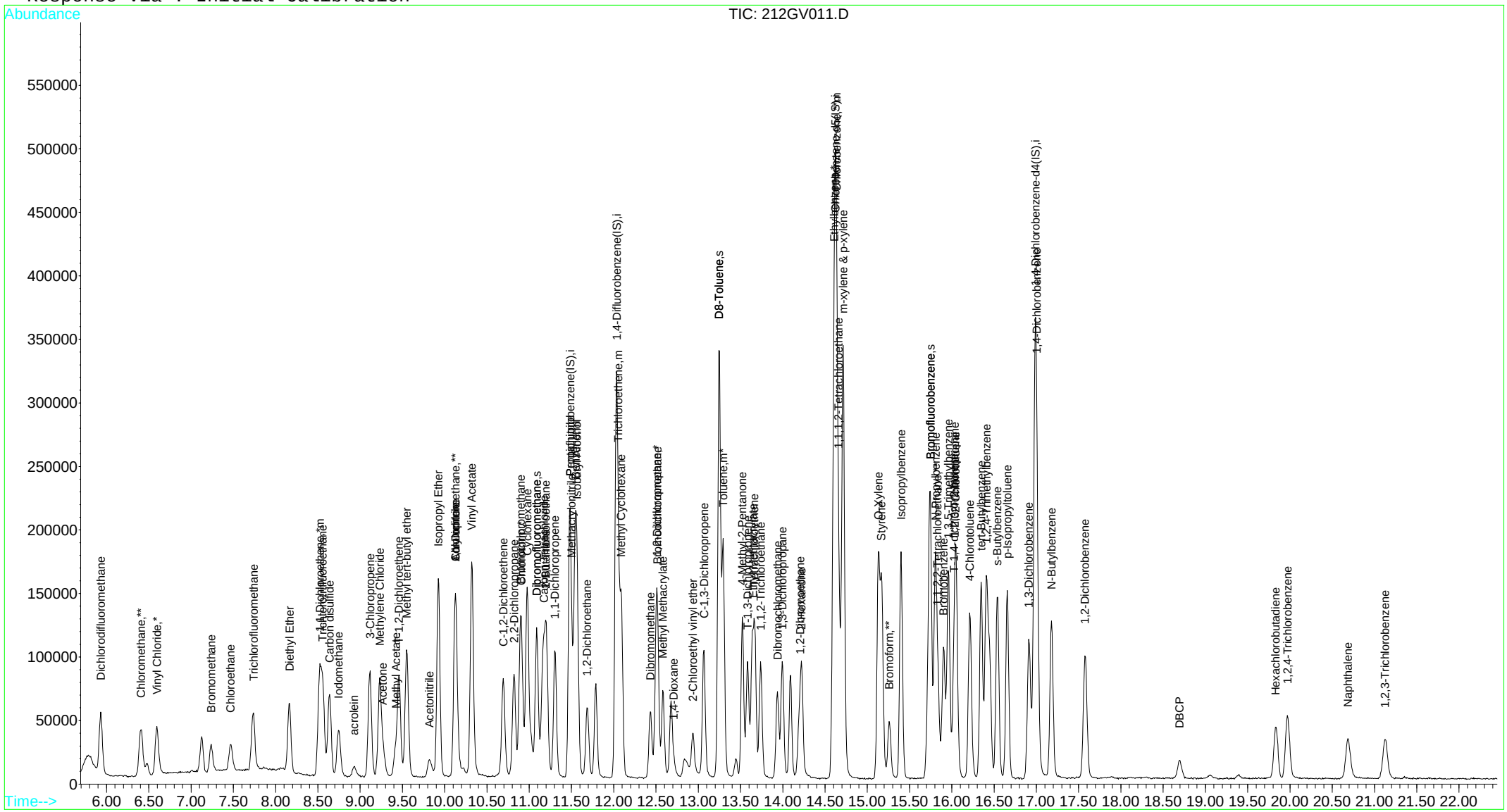
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	74021	20.22	ug/kg	96
55) D8-Toluene	13.24	98	287286	49.90	ug/kg	92
57) Toluene	13.29	92	100090	20.63	ug/kg	99
58) Ethyl Methacrylate	13.64	69	61103	20.54	ug/kg	95
59) T-1,3-Dichloropropene	13.58	75	66951	19.93	ug/kg	99
60) 1,1,2-Trichloroethane	13.74	97	37963	19.85	ug/kg	99
61) 1,3-Dichloropropane	13.99	76	69205	18.51	ug/kg	100
62) Tetrachloroethene	13.67	164	32734	19.89	ug/kg	95
63) Dibromochloromethane	13.94	129	52705	20.24	ug/kg	98
64) 1,2-Dibromoethane	14.20	107	44409	19.99	ug/kg	98
65) Chlorobenzene	14.64	112	115158	21.65	ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.66	131	44498	21.15	ug/kg#	39
67) Ethylbenzene	14.60	106	56515	21.24	ug/kg	99
68) m-xylene & p-xylene	14.71	106	138357	41.99	ug/kg	99
69) O-Xylene	15.13	106	69397	21.13	ug/kg	97
70) Bromoform	15.26	173	29578	20.47	ug/kg	99
71) Styrene	15.17	104	114056	21.65	ug/kg	98
72) Isopropylbenzene	15.40	105	172458	21.79	ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	54692	18.77	ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.84	83	46587	18.45	ug/kg	99
76) Bromofluorobenzene	15.74	95	124620	49.75	ug/kg#	77
77) T-1,4-dichloro-2-butene	16.02	53	14235	21.16	ug/kg#	89
78) N-Propylbenzene	15.81	91	190848	20.71	ug/kg	97
80) Bromobenzene	15.91	156	44855	19.00	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.96	105	133118	20.35	ug/kg	100
82) 2-Chlorotoluene	16.05	91	116432	19.42	ug/kg	97
83) 4-Chlorotoluene	16.21	91	119754	19.50	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	133190	20.04	ug/kg	98
85) s-Butylbenzene	16.54	105	160835	20.70	ug/kg	99
86) tert-Butylbenzene	16.35	119	120241	20.55	ug/kg	99
87) p-Isopropyltoluene	16.66	119	140555	21.07	ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	78665	19.64	ug/kg	99
89) 1,4-Dichlorobenzene	17.01	146	79295	19.35	ug/kg	97
90) 1,2-Dichlorobenzene	17.58	146	74227	19.58	ug/kg	98
91) N-Butylbenzene	17.18	91	112231	19.31	ug/kg	99
92) DBCP	18.69	75	6988	20.00	ug/kg	89
93) Naphthalene	20.69	128	65262	18.40	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	34116	19.16	ug/kg	99
95) Hexachlorobutadiene	19.83	225	14380	18.59	ug/kg	98
96) 1,2,3-Trichlorobenzene	21.12	180	23194	17.90	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\072721\212GV011.D Vial: 11
Acq On : 27 Jul 2021 11:59 am Operator: nmc
Sample : 1g27015-ms1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:22 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV012.D Vial: 11
Acq On : 27 Jul 2021 12:28 pm Operator: nmc
Sample : 1g27015-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:51 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	162481	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	304077	50.00	ug/kg	-0.01
56) Chlorobenzene-d5(IS)	14.62	82	155274	50.00	ug/kg	-0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	134388	50.00	ug/kg	-0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	96901	58.41	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 116.82%			
54) D8-Toluene	13.25	98	287443	51.13	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 102.26%			
75) Bromofluorobenzene	15.74	95	122783	50.25	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 100.50%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	68049	25.71	ug/kg	99
3) Chloromethane	6.41	50	75834	23.26	ug/kg	99
4) Vinyl Chloride	6.60	62	58849	23.14	ug/kg	99
5) Bromomethane	7.24	96	20637	15.75	ug/kg	96
6) Chloroethane	7.47	64	28908	25.08	ug/kg	97
7) Trichlorofluoromethane	7.73	101	54566	22.90	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	44068	28.62	ug/kg	100
9) acrolein	8.92	56	12865	32.18	ug/kg	94
10) Acetone	9.28	43	35040	64.18	ug/kg	97
11) 1,1-Dichloroethene	8.52	96	40574	27.89	ug/kg	95
12) 3-Chloropropene	9.12	76	26014	32.33	ug/kg	90
13) Acetonitrile	9.82	41	27908	108.90	ug/kg	92
14) Iodomethane	8.74	142	65127	35.77	ug/kg	97
15) Carbon disulfide	8.64	76	141586	40.23	ug/kg	98
16) Methylene Chloride	9.23	84	47492	25.14	ug/kg	98
17) Methyl tert-butyl ether	9.55	73	114610	24.52	ug/kg	99
18) Acrylonitrile	10.12	53	97213	102.77	ug/kg#	69
19) T-1,2-Dichloroethene	9.46	96	45199	25.81	ug/kg	96
20) Isopropyl Ether	9.92	45	190820	24.83	ug/kg	97
21) C-1,2-Dichloroethene	10.69	96	46293	24.50	ug/kg	97
22) 1,1-Dichloroethane	10.14	63	87146	27.38	ug/kg	97
23) Vinyl Acetate	10.33	43	126088	26.05	ug/kg	96
24) Chloroprene	10.12	88	38304	29.12	ug/kg	1
25) 2-Butanone	11.19	72	12812	66.80	ug/kg	92
26) Propionitrile	11.48	54	5791	22.18	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	63125	26.11	ug/kg	92
28) Methacrylonitrile	11.51	67	19103	25.96	ug/kg	92
29) Chloroform	10.91	83	78844	26.29	ug/kg	99
31) Dibromofluoromethane	11.09	113	96901	58.41	ug/kg	100
32) Bromochloromethane	10.89	128	28005	25.79	ug/kg	98
33) 1,1,1-Trichloroethane	11.21	97	63117	27.53	ug/kg	100
34) 1,1-Dichloropropene	11.31	75	59908	25.73	ug/kg	100
35) Diethyl Ether	8.16	59	43493	24.95	ug/kg	97
36) Methyl Acetate	9.41	74	8501	26.44	ug/kg	91
37) Cyclohexane	10.98	56	74080	27.27	ug/kg	98
39) Methyl Cyclohexane	12.09	55	54244	25.05	ug/kg	93
40) Carbon Tetrachloride	11.17	117	66879	25.40	ug/kg	100
41) 1,2-Dichloroethane	11.69	62	58790	23.20	ug/kg	98
42) Benzene	11.54	78	159592	22.90	ug/kg#	55
43) Isobutyl Alcohol	11.57	43	43043	257.14	ug/kg#	1
44) Trichloroethene	12.06	130	48752	24.25	ug/kg	96
45) 1,2-Dichloropropane	12.50	63	47243	21.55	ug/kg	97
46) Methyl Methacrylate	12.58	100	13233	22.71	ug/kg	91
47) 1,4-Dioxane	12.71	88	8690	489.29	ug/kg	99
48) Bromodichloromethane	12.52	83	58467	22.86	ug/kg	98
49) Dibromomethane	12.44	93	28647	21.56	ug/kg	97
50) 4-Methyl-2-Pentanone	13.53	100	15544	52.04	ug/kg	98
51) 2-Chloroethyl vinyl ether	12.94	63	15904	100.83	ug/kg	95
52) 2-Hexanone	14.23	43	82919	56.24	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV012.D Vial: 11
Acq On : 27 Jul 2021 12:28 pm Operator: nmc
Sample : 1g27015-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:51 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

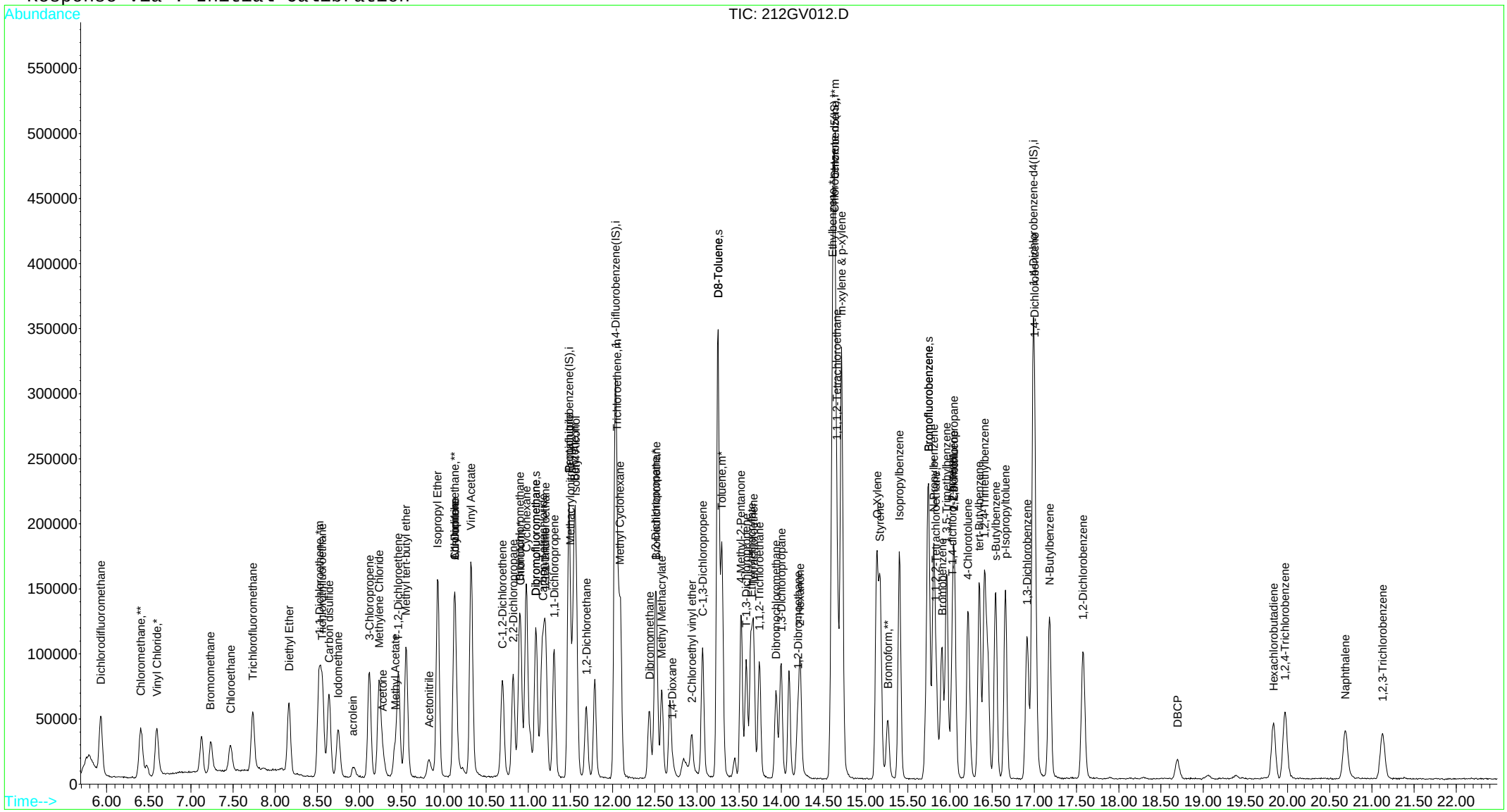
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	73527	20.57	ug/kg	96
55) D8-Toluene	13.25	98	287443	51.13	ug/kg	92
57) Toluene	13.29	92	97931	20.70	ug/kg	97
58) Ethyl Methacrylate	13.64	69	61995	21.37	ug/kg	98
59) T-1,3-Dichloropropene	13.58	75	67115	20.48	ug/kg	98
60) 1,1,2-Trichloroethane	13.74	97	36807	19.73	ug/kg	99
61) 1,3-Dichloropropane	13.99	76	67845	18.60	ug/kg	99
62) Tetrachloroethene	13.67	164	31770	19.79	ug/kg	94
63) Dibromochloromethane	13.94	129	52069	20.50	ug/kg	98
64) 1,2-Dibromoethane	14.19	107	44642	20.60	ug/kg	99
65) Chlorobenzene	14.64	112	112299	21.64	ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.66	131	43873	21.38	ug/kg#	39
67) Ethylbenzene	14.60	106	55357	21.33	ug/kg	99
68) m-xylene & p-xylene	14.71	106	133318	41.48	ug/kg	99
69) O-Xylene	15.13	106	67499	21.07	ug/kg	97
70) Bromoform	15.26	173	29969	21.27	ug/kg	99
71) Styrene	15.17	104	112182	21.83	ug/kg	98
72) Isopropylbenzene	15.40	105	169304	21.93	ug/kg	99
73) 1,2,3-Trichloropropane	16.03	75	54932	19.32	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	46459	18.87	ug/kg	100
76) Bromofluorobenzene	15.74	95	122783	50.25	ug/kg#	76
77) T-1,4-dichloro-2-butene	16.02	53	14093	21.47	ug/kg	91
78) N-Propylbenzene	15.81	91	190376	21.18	ug/kg	98
80) Bromobenzene	15.91	156	44297	19.34	ug/kg	99
81) 1,3,5-Trimethylbenzene	15.96	105	129217	20.36	ug/kg	100
82) 2-Chlorotoluene	16.05	91	115044	19.79	ug/kg	98
83) 4-Chlorotoluene	16.21	91	118176	19.84	ug/kg	98
84) 1,2,4-Trimethylbenzene	16.41	105	132784	20.60	ug/kg	99
85) s-Butylbenzene	16.54	105	158447	21.02	ug/kg	99
86) tert-Butylbenzene	16.34	119	118935	20.96	ug/kg	99
87) p-Isopropyltoluene	16.66	119	141006	21.79	ug/kg	98
88) 1,3-Dichlorobenzene	16.91	146	78537	20.22	ug/kg	98
89) 1,4-Dichlorobenzene	17.01	146	81063	20.40	ug/kg	97
90) 1,2-Dichlorobenzene	17.58	146	74941	20.38	ug/kg	99
91) N-Butylbenzene	17.18	91	113642	20.16	ug/kg	99
92) DBCP	18.69	75	6728	19.85	ug/kg	97
93) Naphthalene	20.68	128	75278	21.88	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	35999	20.84	ug/kg	99
95) Hexachlorobutadiene	19.83	225	15184	20.24	ug/kg	100
96) 1,2,3-Trichlorobenzene	21.13	180	26628	21.19	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\072721\212GV012.D Vial: 11
Acq On : 27 Jul 2021 12:28 pm Operator: nmc
Sample : 1g27015-msd1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 27 12:51 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV020.D Vial: 19
Acq On : 27 Jul 2021 4:18 pm Operator: nmc
Sample : ae05878-12re1@100x Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 28 6:47 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	172924	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	323031	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	163079	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	135643	50.00	ug/kg	-0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	100087	56.69	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 113.38%			
54) D8-Toluene	13.25	98	292467	48.97	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.94%			
75) Bromofluorobenzene	15.74	95	123338	48.07	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 96.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.00	85	0	N.D. d		
3) Chloromethane	0.00	50	0	N.D.		
4) Vinyl Chloride	6.60	62	4120	1.52	ug/kg#	59
5) Bromomethane	0.00	96	0	N.D.		
6) Chloroethane	0.00	64	0	N.D.		
7) Trichlorofluoromethane	0.00	101	0	N.D.		
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	0.00	43	0	N.D.		
11) 1,1-Dichloroethene	0.00	96	0	N.D.		
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	0.00	41	0	N.D. d		
14) Iodomethane	0.00	142	0	N.D.		
15) Carbon disulfide	0.00	76	0	N.D. d		
16) Methylene Chloride	0.00	84	0	N.D.		
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	0.00	53	0	N.D.		
19) T-1,2-Dichloroethene	0.00	96	0	N.D.		
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.69	96	67755	33.70	ug/kg	95
22) 1,1-Dichloroethane	0.00	63	0	N.D.		
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	0.00	72	0	N.D. d		
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	0.00	67	0	N.D.		
29) Chloroform	0.00	83	0	N.D.		
31) Dibromofluoromethane	11.09	113	100087	56.69	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	0.00	75	0	N.D.		
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	0.00	56	0	N.D.		
39) Methyl Cyclohexane	0.00	55	0	N.D. d		
40) Carbon Tetrachloride	0.00	117	0	N.D.		
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	0.00	78	0	N.D. d		
43) Isobutyl Alcohol	0.00	43	0	N.D. d		
44) Trichloroethene	12.06	130	25157	11.78	ug/kg	88
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	0.00	83	0	N.D.		
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	0.00	43	0	N.D. d		

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\072721\212GV020.D Vial: 19
Acq On : 27 Jul 2021 4:18 pm Operator: nmc
Sample : ae05878-12re1@100x Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 28 6:47 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

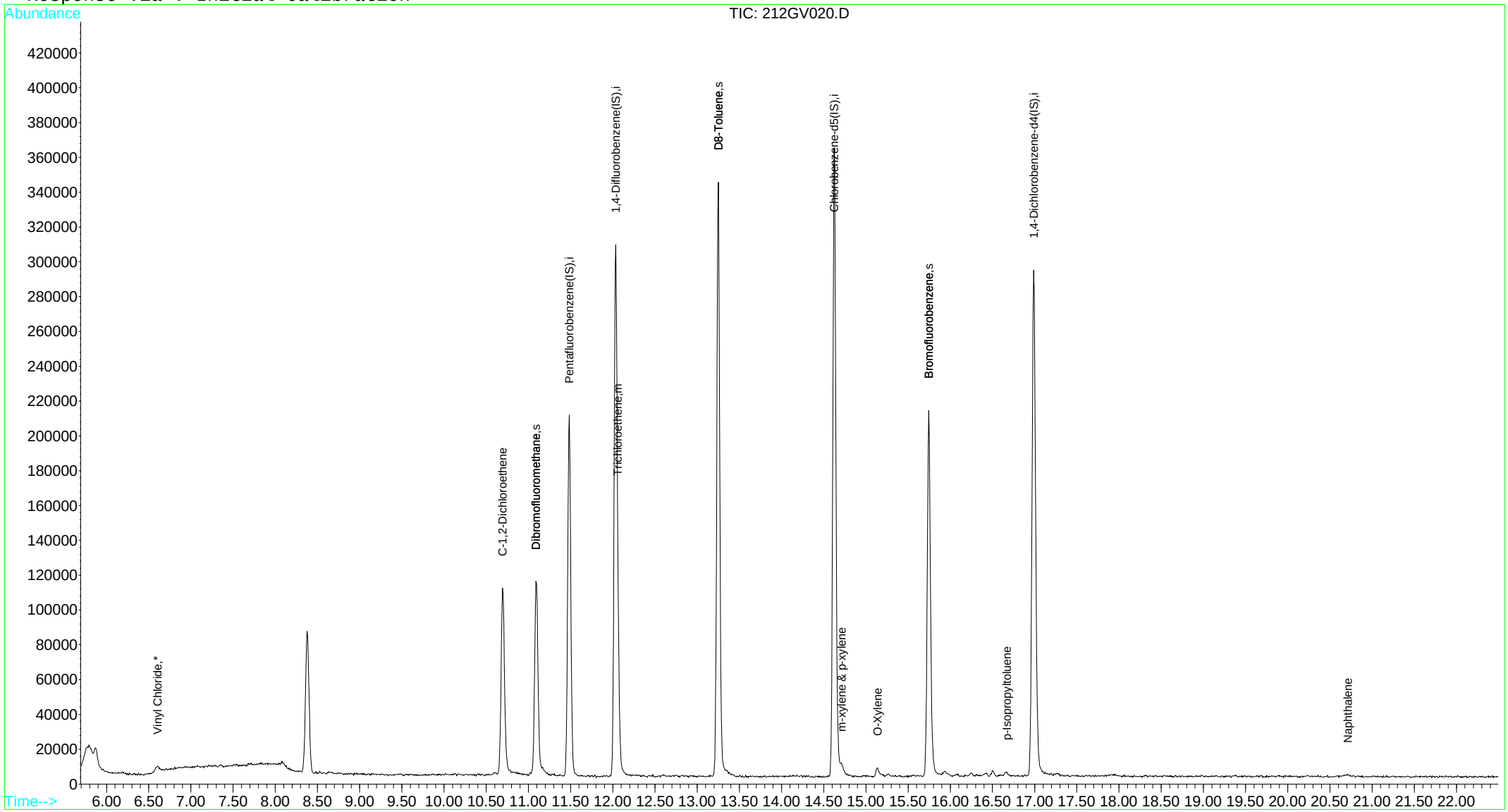
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	0.00	75	0	N.D.	
55) D8-Toluene	13.25	98	292467	48.97 ug/kg	93
57) Toluene	0.00	92	0	N.D.	
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	0.00	75	0	N.D.	
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	0.00	76	0	N.D.	
62) Tetrachloroethene	0.00	164	0	N.D.	
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	0.00	106	0	N.D. d	
68) m-xylene & p-xylene	14.71	106	675	0.20 ug/kg	66
69) O-Xylene	15.14	106	1950	0.58 ug/kg	87
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	0.00	104	0	N.D.	
72) Isopropylbenzene	0.00	105	0	N.D. d	
73) 1,2,3-Trichloropropane	0.00	75	0	N.D.	
74) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
76) Bromofluorobenzene	15.74	95	123338	48.07 ug/kg#	79
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	0.00	91	0	N.D.	
80) Bromobenzene	0.00	156	0	N.D.	
81) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.	
82) 2-Chlorotoluene	0.00	91	0	N.D.	
83) 4-Chlorotoluene	0.00	91	0	N.D.	
84) 1,2,4-Trimethylbenzene	0.00	105	0	N.D. d	
85) s-Butylbenzene	0.00	105	0	N.D. d	
86) tert-Butylbenzene	0.00	119	0	N.D.	
87) p-Isopropyltoluene	16.66	119	2289	0.35 ug/kg#	51
88) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
89) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) N-Butylbenzene	0.00	91	0	N.D.	
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.71	128	2946	0.85 ug/kg	100
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Hexachlorobutadiene	0.00	225	0	N.D.	
96) 1,2,3-Trichlorobenzene	0.00	180	0	N.D.	

(#) = qualifier out of range (m) = manual integration

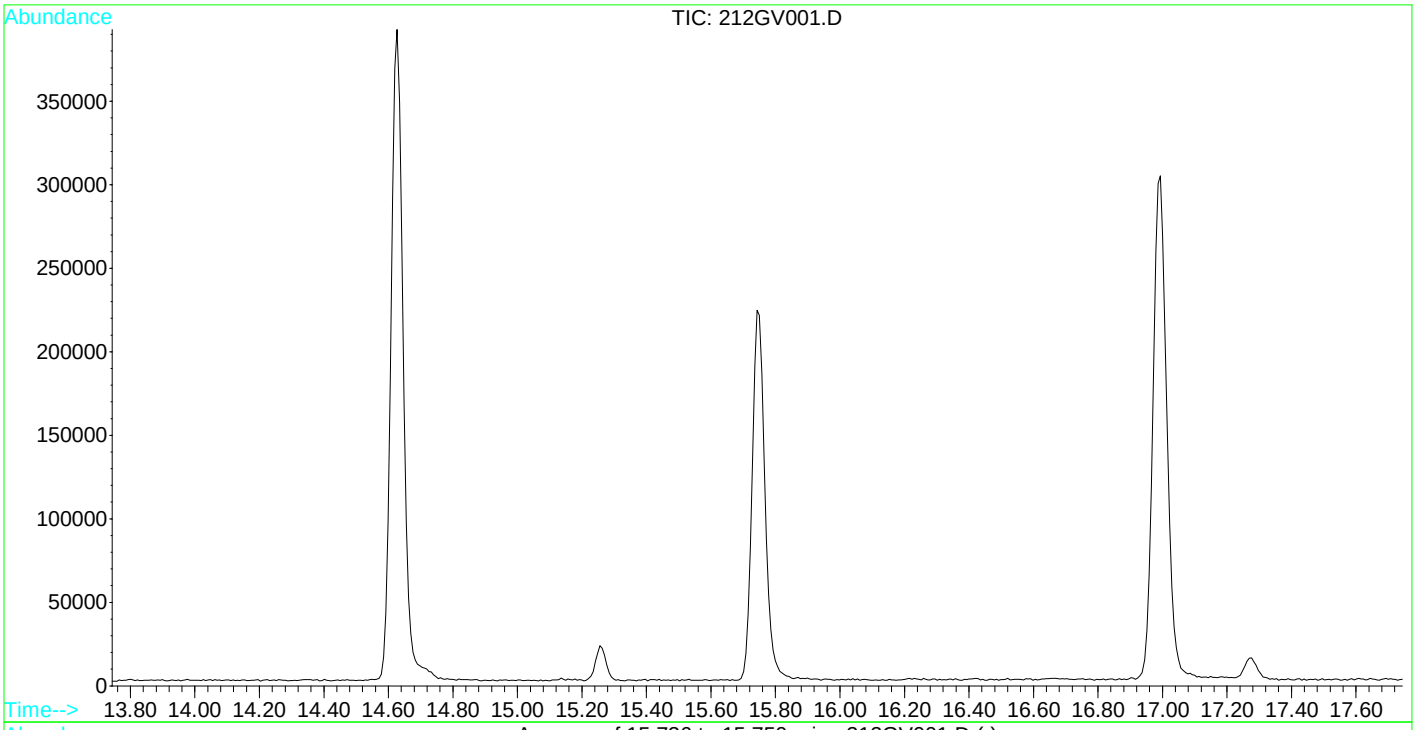
Quantitation Report

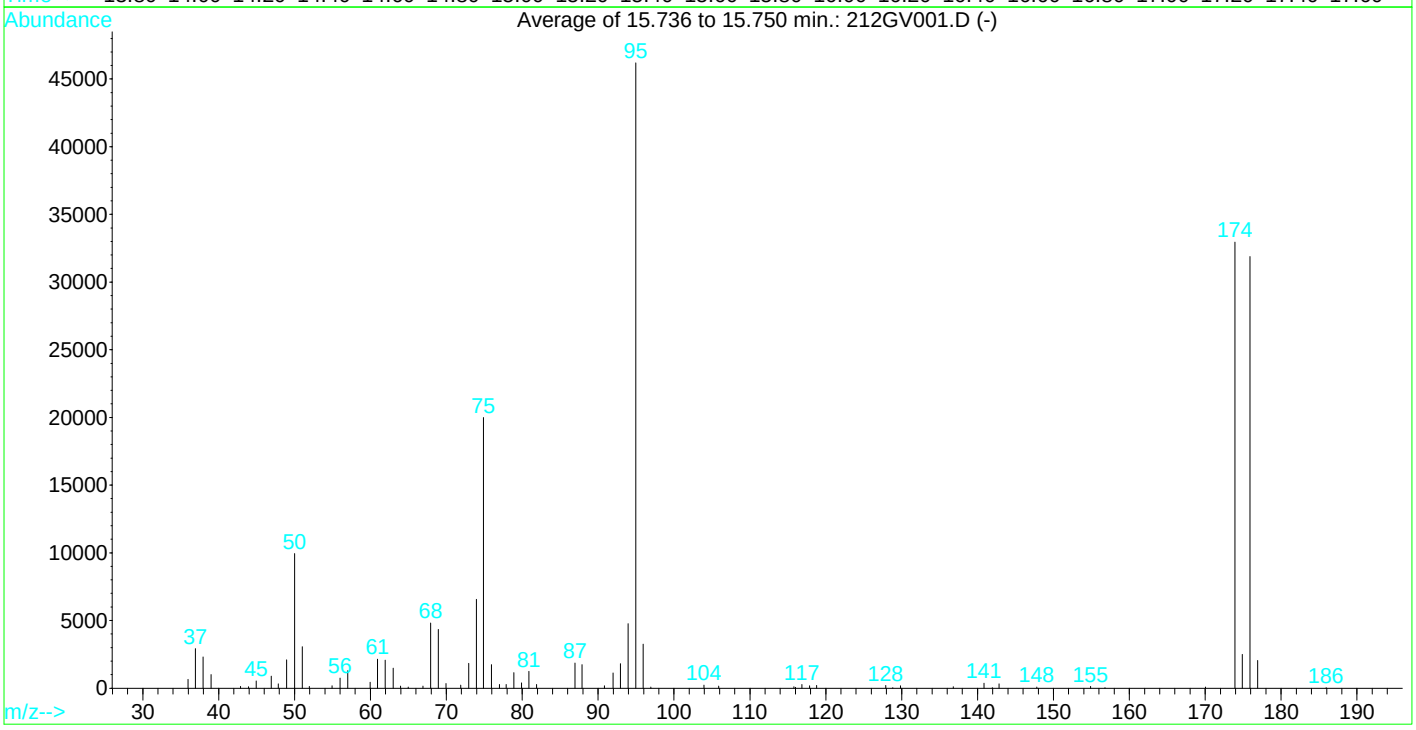
Data File : C:\HPCHEM\1\DATA\072721\212GV020.D Vial: 19
Acq On : 27 Jul 2021 4:18 pm Operator: nmc
Sample : ae05878-12re1@100x Inst : OVGCMS2
Misc : 100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 28 6:47 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Data File : C:\HPCHEM\1\DATA\072721\212GV001.D Vial: 1
Acq On : 27 Jul 2021 7:09 am Operator: nmc
Sample : aa67513-tun1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal





AutoFind: Scans 1423, 1424, 1425; Background Corrected with Scan 1413

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	140.2	46187	PASS
96	95	5	9	7.1	3259	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	200	71.3	32949	PASS
175	174	5	9	7.5	2486	PASS
176	174	95	105	96.8	31891	PASS
177	176	5	10	6.4	2045	PASS

ANALYSIS SEQUENCE

AA67520

Instrument: OVGCMS5

Calibration ID: 2106098

Printed: 7/27/2021 9:09:41AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA67520-CCV1	QC		1		A1G0800	A1D0593		
1G27016-BS1	QC		2			A1D0593		
1G27016-BLK1	QC		3			A1D0593		
AE06178-01	60D TCL SOM01.2 CLP-LIK	B	4			A1D0593		
AE06178-01	8260D	B	5			A1D0593		
AE06178-02	60D TCL SOM01.2 CLP-LIK	A	6			A1D0593		
AE05878-04RE1	60D TCL SOM01.2 CLP-LIK	B	7			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr@1x overdilute Re-extract added 7/2
AE05878-14RE1	60D TCL SOM01.2 CLP-LIK	B	8			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr@200x overdilute Re-extract added 7
AE05878-19RE1	60D TCL SOM01.2 CLP-LIK	B	9			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr@1x overdilute Re-extract added 7/2
AE05878-20	60D TCL SOM01.2 CLP-LIK	A	10			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-21	60D TCL SOM01.2 CLP-LIK	A	11			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-22	60D TCL SOM01.2 CLP-LIK	A	12			A1D0593	Tetra Tech NUS, Inc. (TE015)	run10x c12, tce nc7/26/21 custom
AE05878-23	60D TCL SOM01.2 CLP-LIK	A	13			A1D0593	Tetra Tech NUS, Inc. (TE015)	run100x nc7/26/21 custom rr 50x overd. 1/2
AE05878-24	60D TCL SOM01.2 CLP-LIK	A	14			A1D0593	Tetra Tech NUS, Inc. (TE015)	run200x nc7/26/21 custom
AE05878-25	60D TCL SOM01.2 CLP-LIK	A	15			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE05878-26	60D TCL SOM01.2 CLP-LIK	A	16			A1D0593	Tetra Tech NUS, Inc. (TE015)	hist 1x 7/23/21 kg custom
AE05878-27	60D TCL SOM01.2 CLP-LIK	A	17			A1D0593	Tetra Tech NUS, Inc. (TE015)	run10x f113 nc7/26/21 custom rr 5x overd. 1/2
AE05878-28	60D TCL SOM01.2 CLP-LIK	B	18			A1D0593	Tetra Tech NUS, Inc. (TE015)	run1x nc7/26/21 custom
AE06141-01	8260D	I	19			A1D0593		
AE06141-02	8260D	H	20			A1D0593		
AE06141-03	8260D	H	21			A1D0593		
AE06168-01	8260D	A	22			A1D0593		rr 1ax Bruno medium
1G27016-MS1	QC		23			A1D0593		

Samples Loaded By 07/27/21 Date

Data Processed By 07/28/21 Date

ANALYSIS SEQUENCE

AA67520

Instrument: OVGCMS5

Calibration ID: 2106098

Printed: 7/27/2021 9:09:41AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
IG27016-MSD1	QC		24			A1D0593		

Samples Loaded By 07/27/21 Date

Data Processed By 07/28/21 Date

PREPARATION BENCH SHEET

Printed: 7/27/2021 9:08:33AM

1G27016

ENCO Orlando

Analysis
8260D [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
___ A1B1158 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution
A1G0849 8260 2nd source Mega Mix
A1G0888 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1G27016-BLK1		Blank		QC			5	5			5	
1G27016-BS1		LCS		QC			5	5	A1G0888 A1G0849	2 2	5	
1G27016-MS1		Matrix Spike [AE06178-01]		QC	≥2	N	5	5	A1G0888 A1G0849	2 2	5	
1G27016-MSD1		Matrix Spike Dup [AE06178-01]		QC	≥2	N	5	5	A1G0888 A1G0849	2 2	5	
AE05878-04RE1	C	HMPN-MW0047-025.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	rr@1x overdilute Re-extract added 7/27/2021 by KKW
AE05878-14RE1	C	HMPN-MW0044-042.5-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	rr@200x overdilute Re-extract added 7/27/2021 by KKW
AE05878-19RE1	C	HMPN-MW0016-010.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	rr@1x overdilute Re-extract added 7/27/2021 by KKW
AE05878-20	C	HMPN-MW0029-015.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run1x nc7/26/21 custom
AE05878-21	C	HMPN-MW0030-025.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run1x nc7/26/21 custom
AE05878-22	C	HMPN-MW0031-035.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run10x c12, tce nc7/26/21 custom
AE05878-23	C	HMPN-MW0032-042.5-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run100x nc7/26/21 custom
AE05878-24	C	HMPN-MW0033-047.5-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run200x nc7/26/21 custom
AE05878-25	C	HMPN-MW0008-025.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run1x nc7/26/21 custom
AE05878-26	C	HMPN-MW0024-060.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	hist 1x 7/23/21 kg custom
AE05878-27	C	HMPN-MW0002-035.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run10x f113 nc7/26/21 custom
AE05878-28	C	HMPN-MW0004-010.0-20210730[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≥2	N	5	5			5	run1x nc7/26/21 custom
AE06141-01		Pit-4 I[MS13]	29-Jul-21	8260D	≥2	N	5	5			5	run1x nc7/26/21

PREPARATION BENCH SHEET

1G27016

ENCO Orlando

Printed: 7/27/2021 9:08:33AM

Prepared using: EPA 5030B_MS

Surrogate Solution
___ A1B1158 8260 surr working (lower conc.)

Spiking Solution
A1G0849 8260 2nd source Mega Mix
A1G0888 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE06141-02		Pit-9 H[MS13	29-Jul-21	8260D	<2	N	5	5			5	run1x nc7/26/21
AE06141-03		Pit-10 H[MS13	29-Jul-21	8260D	<2	N	5	5			5	run1x nc7/26/21
AE06168-01		Sample #1 A[MS14	03-Aug-21	8260D	<2	N	5	5			5	run 10x jmw 7/27/21; foam and chlorinated limited sample
AE06178-01	C	CRCA-ASINFLUENT-20210723 B[MS45		8260D	<2	N	5	5			5	Added for BatchQC in: 1G27016
AE06178-01	C	CRCA-ASINFLUENT-20210723 B[MS45	30-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	history 1x jmw 7/26/21 custom
AE06178-02	C	CRCA-ASEFFLUENT-20210726 B[MS45	30-Jul-21	8260D TCL SOM01.2 CLP-LIKE	<2	N	5	5			5	history 1x ND jmw 7/26/21 custom

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5
EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 07/27/21

StopDate 07/27/21

Instrument ID ONCms-5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1G0592	P&T Anti-Foam working solution	N/A

07/27/21

Samples Prepared By Date

Samples Prepared By Date

Sequence Name: C:\msdchem\1\sequence\215GV.s
Comment:
Operator: kkw
Data Path: C:\msdchem\1\DATA\072721\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample Name/Misc Info		
1)	Sample 1	215GV001	8260S	rinse
2)	Sample 2	215GV002	8260S	CCV1
3)	Sample 3	215GV003	8260S	BS1
4)	Sample 4	215GV004	8260S	RINSE
5)	Sample 5	215GV005	8260S	BLK1
6)	Sample 6	215GV006	8260S	AE06178-01
7)	Sample 7	215GV007	8260S	AE06178-02
8)	Sample 8	215GV008	8260S	AE05878-04RE1
9)	Sample 9	215GV009	8260S	AE05878-14RE1@200X
10)	Sample 10	215GV010	8260S	AE05878-19RE1
11)	Sample 11	215GV011	8260S	AE05878-20
12)	Sample 12	215GV012	8260S	AE05878-21
13)	Sample 13	215GV013	8260S	AE05878-22@10X
14)	Sample 14	215GV014	8260S	AE05878-23@100X
15)	Sample 15	215GV015	8260S	AE05878-24@200X
16)	Sample 16	215GV016	8260S	AE05878-25
17)	Sample 17	215GV017	8260S	AE05878-26
18)	Sample 18	215GV018	8260S	AE05878-27@10X
19)	Sample 19	215GV019	8260S	AE05878-28
20)	Sample 20	215GV020	8260S	AE06141-01
21)	Sample 21	215GV021	8260S	AE06141-02
22)	Sample 22	215GV022	8260S	AE06141-03
23)	Sample 23	215GV023	8260S	AE06168-01@10X
24)	Sample 24	215GV024	8260S	1G27016-MS1
25)	Sample 24	215GV025	8260S	1G27016-MSD1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV002.D
Acq On : 27 Jul 2021 8:02 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 27 09:11:39 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1102000	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2569272	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1689287	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1269237	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	699084	53.02	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.04%				
52) D8-Toluene	11.784	98	3361366	53.05	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 106.10%				
73) Bromofluorobenzene	14.334	95	1525652	52.58	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 105.16%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	291602	25.72	ug/L		98
3) Chloromethane	4.416	50	399003	23.69	ug/L		96
4) Vinyl Chloride	4.592	62	306140	20.89	ug/L		90
5) Bromomethane	5.239	94	167011	41.52	ug/L		92
6) Chloroethane	5.444	64	154961	19.27	ug/L		97
7) Trichlorofluoromethane	5.703	101	347596	20.72	ug/L		98
8) Diethyl ether	6.190	59	509916	44.78	ug/L		99
9) 1,1-Dichloroethene	6.543	96	487486	41.62	ug/L		99
10) Trichlorotrifluoroethane	6.566	151	285332	40.18	ug/L		95
11) Acrolein	7.025	56	1805928	610.41	ug/L		100
12) Iodomethane	6.784	142	2708700	264.95	ug/L		99
13) Carbon Disulfide	6.631	76	8973707	270.04	ug/L		99
14) 3-chloropropene	7.201	41	1012768	51.70	ug/L		99
15) Acetone	7.401	43	1060122	226.54	ug/L		99
16) Methylene Chloride	7.348	84	677616	45.11	ug/L		93
17) Methyl Acetate	7.524	43	575203	46.81	ug/L		98
18) t-1,2-Dichloroethene	7.553	96	629399	47.09	ug/L		98
19) Methyl tert-butyl ether	7.642	73	1733199	51.15	ug/L		99
20) Acetonitrile	8.018	41	1639651	527.16	ug/L		99
21) Isopropyl ether	8.053	45	2238374	52.64	ug/L		98
22) Chloroprene	8.282	88	628226	49.18	ug/L		99
23) 1,1-Dichloroethane	8.323	63	1267808	49.90	ug/L		99
24) Acrylonitrile	8.388	53	3433373	586.30	ug/L		100
25) Vinyl Acetate	8.546	43	7982236	264.66	ug/L		99
26) c-1,2-Dichloroethene	8.952	96	769294	53.29	ug/L		99
27) 2,2-Dichloropropane	9.081	77	960073	52.58	ug/L		99
28) Bromochloromethane	9.187	128	239792	44.97	ug/L		96
29) Cyclohexane	9.193	56	1230332	48.59	ug/L		99
30) Chloroform	9.228	83	1234451	50.87	ug/L		99
32) Dibromofluoromethane	9.434	113	699084	53.02	ug/L	#	91
33) 2-Butanone	9.545	72	569525	262.57	ug/L		99
34) 1,1,1-Trichloroethane	9.492	97	943421	52.43	ug/L		98
35) 1,1-Dichloropropene	9.610	75	979794	48.96	ug/L		100
36) Propionitrile	9.904	54	1429919	547.19	ug/L		94
37) Methacrylonitrile	9.915	41	5715523	558.29	ug/L		99
38) Isobutyl Alcohol	9.957	43	1279543	1023.18	ug/L		99
40) Carbon Tetrachloride	9.416	117	698000	47.52	ug/L		97
41) Benzene	9.880	78	2950421	48.46	ug/L		100
42) 1,2-Dichloroethane	10.092	62	844411	46.77	ug/L		98
43) Trichloroethene	10.456	130	638684	50.73	ug/L		98
44) Methyl cyclohexane	10.456	83	1296811	47.26	ug/L		98
45) Dibromomethane	10.914	93	429605	47.97	ug/L		97
46) 1,2-Dichloropropane	10.991	63	868009	50.10	ug/L		99
47) Bromodichloromethane	11.020	83	903305	53.14	ug/L		99
48) Methyl Methacrylate	11.085	69	625519	45.64	ug/L		96
49) 1,4-Dioxane	11.202	88	181574	1224.95	ug/L		99
50) 2-Chloroethyl vinyl ether	11.490	63	2397154	247.06	ug/L		99
51) C-1,3-Dichloropropene	11.614	75	1371334	53.72	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV002.D
Acq On : 27 Jul 2021 8:02 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 27 09:11:39 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

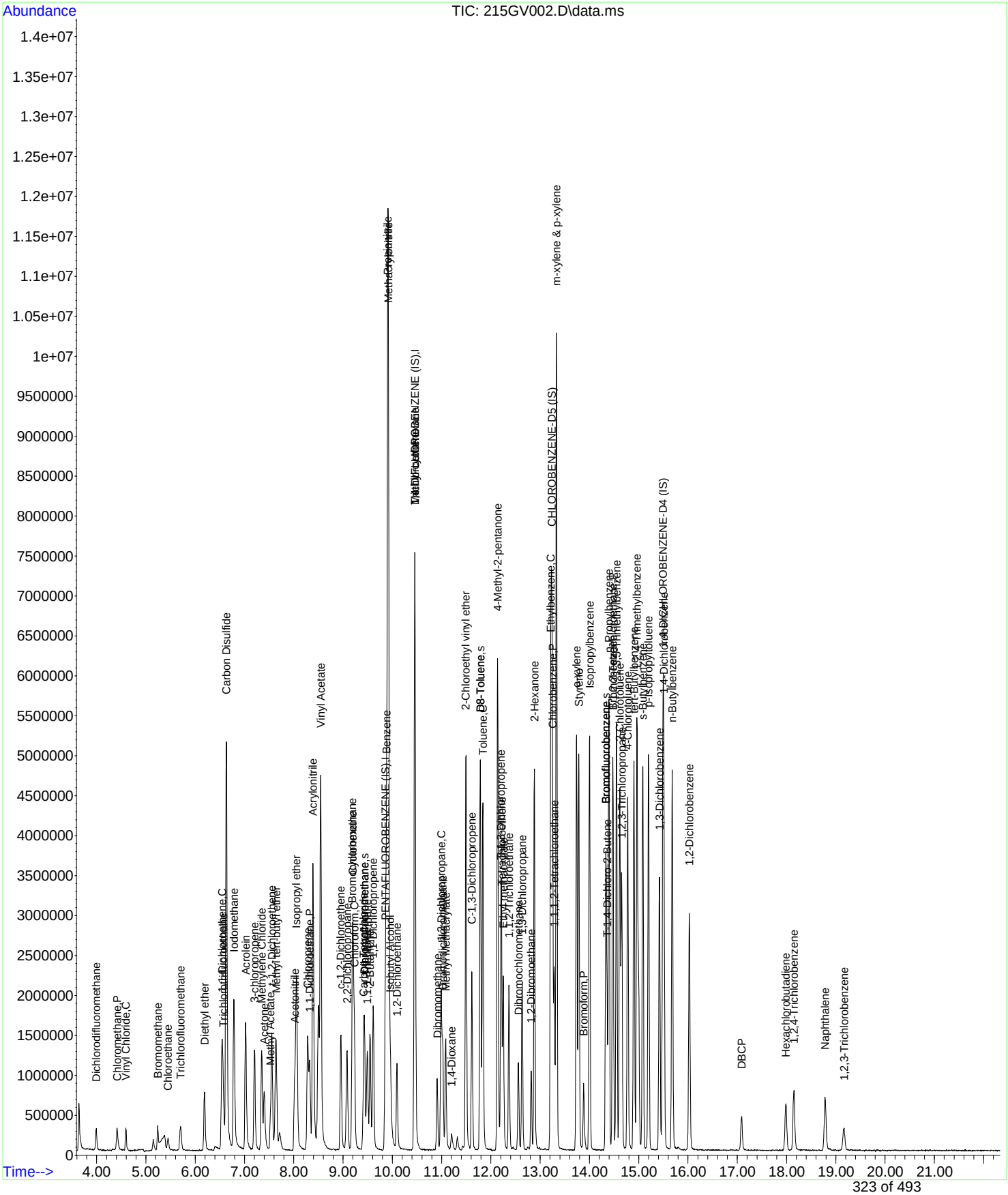
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3361366	53.05	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	649030	274.92	ug/L		100
56) Toluene	11.837	92	1993515	48.25	ug/L		97
57) T-1,3-Dichloropropene	12.201	75	1099249	52.58	ug/L		99
58) Tetrachloroethene	12.219	164	450920	47.70	ug/L		97
59) Ethyl methacrylate	12.248	69	1194186	49.23	ug/L		96
60) 1,1,2-Trichloroethane	12.366	97	717687	50.49	ug/L		99
61) Dibromochloromethane	12.559	129	604286	47.74	ug/L		99
62) 1,3-Dichloropropane	12.636	76	1309480	50.29	ug/L		99
63) 1,2-Dibromoethane	12.818	107	719723	50.54	ug/L		99
64) 2-Hexanone	12.883	43	3096003	241.19	ug/L		99
65) Ethylbenzene	13.212	106	1197806	51.39	ug/L		94
66) Chlorobenzene	13.253	112	2022107	49.27	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.288	131	617542	52.13	ug/L		99
68) m-xylene & p-xylene	13.329	106	2962973	99.07	ug/L		98
69) o-xylene	13.740	106	1526954	51.75	ug/L		98
70) Styrene	13.782	104	2575819	49.30	ug/L		99
71) Bromoform	13.881	173	338375	46.88	ug/L		97
72) Isopropylbenzene	14.005	105	3848985	49.05	ug/L		100
74) Bromofluorobenzene	14.334	95	1525652	52.58	ug/L	#	75
75) n-Propylbenzene	14.393	91	5061964	49.23	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.475	83	1269446	52.21	ug/L		98
77) 1,2,3-Trichloropropane	14.657	61	349771	62.15	ug/L	#	78
78) T-1,4-Dichloro-2-Butene	14.357	53	393784	55.31	ug/L		92
80) Bromobenzene	14.475	156	712104	51.80	ug/L		97
81) 1,2,4-Trimethylbenzene	14.963	105	3386643	50.50	ug/L		100
82) 2-Chlorotoluene	14.616	91	3020773	53.76	ug/L		100
83) 4-Chlorotoluene	14.775	91	3117192	50.56	ug/L		99
84) tert-Butylbenzene	14.904	119	2645815	50.04	ug/L		99
85) 1,3,5-Trimethylbenzene	14.551	105	3396828	50.72	ug/L		98
86) p-Isopropyltoluene	15.198	119	3333170	51.51	ug/L		100
87) s-Butylbenzene	15.080	105	4115697	51.18	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	1506231	52.38	ug/L		99
89) 1,4-Dichlorobenzene	15.509	146	1514059	50.80	ug/L		99
90) n-Butylbenzene	15.679	91	3364915	50.39	ug/L		100
91) 1,2-Dichlorobenzene	16.026	146	1360435	49.03	ug/L		96
92) DBCP	17.090	157	141569	51.36	ug/L		98
93) Hexachlorobutadiene	17.983	225	145312	46.76	ug/L		91
94) 1,2,4-Trichlorobenzene	18.147	180	315121	50.23	ug/L		95
95) Naphthalene	18.782	128	871556	49.59	ug/L		98
96) 1,2,3-Trichlorobenzene	19.169	180	138317	50.36	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV002.D
Acq On : 27 Jul 2021 8:02 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 27 09:11:39 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV003.D
Acq On : 27 Jul 2021 8:38 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 27 09:11:58 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1079201	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2646304	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1669456	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1259086	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	731304	56.63	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 113.26%				
52) D8-Toluene	11.784	98	3336959	51.13	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.26%				
73) Bromofluorobenzene	14.334	95	1459713	50.90	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	312331	28.13	ug/L		99
3) Chloromethane	4.422	50	381140	23.10	ug/L		100
4) Vinyl Chloride	4.592	62	329405	22.95	ug/L		92
5) Bromomethane	5.238	94	54943	15.00	ug/L	#	88
6) Chloroethane	5.456	64	174353	22.67	ug/L		93
7) Trichlorofluoromethane	5.709	101	347447	21.15	ug/L		98
8) Diethyl ether	6.190	59	259645	23.28	ug/L		96
9) 1,1-Dichloroethene	6.543	96	250122	21.80	ug/L		98
10) Trichlorotrifluoroethane	6.566	151	141758	20.38	ug/L		96
11) Acrolein	7.031	56	96628	33.35	ug/L		98
12) Iodomethane	6.790	142	375761	39.00	ug/L		98
13) Carbon Disulfide	6.637	76	847312	24.51	ug/L		99
14) 3-chloropropene	7.201	41	463250	23.37	ug/L		100
15) Acetone	7.407	43	230672	50.33	ug/L		99
16) Methylene Chloride	7.348	84	320228	21.77	ug/L		95
17) Methyl Acetate	7.530	43	258847	21.51	ug/L		99
18) t-1,2-Dichloroethene	7.559	96	282970	21.62	ug/L		98
19) Methyl tert-butyl ether	7.636	73	718780	21.66	ug/L		97
20) Acetonitrile	8.035	41	421090	138.24	ug/L		93
21) Isopropyl ether	8.059	45	956755	22.98	ug/L		98
22) Chloroprene	8.282	88	267036	21.35	ug/L		98
23) 1,1-Dichloroethane	8.323	63	550389	22.12	ug/L		99
24) Acrylonitrile	8.405	53	164922	28.76	ug/L	#	99
25) Vinyl Acetate	8.552	43	592665	20.07	ug/L		97
26) c-1,2-Dichloroethene	8.958	96	323068	22.85	ug/L		99
27) 2,2-Dichloropropane	9.075	77	406729	22.75	ug/L		99
28) Bromochloromethane	9.193	128	120262	23.03	ug/L		96
29) Cyclohexane	9.204	56	567623	22.89	ug/L		100
30) Chloroform	9.234	83	511651	21.53	ug/L		98
32) Dibromofluoromethane	9.434	113	731304	56.63	ug/L	#	93
33) 2-Butanone	9.551	72	129725	61.07	ug/L		91
34) 1,1,1-Trichloroethane	9.492	97	397579	22.56	ug/L		99
35) 1,1-Dichloropropene	9.616	75	429540	21.92	ug/L		97
36) Propionitrile	9.910	54	78311	30.60	ug/L	#	1
37) Methacrylonitrile	9.921	41	351779	35.09	ug/L	#	80
38) Isobutyl Alcohol	9.910	43	273472	223.30	ug/L	#	57
40) Carbon Tetrachloride	9.422	117	287525	19.01	ug/L		98
41) Benzene	9.886	78	1335291	21.29	ug/L		96
42) 1,2-Dichloroethane	10.098	62	361003	19.42	ug/L		99
43) Trichloroethene	10.462	130	259931	20.04	ug/L	#	82
44) Methyl cyclohexane	10.456	83	566480	20.04	ug/L		98
45) Dibromomethane	10.908	93	181423	19.67	ug/L		97
46) 1,2-Dichloropropane	10.991	63	367582	20.60	ug/L		98
47) Bromodichloromethane	11.020	83	363928	20.79	ug/L		100
48) Methyl Methacrylate	11.085	69	247062	17.50	ug/L		97
49) 1,4-Dioxane	11.202	88	82416	613.66	ug/L		92
50) 2-Chloroethyl vinyl ether	11.496	63	998919	99.95	ug/L		99
51) C-1,3-Dichloropropene	11.613	75	538988	20.50	ug/L		99

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV003.D
Acq On : 27 Jul 2021 8:38 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 27 09:11:58 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

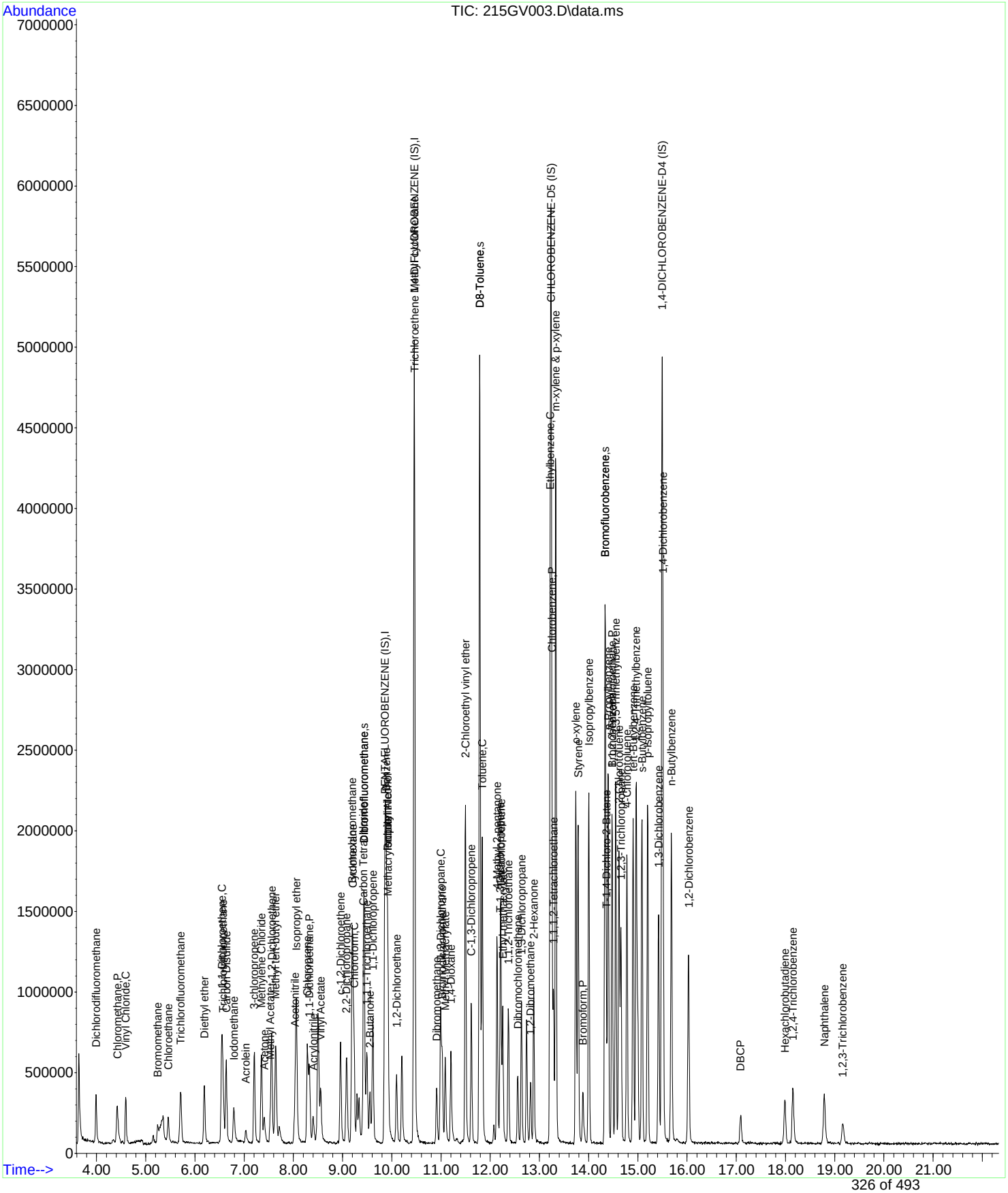
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3336959	51.13	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	138037	56.77	ug/L		99
56) Toluene	11.837	92	839483	20.56	ug/L		96
57) T-1,3-Dichloropropene	12.201	75	477004	23.09	ug/L		98
58) Tetrachloroethene	12.219	164	193857	20.75	ug/L		97
59) Ethyl methacrylate	12.254	69	484074	20.19	ug/L		98
60) 1,1,2-Trichloroethane	12.371	97	290179	20.66	ug/L		96
61) Dibromochloromethane	12.559	129	238530	19.07	ug/L		100
62) 1,3-Dichloropropane	12.636	76	542239	21.07	ug/L		99
63) 1,2-Dibromoethane	12.818	107	288714	20.51	ug/L	#	99
64) 2-Hexanone	12.883	43	652396	51.43	ug/L		99
65) Ethylbenzene	13.218	106	484807	21.05	ug/L		99
66) Chlorobenzene	13.253	112	848429	20.92	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.288	131	244127	20.85	ug/L		97
68) m-xylene & p-xylene	13.329	106	1249455	42.27	ug/L		99
69) o-xylene	13.740	106	617851	21.19	ug/L		99
70) Styrene	13.787	104	1032081	19.99	ug/L		99
71) Bromoform	13.881	173	137131	19.23	ug/L		96
72) Isopropylbenzene	14.005	105	1610038	20.21	ug/L		99
74) Bromofluorobenzene	14.334	95	1459713	50.90	ug/L	#	76
75) n-Propylbenzene	14.399	91	2106174	20.08	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.475	83	504824	21.01	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	108782	19.56	ug/L		97
78) T-1,4-Dichloro-2-Butene	14.357	53	158347	22.50	ug/L	#	83
80) Bromobenzene	14.475	156	291344	21.37	ug/L		95
81) 1,2,4-Trimethylbenzene	14.963	105	1417033	21.21	ug/L		99
82) 2-Chlorotoluene	14.616	91	1261897	22.64	ug/L		99
83) 4-Chlorotoluene	14.775	91	1298507	21.23	ug/L		100
84) tert-Butylbenzene	14.904	119	1079690	20.58	ug/L		99
85) 1,3,5-Trimethylbenzene	14.551	105	1365672	20.55	ug/L		98
86) p-Isopropyltoluene	15.198	119	1401602	21.83	ug/L		99
87) s-Butylbenzene	15.086	105	1740775	21.82	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	635844	22.29	ug/L		99
89) 1,4-Dichlorobenzene	15.509	146	639069	21.62	ug/L	#	83
90) n-Butylbenzene	15.679	91	1425068	21.51	ug/L		99
91) 1,2-Dichlorobenzene	16.032	146	579659	21.06	ug/L		98
92) DBCP	17.084	157	55441	23.63	ug/L		98
93) Hexachlorobutadiene	17.988	225	61293	19.88	ug/L		94
94) 1,2,4-Trichlorobenzene	18.147	180	148180	26.89	ug/L		94
95) Naphthalene	18.788	128	425275	28.92	ug/L		100
96) 1,2,3-Trichlorobenzene	19.158	180	61662	26.89	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV003.D
Acq On : 27 Jul 2021 8:38 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 27 09:11:58 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV005.D
Acq On : 27 Jul 2021 9:34 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 27 10:28:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1024672	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2497844	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1573333	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1175358	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	648443	52.89	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.78%			
52) D8-Toluene	11.784	98	3125331	50.74	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.48%			
73) Bromofluorobenzene	14.334	95	1338005	49.51	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	0.000		0	N.D.		
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	648443	52.89	ug/L #	88
33) 2-Butanone	0.000		0	N.D.	d	
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.	d	
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.880	78	4564	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV005.D
Acq On : 27 Jul 2021 9:34 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 27 10:28:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

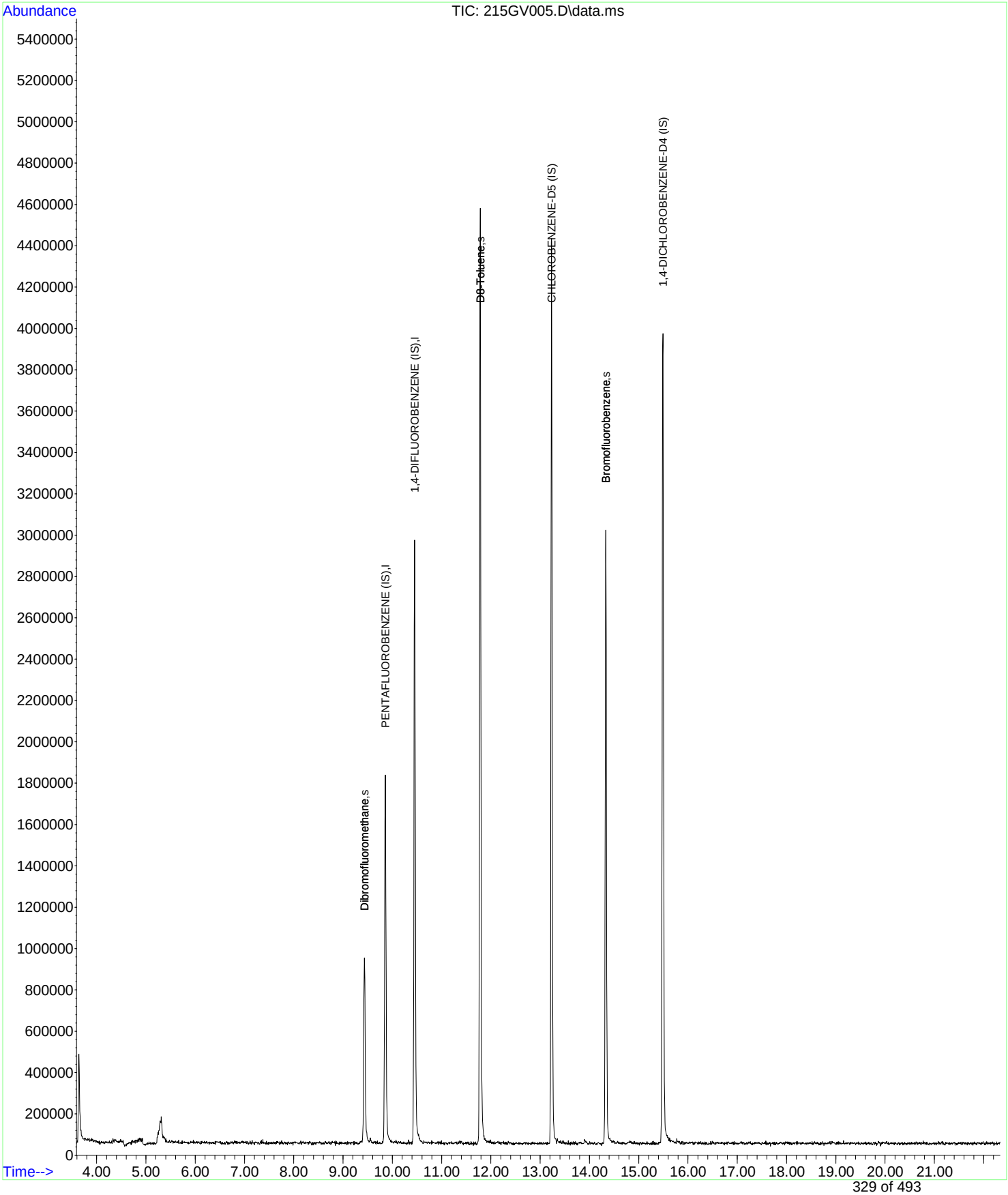
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3125331	50.74 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1338788	49.54 ug/L #	77
75) n-Propylbenzene	14.340	91	4486	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV005.D
Acq On : 27 Jul 2021 9:34 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 27 10:28:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV006.D
Acq On : 27 Jul 2021 10:02 am
Operator : kkw
Sample : AE06178-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 27 10:28:53 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1005038	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2469097	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1531646	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1159017	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	640985	53.30	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 106.60%				
52) D8-Toluene	11.784	98	3126527	51.35	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.70%				
73) Bromofluorobenzene	14.334	95	1314491	49.96	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.92%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.586	62	156765	11.73	ug/L	#	88
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.	d		
13) Carbon Disulfide	0.000		0	N.D.	d		
14) 3-chloropropene	0.000		0	N.D.	d		
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	7.565	96	5703	0.47	ug/L	#	66
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.964	96	4248	0.32	ug/L	#	72
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	640985	53.30	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.880	78	7314	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV006.D
Acq On : 27 Jul 2021 10:02 am
Operator : kkw
Sample : AE06178-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 27 10:28:53 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

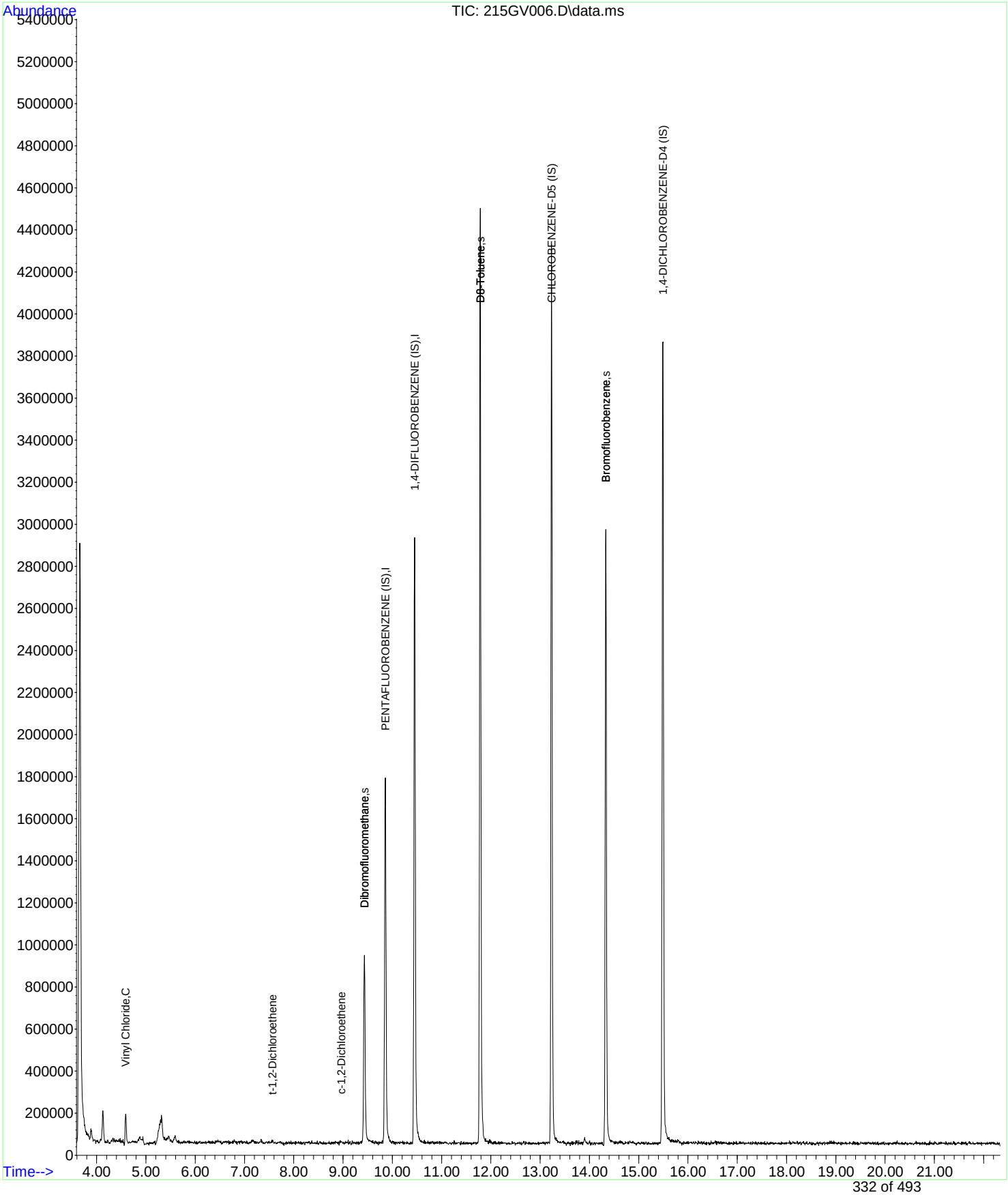
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3126527	51.35 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1314491	49.96 ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV006.D
Acq On : 27 Jul 2021 10:02 am
Operator : kkw
Sample : AE06178-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 27 10:28:53 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV008.D
Acq On : 27 Jul 2021 10:58 am
Operator : kkw
Sample : AE05878-04RE1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 27 11:29:54 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	1006516	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2417256	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1490343	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1149390	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	632532	52.52	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.04%			
52) D8-Toluene	11.784	98	3076710	51.61	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.22%			
73) Bromofluorobenzene	14.328	95	1290054	50.39	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.78%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	4.592	62	7317	0.55	ug/L #	41
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.	d	
13) Carbon Disulfide	6.654	76	4153	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.	d	
21) Isopropyl ether	8.064	45	5537	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	8.311	63	12155	0.52	ug/L #	81
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.958	96	9988	0.76	ug/L	84
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	633310	52.58	ug/L #	92
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.	d	
41) Benzene	9.892	78	7607	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	0.000		0	N.D.		
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV008.D
Acq On : 27 Jul 2021 10:58 am
Operator : kkw
Sample : AE05878-04RE1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 27 11:29:54 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

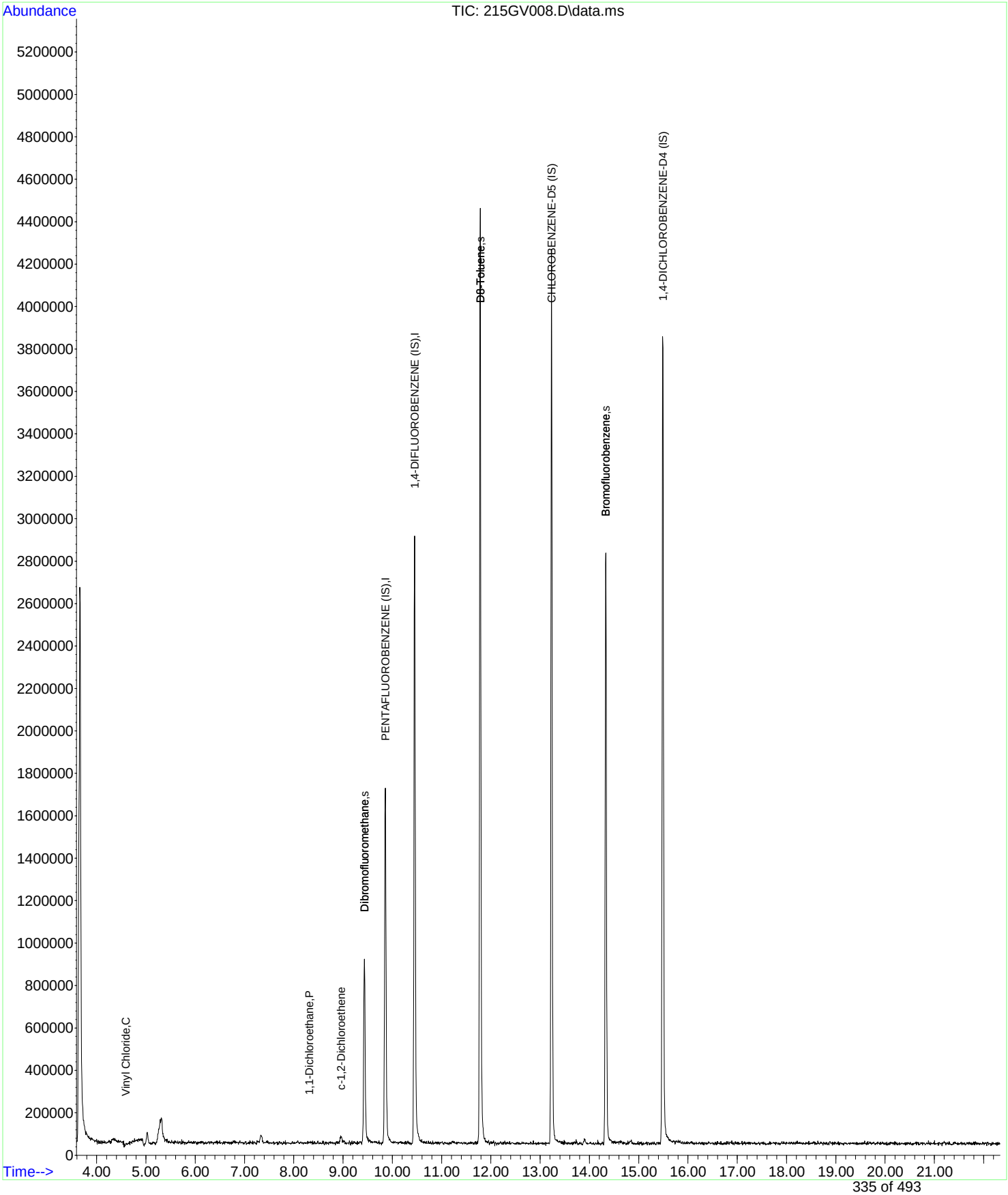
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3076710	51.61 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1290912	50.42 ug/L #	76
75) n-Propylbenzene	14.310	91	5964	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV008.D
Acq On : 27 Jul 2021 10:58 am
Operator : kkw
Sample : AE05878-04RE1
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 27 11:29:54 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV009.D
Acq On : 27 Jul 2021 11:26 am
Operator : kkw
Sample : AE05878-14RE1@200X
Misc : 200
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 27 13:39:47 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1021883	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2461273	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1486821	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1153112	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	632974	51.77	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.54%				
52) D8-Toluene	11.784	98	3041916	50.12	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.24%				
73) Bromofluorobenzene	14.328	95	1292263	50.60	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	0.000		0	N.D.	d		
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	6.561	151	573585	87.10	ug/L		98
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	23059	1.72	ug/L		93
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.428	113	632974	51.77	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.	d		
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.880	78	4628	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.456	130	13328	1.11	ug/L	#	1
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV009.D
Acq On : 27 Jul 2021 11:26 am
Operator : kkw
Sample : AE05878-14RE1@200X
Misc : 200
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 27 13:39:47 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

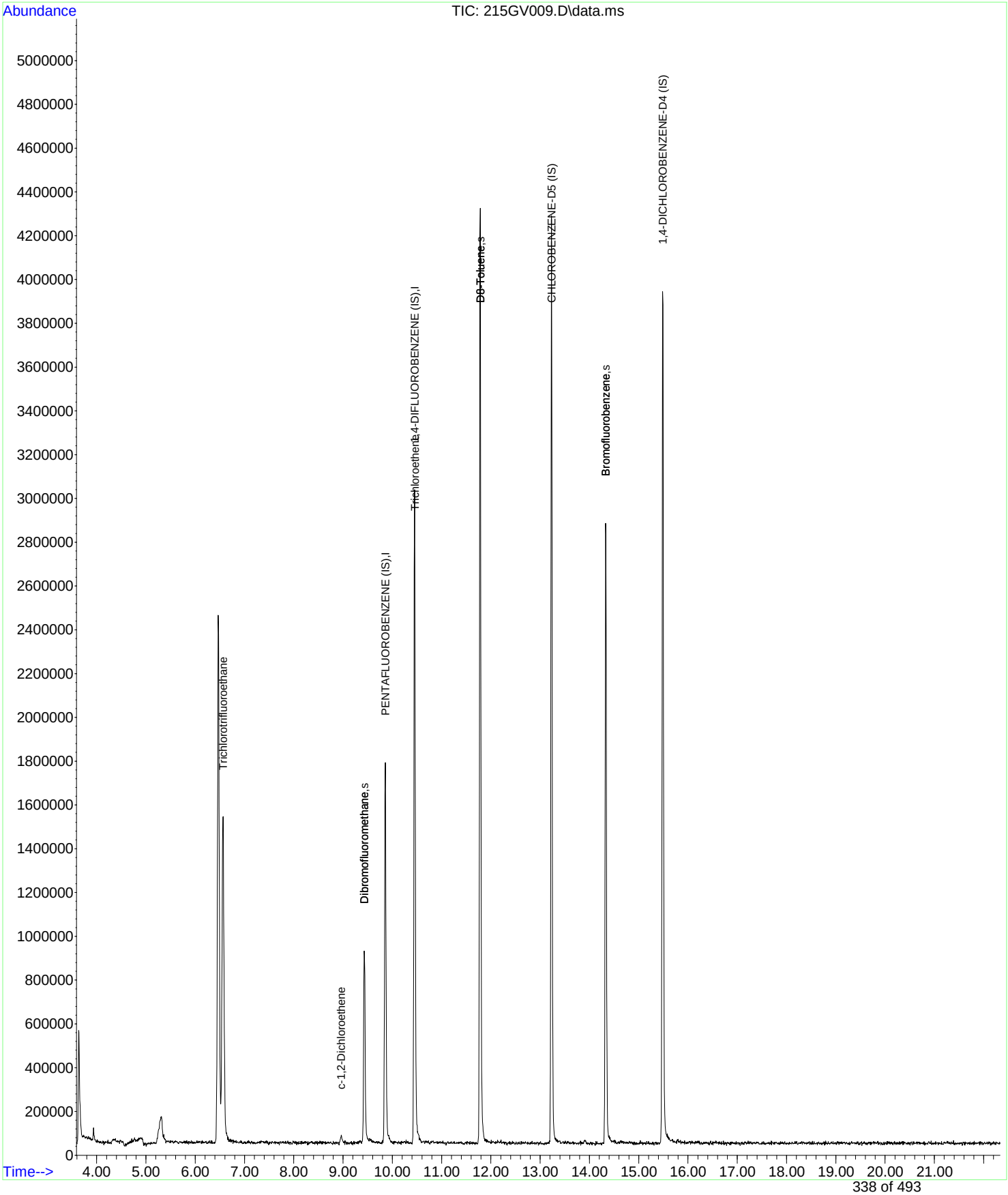
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3041916	50.12 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1292263	50.60 ug/L #	78
75) n-Propylbenzene	14.334	91	4274	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV009.D
Acq On : 27 Jul 2021 11:26 am
Operator : kkw
Sample : AE05878-14RE1@200X
Misc : 200
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 27 13:39:47 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV010.D
Acq On : 27 Jul 2021 11:54 am
Operator : kkw
Sample : AE05878-19RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 27 13:40:28 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.856	168	982461	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2432872	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1476258	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1113894	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.433	113	608960	51.80	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.60%				
52) D8-Toluene	11.784	98	3034941	50.58	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.16%				
73) Bromofluorobenzene	14.328	95	1287961	50.79	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.58%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.592	62	11848	0.91	ug/L	#	44
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	6.784	142	5896	0.68	ug/L	#	43
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D. d			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	7.553	96	8185	0.69	ug/L	#	75
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	80587	6.26	ug/L		94
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.433	113	609542	51.85	ug/L	#	87
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.892	78	5594	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV010.D
Acq On : 27 Jul 2021 11:54 am
Operator : kkw
Sample : AE05878-19RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 27 13:40:28 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

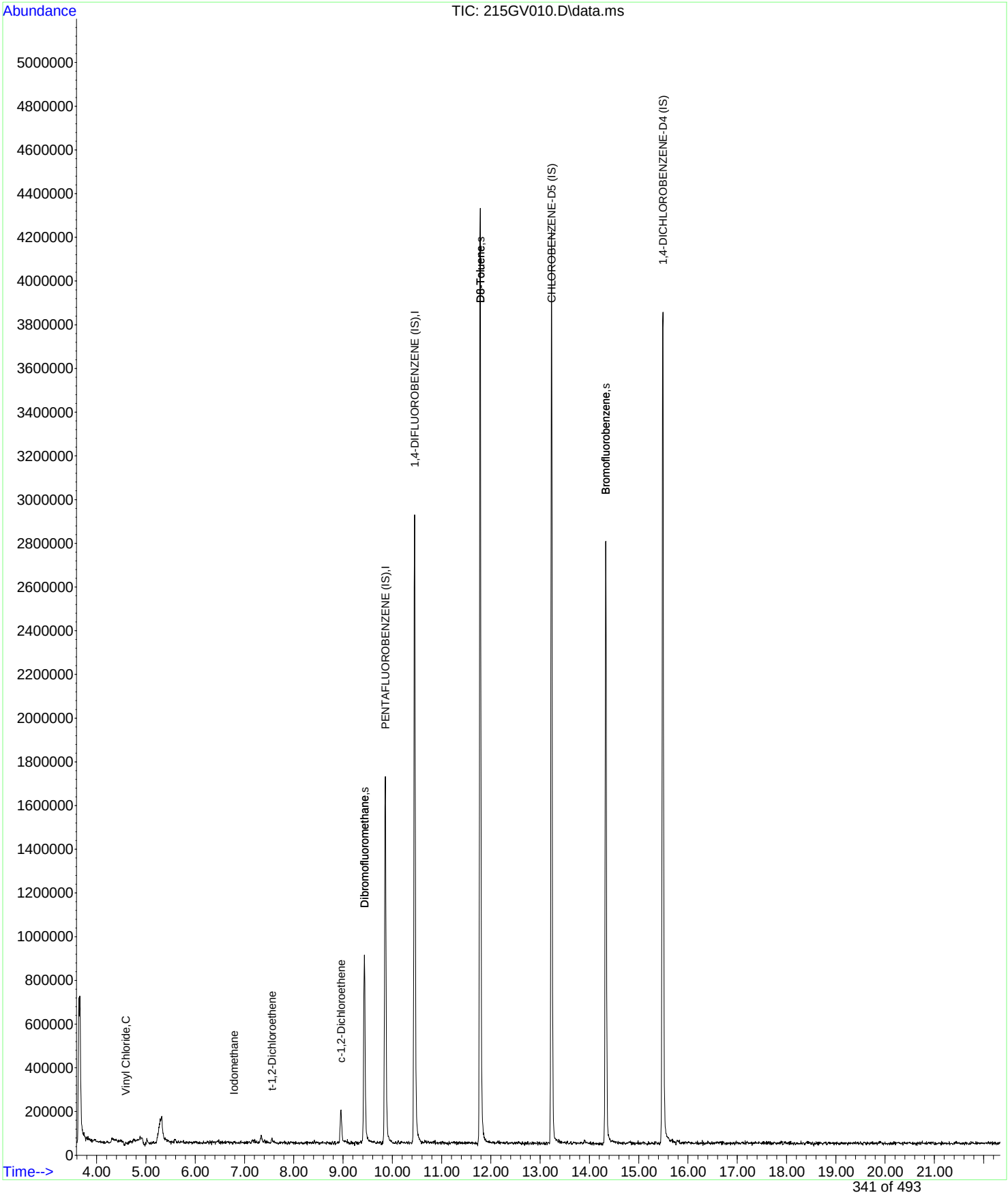
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3030721	50.51 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.328	95	1287961	50.79 ug/L #	75
75) n-Propylbenzene	14.322	91	6021	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV010.D
Acq On : 27 Jul 2021 11:54 am
Operator : kkw
Sample : AE05878-19RE1
Misc :
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jul 27 13:40:28 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV011.D
Acq On : 27 Jul 2021 12:22 pm
Operator : kkw
Sample : AE05878-20
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 27 13:41:12 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	997993	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2352240	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1479895	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1113688	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	611378	51.20	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.40%			
52) D8-Toluene	11.784	98	3006406	51.83	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.66%			
73) Bromofluorobenzene	14.334	95	1264126	49.73	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.46%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	4.592	62	7487	0.56	ug/L #	53
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.560	151	6181	0.96	ug/L #	75
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	6.790	142	6329	0.72	ug/L #	43
13) Carbon Disulfide	6.637	76	4504	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.	d	
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.	d	
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.952	96	209674	16.04	ug/L	98
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	612338	51.28	ug/L #	89
33) 2-Butanone	0.000		0	N.D.		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.892	78	4326	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.456	130	64317	5.58	ug/L #	23
44) Methyl cyclohexane	0.000		0	N.D.	d	
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV011.D
Acq On : 27 Jul 2021 12:22 pm
Operator : kkw
Sample : AE05878-20
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 27 13:41:12 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

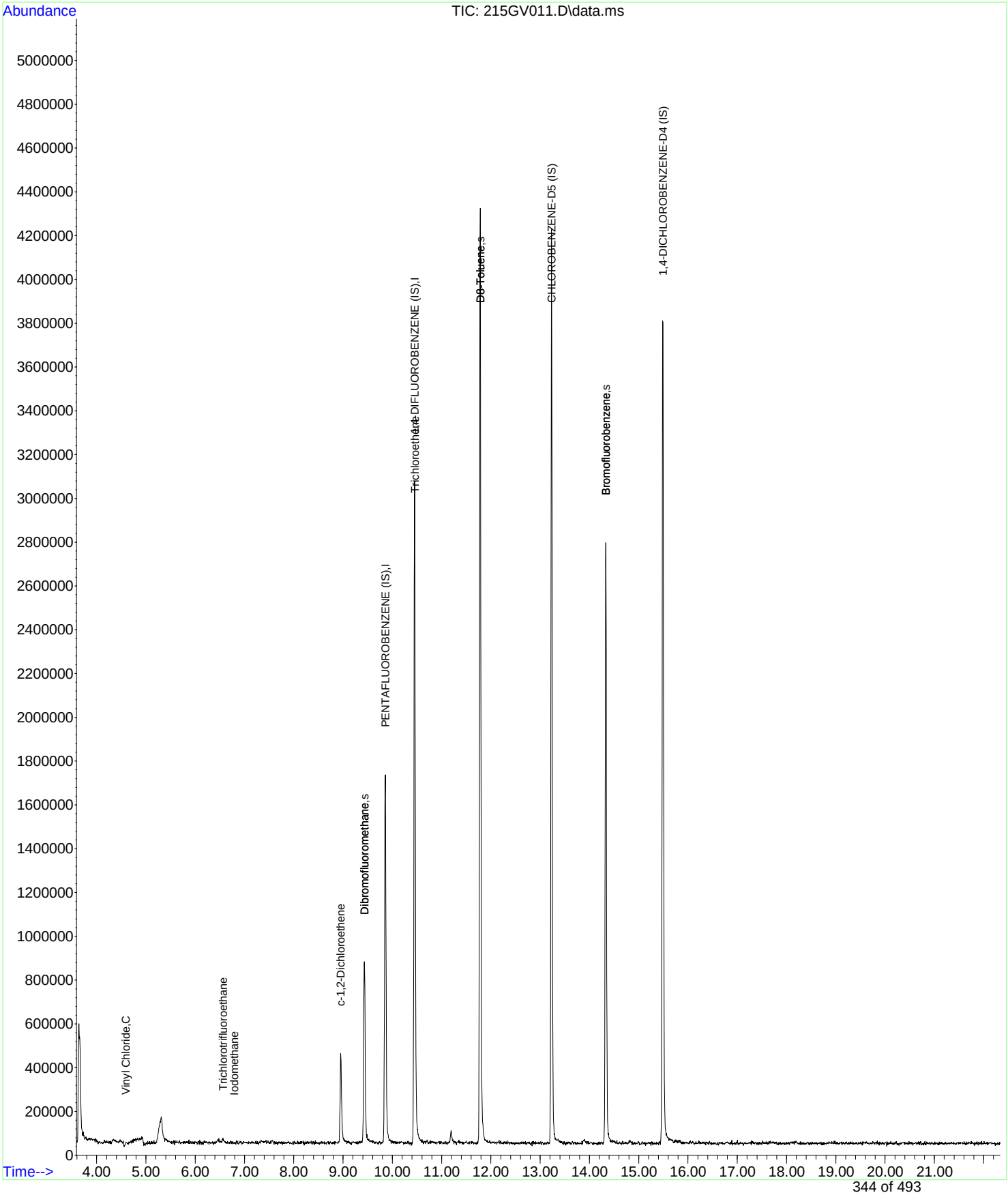
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3006406	51.83 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1264126	49.73 ug/L #	76
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV011.D
Acq On : 27 Jul 2021 12:22 pm
Operator : kkw
Sample : AE05878-20
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 27 13:41:12 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV012.D
Acq On : 27 Jul 2021 12:50 pm
Operator : kkw
Sample : AE05878-21
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 28 07:19:01 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	981758	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2345798	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1476676	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1102173	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	602404	51.28 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.56%		
52) D8-Toluene	11.784	98	2986447	51.62 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.24%		
73) Bromofluorobenzene	14.334	95	1251482	49.34 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 98.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D.	
4) Vinyl Chloride	4.592	62	28425	2.18 ug/L #	85
5) Bromomethane	0.000		0	N.D.	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	6.560	151	21542	3.40 ug/L #	75
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	6.795	142	6976	0.80 ug/L #	43
13) Carbon Disulfide	6.631	76	5324	N.D.	
14) 3-chloropropene	0.000		0	N.D.	
15) Acetone	7.365	43	55353	13.28 ug/L #	38
16) Methylene Chloride	0.000		0	N.D.	
17) Methyl Acetate	0.000		0	N.D. d	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D.	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	0.000		0	N.D. d	
26) c-1,2-Dichloroethene	8.952	96	455420	35.41 ug/L	97
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	606355	51.62 ug/L #	88
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D.	
40) Carbon Tetrachloride	0.000		0	N.D.	
41) Benzene	9.886	78	5238	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.456	130	175553	15.27 ug/L #	76
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV012.D
Acq On : 27 Jul 2021 12:50 pm
Operator : kkw
Sample : AE05878-21
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 28 07:19:01 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

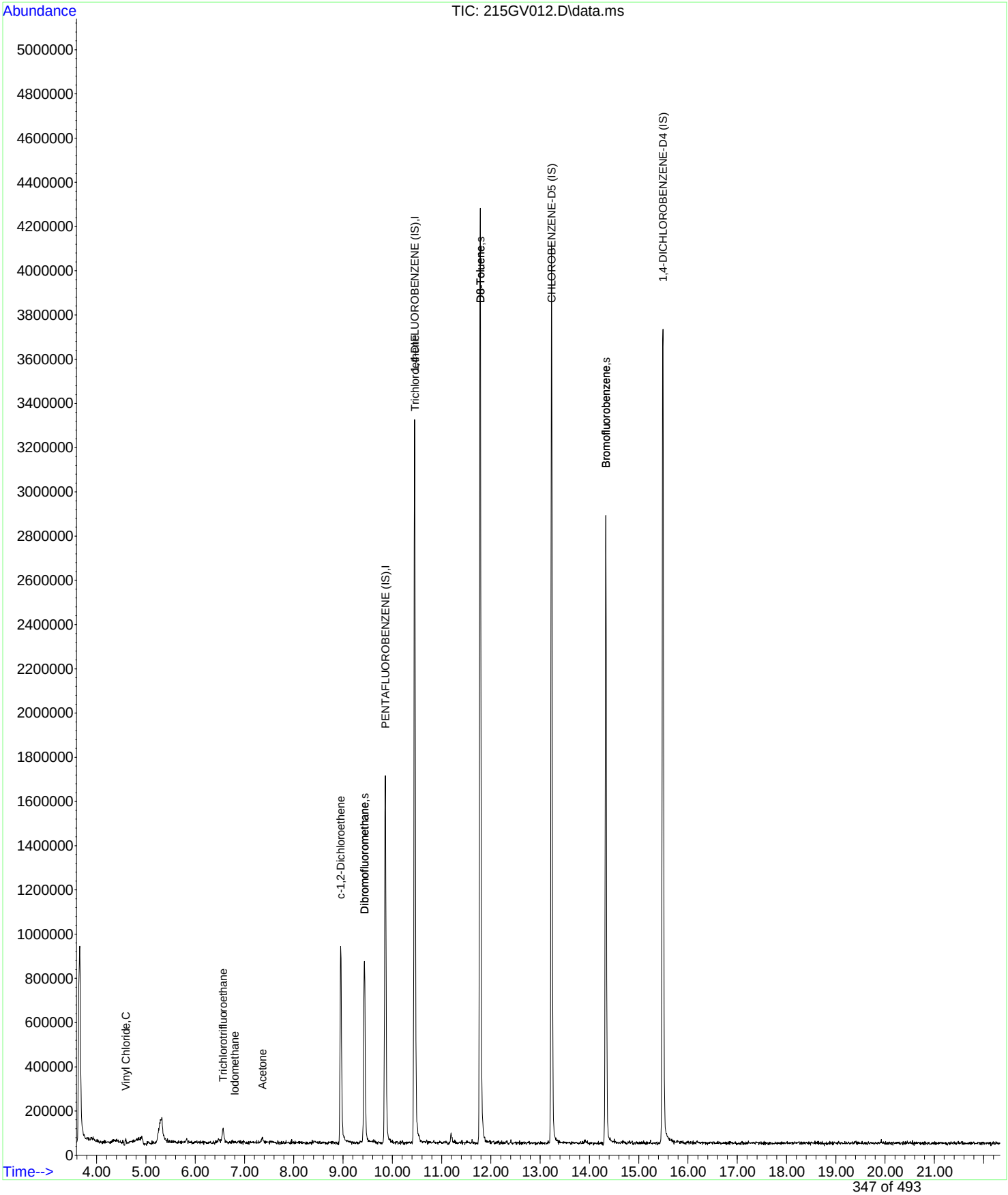
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2980255	51.52	ug/L	94
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1252165	49.36	ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV012.D
Acq On : 27 Jul 2021 12:50 pm
Operator : kkw
Sample : AE05878-21
Misc :
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 28 07:19:01 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV013.D
Acq On : 27 Jul 2021 1:19 pm
Operator : kkw
Sample : AE05878-22@10X
Misc : 10
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 28 07:19:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	950478	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2306620	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1478763	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1134717	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	613783	53.97	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 107.94%				
52) D8-Toluene	11.784	98	3032099	53.30	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 106.60%				
73) Bromofluorobenzene	14.334	95	1275832	50.23	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.46%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.592	62	27822	2.20	ug/L		94
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	707059	56.79	ug/L		98
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	614311	54.01	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	0.000		0	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.456	130	346663	30.67	ug/L		94
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV013.D
Acq On : 27 Jul 2021 1:19 pm
Operator : kkw
Sample : AE05878-22@10X
Misc : 10
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 28 07:19:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

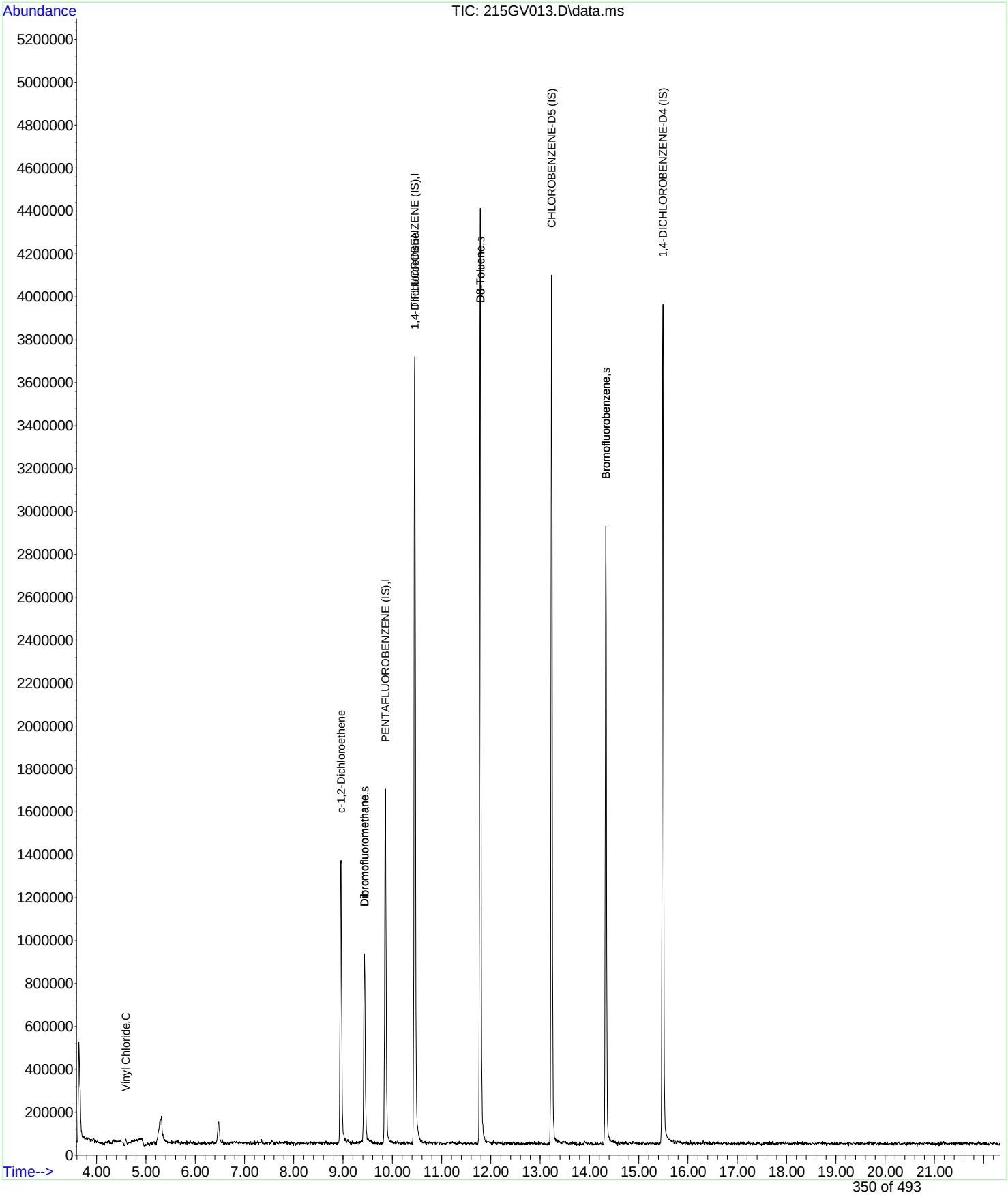
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	3026385	53.20	ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1275832	50.23	ug/L #	76
75) n-Propylbenzene	0.000		0	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV013.D
Acq On : 27 Jul 2021 1:19 pm
Operator : kkw
Sample : AE05878-22@10X
Misc : 10
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 28 07:19:04 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV014.D
Acq On : 27 Jul 2021 1:47 pm
Operator : kkw
Sample : AE05878-23@100X
Misc : 100
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 28 07:19:07 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.862	168	998529	50.00	ug/L	0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2331984	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1476470	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1135730	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.433	113	608971	50.97	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.94%			
52) D8-Toluene	11.784	98	2974804	51.73	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.46%			
73) Bromofluorobenzene	14.334	95	1255678	49.51	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.02%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	4.586	62	31517	2.37	ug/L #	78
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	0.000		0	N.D.		
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D.		
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	7.553	96	4777	0.39	ug/L #	1
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.952	96	635838	48.61	ug/L	93
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.433	113	609573	51.02	ug/L #	90
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D. d		
41) Benzene	9.886	78	6869	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.462	130	427982	37.45	ug/L	98
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV014.D
Acq On : 27 Jul 2021 1:47 pm
Operator : kkw
Sample : AE05878-23@100X
Misc : 100
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 28 07:19:07 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

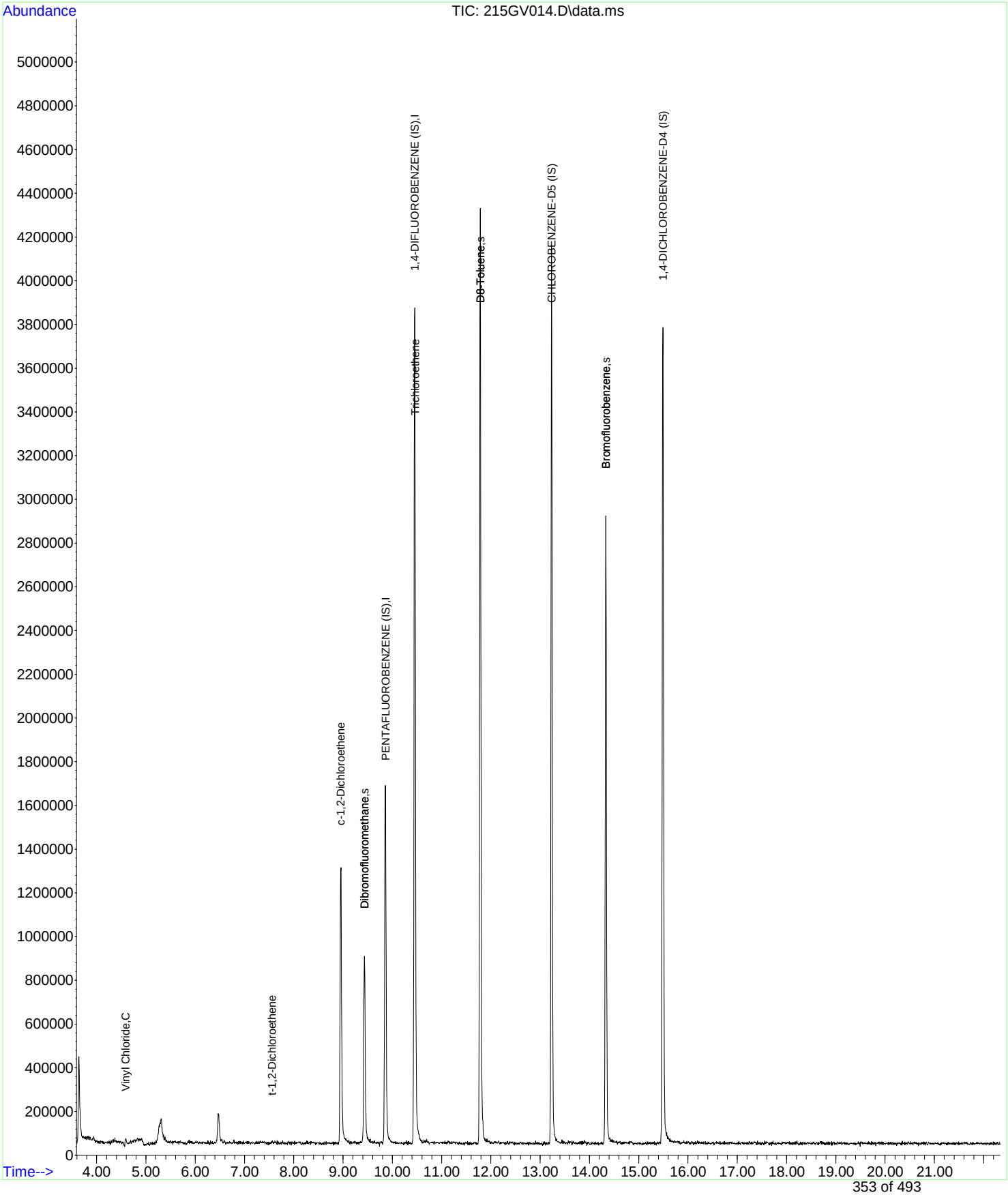
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2974804	51.73	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1256889	49.56	ug/L #	76
75) n-Propylbenzene	14.334	91	4971	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV014.D
Acq On : 27 Jul 2021 1:47 pm
Operator : kkw
Sample : AE05878-23@100X
Misc : 100
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 28 07:19:07 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV015.D
Acq On : 27 Jul 2021 2:15 pm
Operator : kkw
Sample : AE05878-24@200X
Misc : 200
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 28 07:19:10 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	961116	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2253705	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1448868	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1129347	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	594545	51.70	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.40%				
52) D8-Toluene	11.784	98	2972368	53.48	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 106.96%				
73) Bromofluorobenzene	14.334	95	1260952	50.66	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 101.32%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D. d			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.592	62	56987	4.46	ug/L	#	88
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	7.559	96	5362	0.46	ug/L	#	54
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.952	96	927936	73.70	ug/L		98
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	594545	51.70	ug/L	#	87
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.904	78	6558	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.456	130	608395	55.09	ug/L		98
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV015.D
Acq On : 27 Jul 2021 2:15 pm
Operator : kkw
Sample : AE05878-24@200X
Misc : 200
ALS Vial : 15 Sample Multiplier: 1

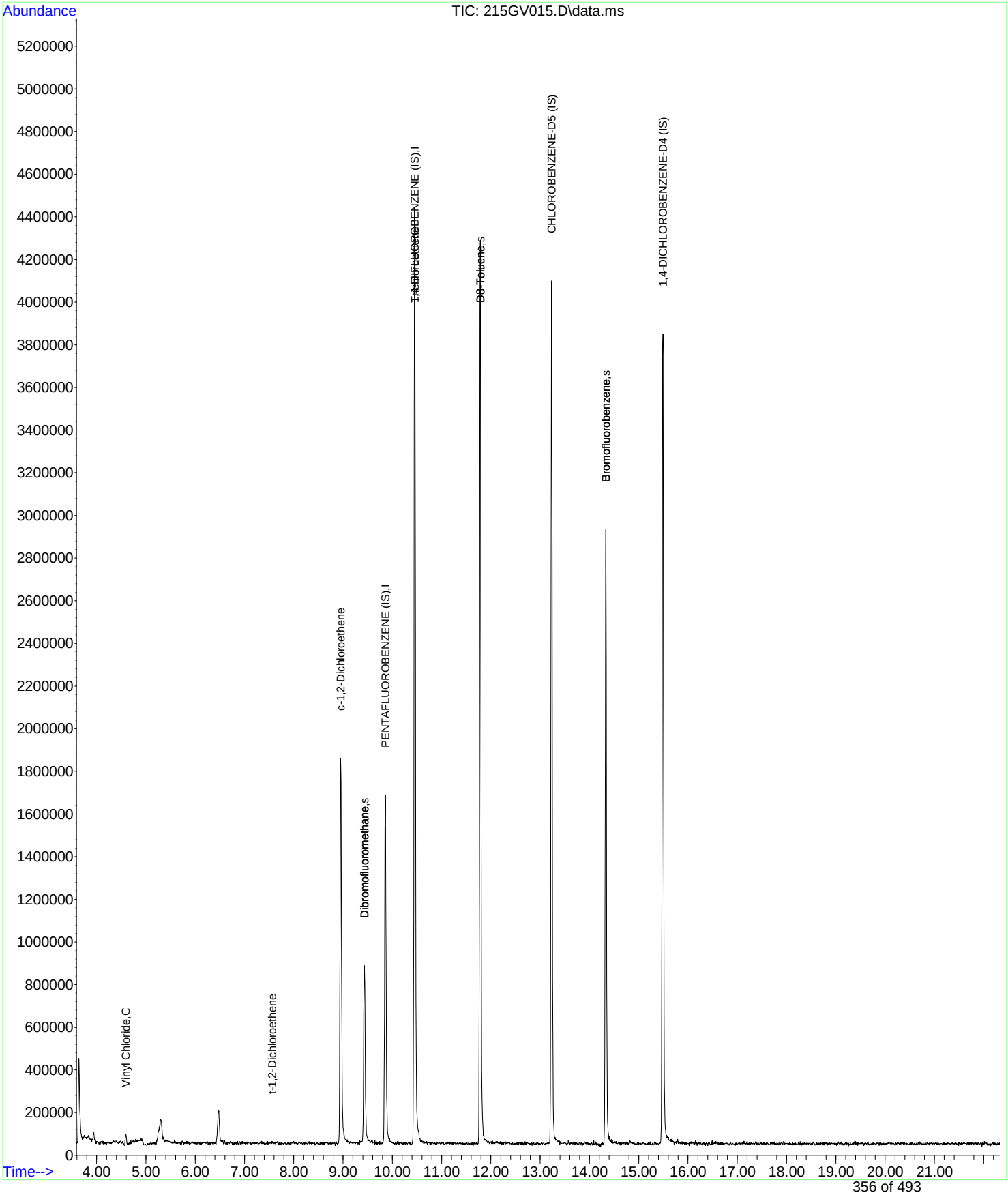
Quant Time: Jul 28 07:19:10 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2970968	53.46	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1260952	50.66	ug/L #	77
75) n-Propylbenzene	0.000		0	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV015.D
Acq On : 27 Jul 2021 2:15 pm
Operator : kkw
Sample : AE05878-24@200X
Misc : 200
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jul 28 07:19:10 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV016.D
Acq On : 27 Jul 2021 2:43 pm
Operator : kkw
Sample : AE05878-25
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 28 07:19:13 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.863	168	962990	50.00	ug/L		0.01
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2341975	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1442939	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1103190	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	593968	51.55	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.10%				
52) D8-Toluene	11.784	98	2967735	51.38	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.76%				
73) Bromofluorobenzene	14.334	95	1248501	50.37	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.74%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	4.598	62	15083	1.18	ug/L	#	77
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	6.561	151	9598	1.55	ug/L	#	90
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	6.637	76	5365	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.	d		
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.	d		
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	229608	18.20	ug/L		94
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	594731	51.61	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.886	78	6073	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.462	130	41490	3.62	ug/L	#	1
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV016.D
Acq On : 27 Jul 2021 2:43 pm
Operator : kkw
Sample : AE05878-25
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 28 07:19:13 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

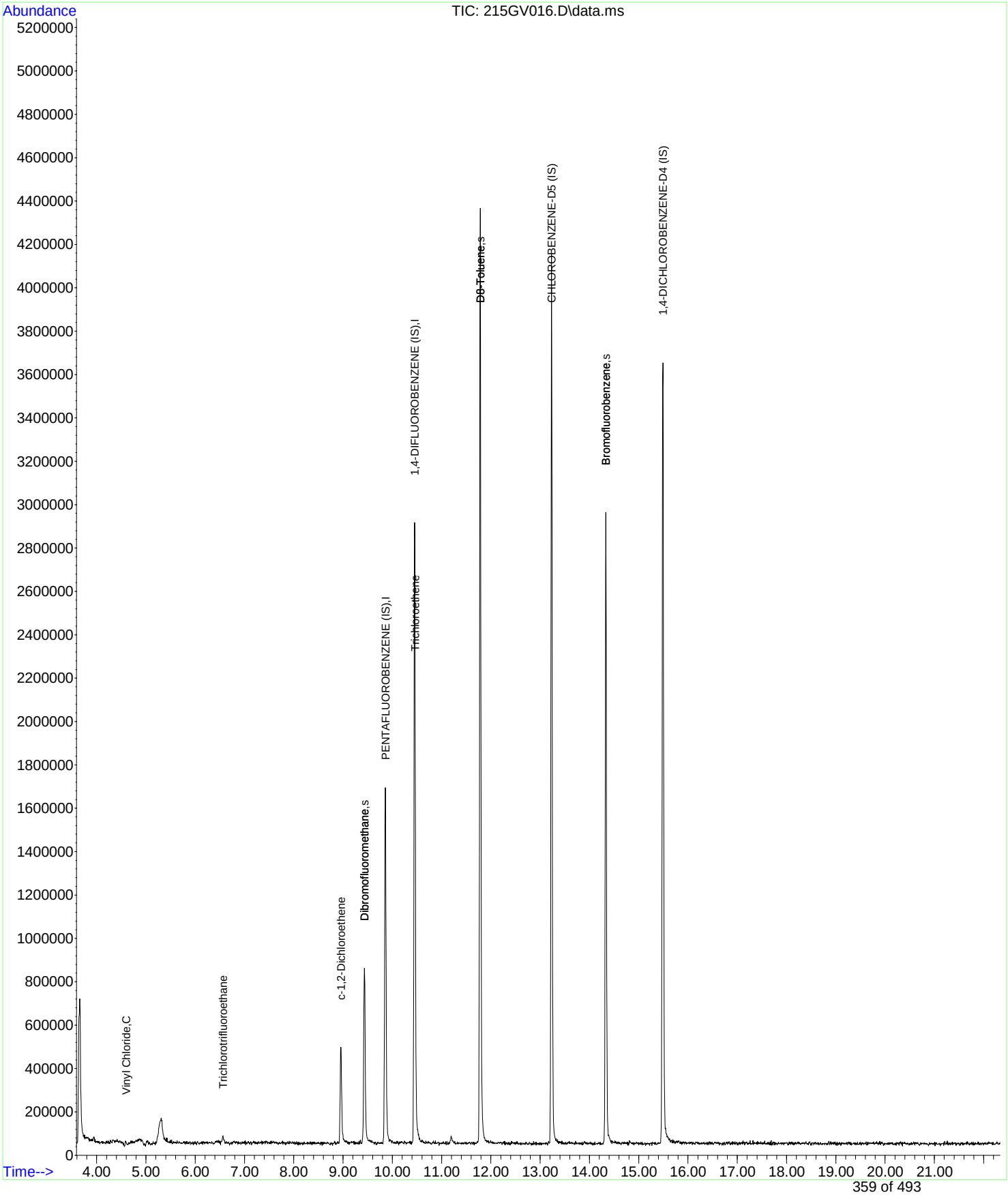
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2965701	51.35 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1248501	50.37 ug/L #	78
75) n-Propylbenzene	0.000		0	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV016.D
Acq On : 27 Jul 2021 2:43 pm
Operator : kkw
Sample : AE05878-25
Misc :
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jul 28 07:19:13 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV017.D
Acq On : 27 Jul 2021 3:11 pm
Operator : kkw
Sample : AE05878-26
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 28 07:19:16 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) PENTAFLUOROBENZENE (IS)	9.857	168	977353	50.00 ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2348600	50.00 ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1465304	50.00 ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1112194	50.00 ug/L	0.00
System Monitoring Compounds					
31) Dibromofluoromethane	9.434	113	601728	51.45 ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.90%		
52) D8-Toluene	11.784	98	2993130	51.68 ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.36%		
73) Bromofluorobenzene	14.334	95	1228012	48.79 ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.58%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	
3) Chloromethane	0.000		0	N.D.	
4) Vinyl Chloride	0.000		0	N.D.	
5) Bromomethane	0.000		0	N.D.	
6) Chloroethane	0.000		0	N.D.	
7) Trichlorofluoromethane	0.000		0	N.D.	
8) Diethyl ether	0.000		0	N.D.	
9) 1,1-Dichloroethene	0.000		0	N.D.	
10) Trichlorotrifluoroethane	0.000		0	N.D.	
11) Acrolein	0.000		0	N.D.	
12) Iodomethane	0.000		0	N.D. d	
13) Carbon Disulfide	0.000		0	N.D.	
14) 3-chloropropene	0.000		0	N.D.	
15) Acetone	0.000		0	N.D.	
16) Methylene Chloride	0.000		0	N.D.	
17) Methyl Acetate	0.000		0	N.D.	
18) t-1,2-Dichloroethene	0.000		0	N.D.	
19) Methyl tert-butyl ether	0.000		0	N.D.	
20) Acetonitrile	0.000		0	N.D.	
21) Isopropyl ether	0.000		0	N.D.	
22) Chloroprene	0.000		0	N.D.	
23) 1,1-Dichloroethane	0.000		0	N.D.	
24) Acrylonitrile	0.000		0	N.D.	
25) Vinyl Acetate	0.000		0	N.D.	
26) c-1,2-Dichloroethene	0.000		0	N.D.	
27) 2,2-Dichloropropane	0.000		0	N.D.	
28) Bromochloromethane	0.000		0	N.D.	
29) Cyclohexane	0.000		0	N.D.	
30) Chloroform	0.000		0	N.D.	
32) Dibromofluoromethane	9.434	113	602141	51.49 ug/L #	89
33) 2-Butanone	0.000		0	N.D.	
34) 1,1,1-Trichloroethane	0.000		0	N.D.	
35) 1,1-Dichloropropene	0.000		0	N.D.	
36) Propionitrile	0.000		0	N.D.	
37) Methacrylonitrile	0.000		0	N.D.	
38) Isobutyl Alcohol	0.000		0	N.D.	
40) Carbon Tetrachloride	0.000		0	N.D.	
41) Benzene	9.898	78	5105	N.D.	
42) 1,2-Dichloroethane	0.000		0	N.D.	
43) Trichloroethene	10.456	130	4540	0.39 ug/L #	1
44) Methyl cyclohexane	0.000		0	N.D. d	
45) Dibromomethane	0.000		0	N.D.	
46) 1,2-Dichloropropane	0.000		0	N.D.	
47) Bromodichloromethane	0.000		0	N.D.	
48) Methyl Methacrylate	0.000		0	N.D.	
49) 1,4-Dioxane	0.000		0	N.D.	
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	
51) C-1,3-Dichloropropene	0.000		0	N.D.	

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV017.D
Acq On : 27 Jul 2021 3:11 pm
Operator : kkw
Sample : AE05878-26
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 28 07:19:16 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

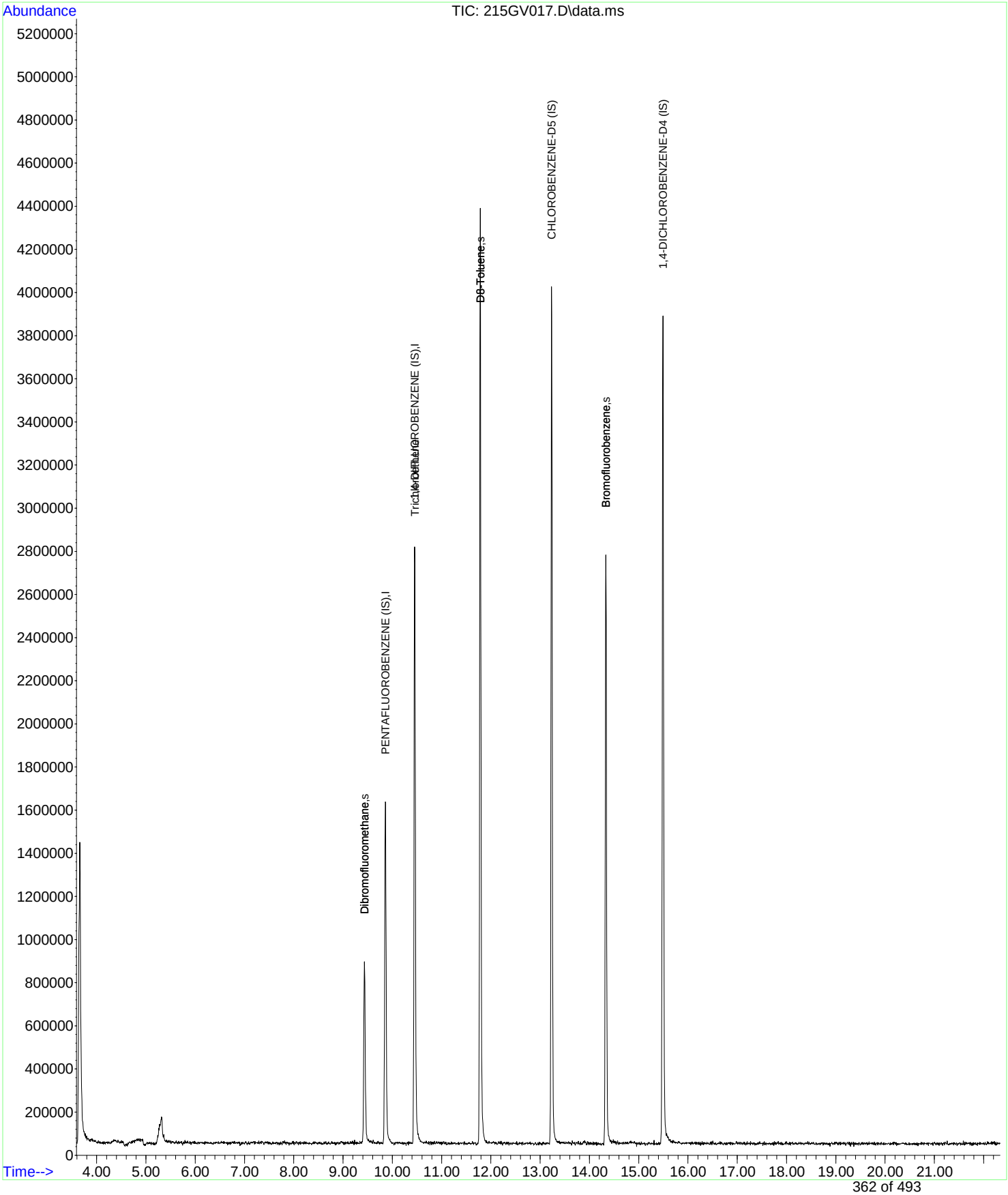
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2992328	51.66	ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1228012	48.79	ug/L #	78
75) n-Propylbenzene	14.334	91	4532	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV017.D
Acq On : 27 Jul 2021 3:11 pm
Operator : kkw
Sample : AE05878-26
Misc :
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jul 28 07:19:16 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV018.D
Acq On : 27 Jul 2021 3:39 pm
Operator : kkw
Sample : AE05878-27@10X
Misc : 10
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 28 07:19:19 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	968934	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2282951	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1462550	50.00	ug/L	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1111294	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.434	113	601487	51.88	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.76%			
52) D8-Toluene	11.784	98	2967919	52.72	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.44%			
73) Bromofluorobenzene	14.334	95	1223871	48.71	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.42%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D.		
4) Vinyl Chloride	0.000		0	N.D.		
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	0.000		0	N.D.		
10) Trichlorotrifluoroethane	6.566	151	296809	47.53	ug/L	99
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	0.000		0	N.D. d		
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.958	96	62784	4.95	ug/L	98
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.434	113	601487	51.88	ug/L #	89
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.904	78	6001	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.456	130	148755	13.30	ug/L #	78
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV018.D
Acq On : 27 Jul 2021 3:39 pm
Operator : kkw
Sample : AE05878-27@10X
Misc : 10
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 28 07:19:19 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

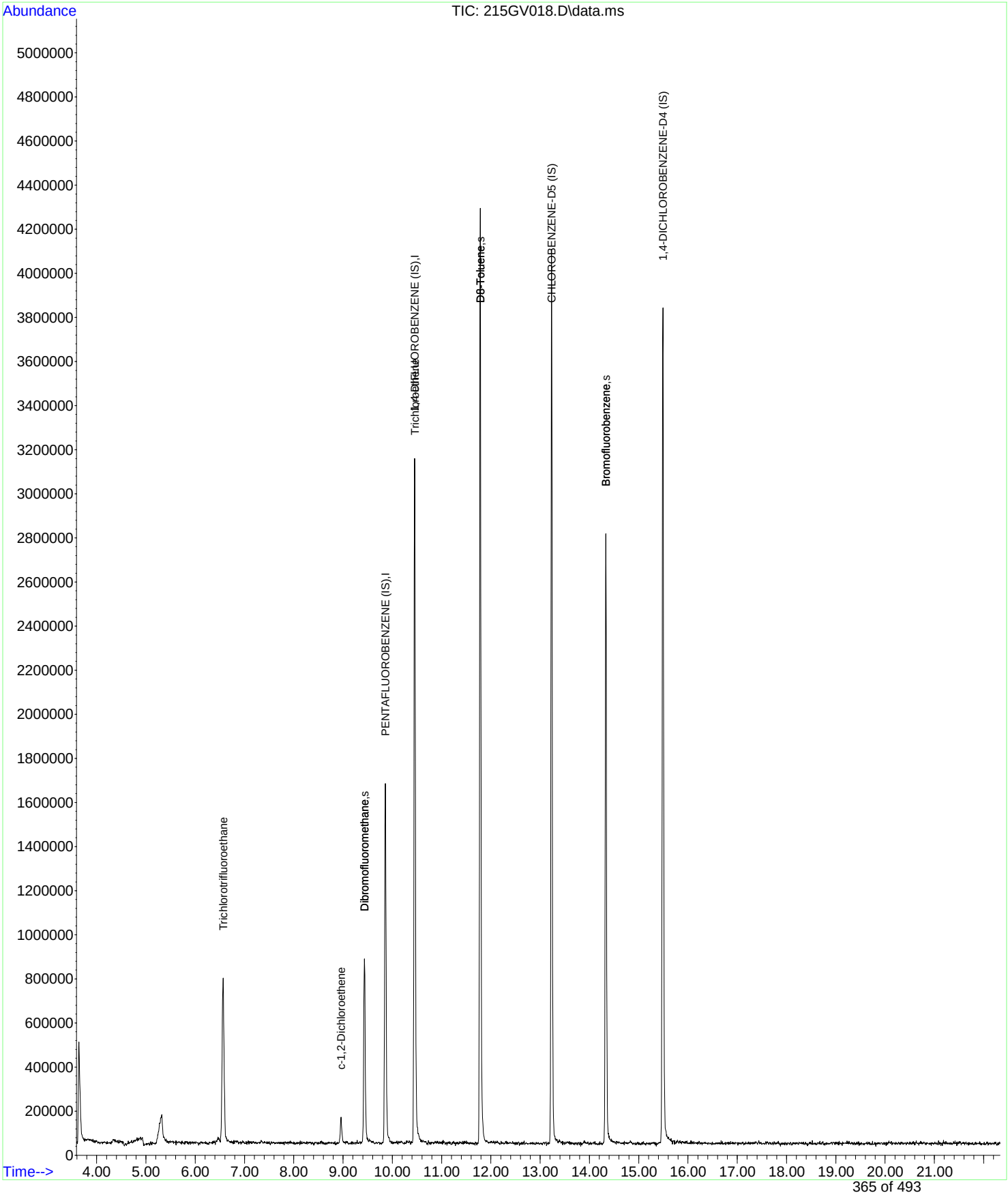
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2965598	52.68	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1225117	48.76	ug/L #	77
75) n-Propylbenzene	14.334	91	4481	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV018.D
Acq On : 27 Jul 2021 3:39 pm
Operator : kkw
Sample : AE05878-27@10X
Misc : 10
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jul 28 07:19:19 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV019.D
Acq On : 27 Jul 2021 4:07 pm
Operator : kkw
Sample : AE05878-28
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 28 07:19:22 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.856	168	954047	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2316991	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1444997	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1086029	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.433	113	599669	52.53	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.06%				
52) D8-Toluene	11.784	98	2960497	51.81	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.62%				
73) Bromofluorobenzene	14.334	95	1250965	50.40	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.80%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D.			
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D. d			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D. d			
13) Carbon Disulfide	0.000		0	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	7.547	96	5451	0.47	ug/L	#	86
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.958	96	44685	3.58	ug/L		90
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.433	113	600361	52.59	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.898	78	5676	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.462	130	135909	11.97	ug/L	#	73
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV019.D
Acq On : 27 Jul 2021 4:07 pm
Operator : kkw
Sample : AE05878-28
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 28 07:19:22 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

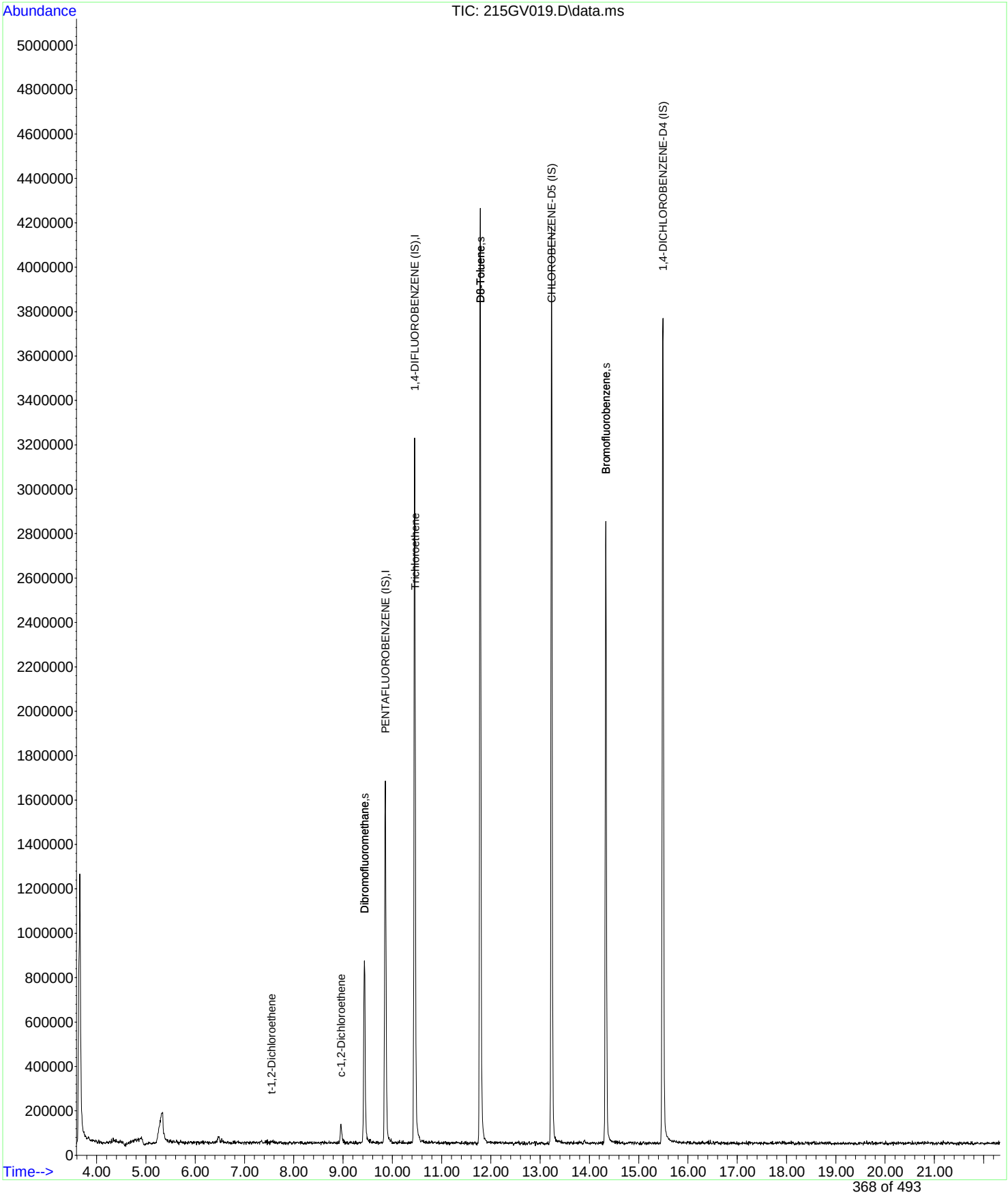
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	2960497	51.81 ug/L	97
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1251827	50.43 ug/L #	75
75) n-Propylbenzene	14.340	91	4833	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV019.D
Acq On : 27 Jul 2021 4:07 pm
Operator : kkw
Sample : AE05878-28
Misc :
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jul 28 07:19:22 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV024.D
Acq On : 27 Jul 2021 6:28 pm
Operator : kkw
Sample : 1G27016-MS1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 28 07:19:37 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	980087	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2366093	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1510186	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1158475	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	631912	53.88	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 107.76%				
52) D8-Toluene	11.784	98	3002675	51.46	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.92%				
73) Bromofluorobenzene	14.334	95	1333741	51.41	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 102.82%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.993	85	299047	29.66	ug/L		97
3) Chloromethane	4.422	50	365035	24.37	ug/L		100
4) Vinyl Chloride	4.592	62	452262	34.70	ug/L	#	76
5) Bromomethane	5.239	94	82022	24.04	ug/L		92
6) Chloroethane	5.456	64	176070	25.77	ug/L		96
7) Trichlorofluoromethane	5.714	101	346218	23.21	ug/L		98
8) Diethyl ether	6.179	59	199244	19.67	ug/L		99
9) 1,1-Dichloroethene	6.537	96	230772	22.15	ug/L		98
10) Trichlorotrifluoroethane	6.566	151	126055	19.96	ug/L		88
11) Acrolein	7.036	56	67307	25.58	ug/L		96
12) Iodomethane	6.790	142	168182	19.29	ug/L		96
13) Carbon Disulfide	6.631	76	766050	24.40	ug/L		100
14) 3-chloropropene	7.207	41	391918	21.73	ug/L		98
15) Acetone	7.407	43	182060	43.74	ug/L		97
16) Methylene Chloride	7.348	84	278827	20.87	ug/L		96
17) Methyl Acetate	7.530	43	192551	17.62	ug/L		97
18) t-1,2-Dichloroethene	7.554	96	265134	22.30	ug/L		97
19) Methyl tert-butyl ether	7.636	73	626124	20.78	ug/L		98
20) Acetonitrile	8.053	41	332099	120.05	ug/L	#	90
21) Isopropyl ether	8.053	45	785423	20.77	ug/L		99
22) Chloroprene	8.282	88	246527	21.70	ug/L		95
23) 1,1-Dichloroethane	8.323	63	502689	22.24	ug/L		99
24) Acrylonitrile	8.400	53	121542	23.34	ug/L	#	98
25) Vinyl Acetate	8.552	43	460334	17.16	ug/L		100
26) c-1,2-Dichloroethene	8.952	96	292137	22.75	ug/L		96
27) 2,2-Dichloropropane	9.081	77	340875	20.99	ug/L		99
28) Bromochloromethane	9.187	128	106385	22.43	ug/L		99
29) Cyclohexane	9.199	56	509800	22.64	ug/L		99
30) Chloroform	9.228	83	479311	22.21	ug/L		99
32) Dibromofluoromethane	9.434	113	631912	53.88	ug/L	#	90
33) 2-Butanone	9.557	72	106798	55.36	ug/L		80
34) 1,1,1-Trichloroethane	9.492	97	377908	23.61	ug/L		99
35) 1,1-Dichloropropene	9.610	75	408695	22.96	ug/L		98
36) Propionitrile	9.910	54	59035	25.40	ug/L	#	1
37) Methacrylonitrile	9.916	41	274109	30.11	ug/L	#	83
38) Isobutyl Alcohol	9.916	43	229573	206.41	ug/L	#	50
40) Carbon Tetrachloride	9.422	117	325713	24.08	ug/L	#	77
41) Benzene	9.886	78	1208205	21.55	ug/L		97
42) 1,2-Dichloroethane	10.098	62	332437	20.00	ug/L		97
43) Trichloroethene	10.462	130	246299	21.24	ug/L		91
44) Methyl cyclohexane	10.462	83	521338	20.63	ug/L		98
45) Dibromomethane	10.908	93	157155	19.06	ug/L		99
46) 1,2-Dichloropropane	10.991	63	307153	19.25	ug/L		97
47) Bromodichloromethane	11.020	83	326147	20.83	ug/L		99
48) Methyl Methacrylate	11.079	69	213959	16.95	ug/L		96
49) 1,4-Dioxane	11.202	88	60028	511.58	ug/L		90
50) 2-Chloroethyl vinyl ether	11.614	63	4445	0.50	ug/L	#	51
51) C-1,3-Dichloropropene	11.614	75	436808	18.58	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV024.D
Acq On : 27 Jul 2021 6:28 pm
Operator : kkw
Sample : 1G27016-MS1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 28 07:19:37 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

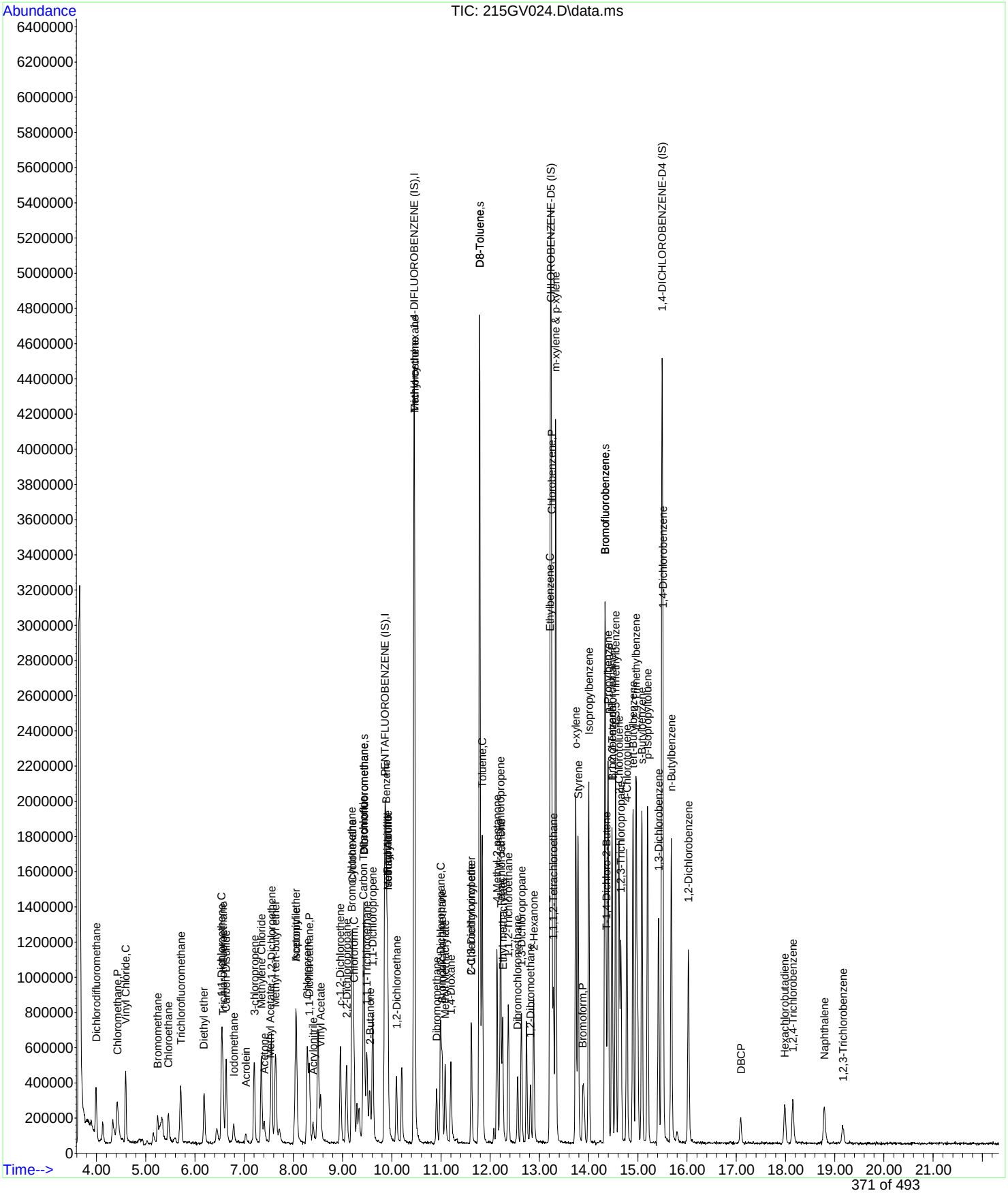
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3002675	51.46	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	118201	54.37	ug/L		97
56) Toluene	11.837	92	792970	21.47	ug/L		99
57) T-1,3-Dichloropropene	12.207	75	407128	21.78	ug/L		98
58) Tetrachloroethene	12.219	164	169533	20.06	ug/L		95
59) Ethyl methacrylate	12.254	69	403130	18.59	ug/L		97
60) 1,1,2-Trichloroethane	12.366	97	261885	20.61	ug/L		96
61) Dibromochloromethane	12.554	129	214209	18.93	ug/L		95
62) 1,3-Dichloropropane	12.636	76	466217	20.03	ug/L		99
63) 1,2-Dibromoethane	12.818	107	245923	19.32	ug/L	#	94
64) 2-Hexanone	12.883	43	555470	48.40	ug/L		98
65) Ethylbenzene	13.212	106	448465	21.52	ug/L		98
66) Chlorobenzene	13.247	112	790003	21.53	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	220672	20.84	ug/L		100
68) m-xylene & p-xylene	13.329	106	1137240	42.54	ug/L		100
69) o-xylene	13.741	106	575268	21.81	ug/L		100
70) Styrene	13.788	104	928740	19.88	ug/L		98
71) Bromoform	13.876	173	108556	16.82	ug/L		93
72) Isopropylbenzene	14.005	105	1517663	21.07	ug/L		98
74) Bromofluorobenzene	14.334	95	1333741	51.41	ug/L	#	75
75) n-Propylbenzene	14.393	91	1939655	20.45	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.475	83	446361	20.53	ug/L		99
77) 1,2,3-Trichloropropane	14.651	61	91046	18.10	ug/L		93
78) T-1,4-Dichloro-2-Butene	14.357	53	126468	19.87	ug/L	#	68
80) Bromobenzene	14.475	156	259452	20.68	ug/L		94
81) 1,2,4-Trimethylbenzene	14.963	105	1332699	21.68	ug/L		98
82) 2-Chlorotoluene	14.616	91	1149773	22.42	ug/L		99
83) 4-Chlorotoluene	14.775	91	1165830	20.72	ug/L		98
84) tert-Butylbenzene	14.898	119	1036136	21.47	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	1286067	21.04	ug/L		99
86) p-Isopropyltoluene	15.198	119	1287964	21.81	ug/L		99
87) s-Butylbenzene	15.080	105	1619182	22.06	ug/L		98
88) 1,3-Dichlorobenzene	15.421	146	566206	21.57	ug/L		100
89) 1,4-Dichlorobenzene	15.509	146	578262	21.26	ug/L	#	83
90) n-Butylbenzene	15.679	91	1266405	20.78	ug/L		100
91) 1,2-Dichlorobenzene	16.026	146	517616	20.44	ug/L		99
92) DBCP	17.095	157	47100	22.03	ug/L		88
93) Hexachlorobutadiene	17.983	225	54475	19.21	ug/L	#	95
94) 1,2,4-Trichlorobenzene	18.147	180	98451	20.17	ug/L		97
95) Naphthalene	18.788	128	285433	22.40	ug/L		99
96) 1,2,3-Trichlorobenzene	19.170	180	47190	23.07	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV024.D
Acq On : 27 Jul 2021 6:28 pm
Operator : kkw
Sample : 1G27016-MS1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 28 07:19:37 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV025.D
Acq On : 27 Jul 2021 6:56 pm
Operator : kkw
Sample : 1G27016-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 28 07:19:40 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1025902	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.456	114	2409457	50.00	ug/L		0.01
55) CHLOROBENZENE-D5 (IS)	13.235	82	1551003	50.00	ug/L		0.01
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1153393	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	640415	52.17	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.34%				
52) D8-Toluene	11.784	98	3086530	51.94	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 103.88%				
73) Bromofluorobenzene	14.334	95	1364494	51.21	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 102.42%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	299211	28.35	ug/L		99
3) Chloromethane	4.428	50	364818	23.26	ug/L		98
4) Vinyl Chloride	4.592	62	459907	33.71	ug/L	#	71
5) Bromomethane	5.238	94	77217	21.76	ug/L	#	96
6) Chloroethane	5.456	64	162571	22.16	ug/L		97
7) Trichlorofluoromethane	5.708	101	352553	22.58	ug/L		100
8) Diethyl ether	6.190	59	216644	20.43	ug/L		95
9) 1,1-Dichloroethene	6.537	96	234977	21.55	ug/L		98
10) Trichlorotrifluoroethane	6.566	151	135280	20.46	ug/L		99
11) Acrolein	7.036	56	74467	27.04	ug/L		91
12) Iodomethane	6.784	142	189751	20.78	ug/L		98
13) Carbon Disulfide	6.631	76	766119	23.30	ug/L		99
14) 3-chloropropene	7.207	41	419228	22.22	ug/L		96
15) Acetone	7.407	43	194340	44.61	ug/L		97
16) Methylene Chloride	7.348	84	272398	19.48	ug/L		93
17) Methyl Acetate	7.530	43	210310	18.38	ug/L		98
18) t-1,2-Dichloroethene	7.559	96	270117	21.71	ug/L		99
19) Methyl tert-butyl ether	7.636	73	626737	19.87	ug/L		96
20) Acetonitrile	8.041	41	357499	123.46	ug/L	#	91
21) Isopropyl ether	8.059	45	812817	20.53	ug/L		98
22) Chloroprene	8.282	88	232659	19.57	ug/L		93
23) 1,1-Dichloroethane	8.323	63	519417	21.96	ug/L		99
24) Acrylonitrile	8.399	53	137961	25.31	ug/L		92
25) Vinyl Acetate	8.552	43	471708	16.80	ug/L		99
26) c-1,2-Dichloroethene	8.958	96	290891	21.65	ug/L		98
27) 2,2-Dichloropropane	9.081	77	329199	19.37	ug/L		98
28) Bromochloromethane	9.193	128	106950	21.55	ug/L		100
29) Cyclohexane	9.193	56	516565	21.91	ug/L		99
30) Chloroform	9.228	83	485841	21.51	ug/L		98
32) Dibromofluoromethane	9.434	113	640415	52.17	ug/L	#	90
33) 2-Butanone	9.551	72	113369	56.14	ug/L		81
34) 1,1,1-Trichloroethane	9.492	97	373245	22.28	ug/L		98
35) 1,1-Dichloropropene	9.610	75	386143	20.73	ug/L		100
36) Propionitrile	9.910	54	62932	25.87	ug/L	#	1
37) Methacrylonitrile	9.915	41	293058	30.75	ug/L	#	79
38) Isobutyl Alcohol	9.910	43	238003	204.44	ug/L	#	52
40) Carbon Tetrachloride	9.422	117	279854	20.32	ug/L		98
41) Benzene	9.886	78	1223482	21.43	ug/L		99
42) 1,2-Dichloroethane	10.098	62	325430	19.22	ug/L		99
43) Trichloroethene	10.456	130	237586	20.12	ug/L	#	83
44) Methyl cyclohexane	10.456	83	543556	21.12	ug/L		97
45) Dibromomethane	10.908	93	157686	18.78	ug/L		98
46) 1,2-Dichloropropane	10.991	63	330144	20.32	ug/L		99
47) Bromodichloromethane	11.020	83	327464	20.54	ug/L		97
48) Methyl Methacrylate	11.085	69	207776	16.17	ug/L		95
49) 1,4-Dioxane	11.214	88	68969	569.63	ug/L		100
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	11.613	75	441889	18.46	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV025.D
Acq On : 27 Jul 2021 6:56 pm
Operator : kkw
Sample : 1G27016-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 28 07:19:40 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

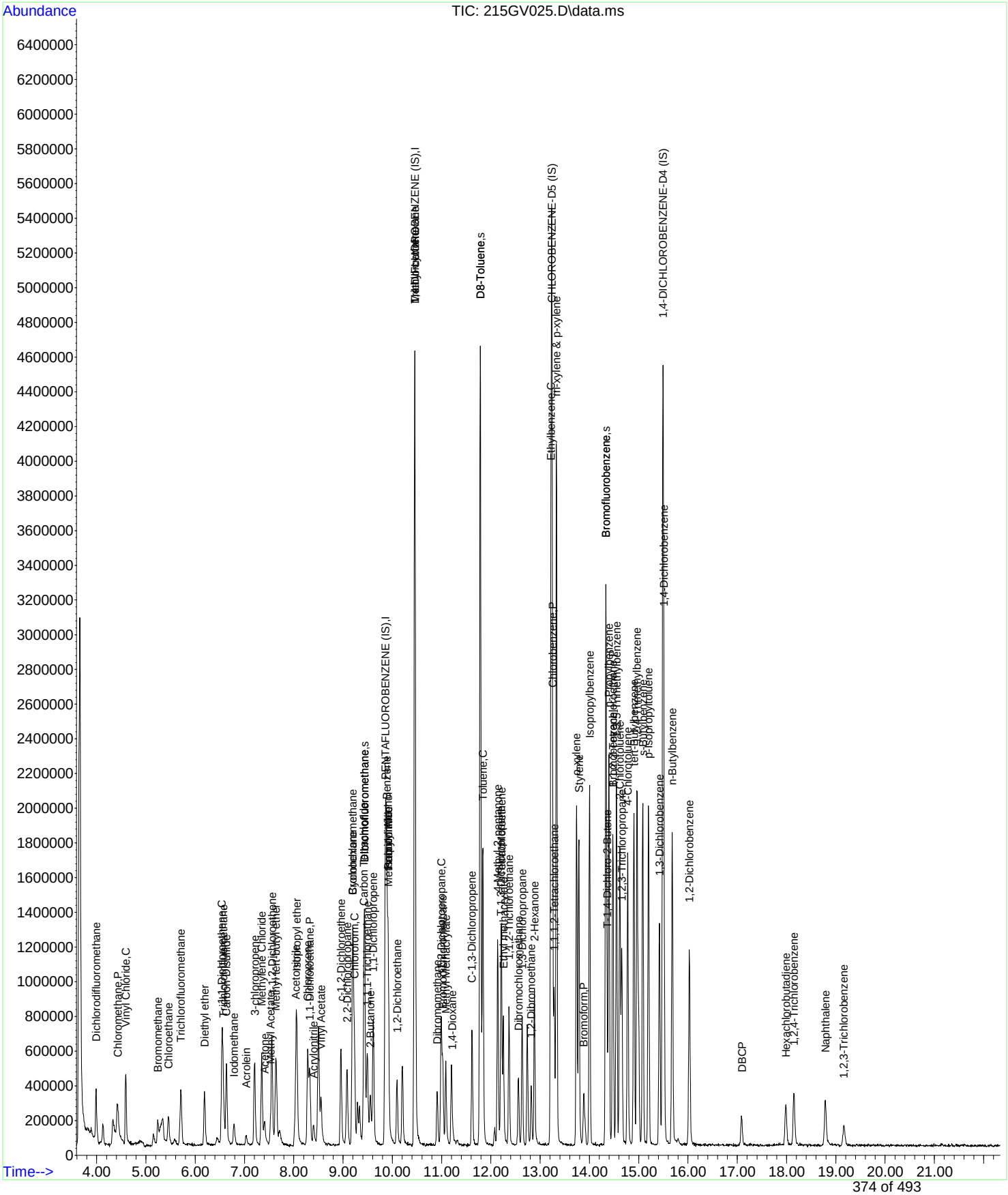
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3086530	51.94	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	127550	57.61	ug/L		96
56) Toluene	11.837	92	782952	20.64	ug/L		98
57) T-1,3-Dichloropropene	12.201	75	405249	21.11	ug/L		99
58) Tetrachloroethene	12.213	164	174644	20.12	ug/L		95
59) Ethyl methacrylate	12.254	69	409123	18.37	ug/L		98
60) 1,1,2-Trichloroethane	12.366	97	270763	20.75	ug/L		97
61) Dibromochloromethane	12.559	129	211494	18.20	ug/L		97
62) 1,3-Dichloropropane	12.636	76	486847	20.36	ug/L		96
63) 1,2-Dibromoethane	12.818	107	245122	18.75	ug/L		96
64) 2-Hexanone	12.883	43	573607	48.67	ug/L		95
65) Ethylbenzene	13.217	106	454728	21.25	ug/L		97
66) Chlorobenzene	13.253	112	795384	21.11	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.288	131	222923	20.49	ug/L		99
68) m-xylene & p-xylene	13.329	106	1134084	41.30	ug/L		98
69) o-xylene	13.735	106	577248	21.31	ug/L		97
70) Styrene	13.787	104	950050	19.81	ug/L		99
71) Bromoform	13.881	173	110412	16.66	ug/L		100
72) Isopropylbenzene	14.005	105	1511370	20.42	ug/L		100
74) Bromofluorobenzene	14.334	95	1364494	51.21	ug/L	#	74
75) n-Propylbenzene	14.393	91	2005169	20.59	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.475	83	447761	20.06	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	97670	18.90	ug/L		95
78) T-1,4-Dichloro-2-Butene	14.357	53	142711	21.83	ug/L	#	80
80) Bromobenzene	14.475	156	263322	21.08	ug/L		97
81) 1,2,4-Trimethylbenzene	14.963	105	1333987	21.80	ug/L		97
82) 2-Chlorotoluene	14.616	91	1159473	22.71	ug/L		99
83) 4-Chlorotoluene	14.774	91	1170342	20.89	ug/L		100
84) tert-Butylbenzene	14.904	119	1057053	22.00	ug/L		99
85) 1,3,5-Trimethylbenzene	14.551	105	1300212	21.36	ug/L		98
86) p-Isopropyltoluene	15.198	119	1298721	22.09	ug/L		99
87) s-Butylbenzene	15.086	105	1652903	22.62	ug/L		98
88) 1,3-Dichlorobenzene	15.421	146	570646	21.84	ug/L		99
89) 1,4-Dichlorobenzene	15.509	146	568487	20.99	ug/L	#	84
90) n-Butylbenzene	15.679	91	1320484	21.76	ug/L		100
91) 1,2-Dichlorobenzene	16.026	146	536647	21.29	ug/L		100
92) DBCP	17.095	157	53529	24.74	ug/L		96
93) Hexachlorobutadiene	17.988	225	51844	18.36	ug/L		95
94) 1,2,4-Trichlorobenzene	18.147	180	129978	25.89	ug/L		93
95) Naphthalene	18.788	128	355776	26.89	ug/L		98
96) 1,2,3-Trichlorobenzene	19.158	180	53894	25.87	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072721\
Data File : 215GV025.D
Acq On : 27 Jul 2021 6:56 pm
Operator : kkw
Sample : 1G27016-MSD1
Misc :
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jul 28 07:19:40 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



ANALYSIS SEQUENCE

AA67540

Instrument: OVGCMS5

Calibration ID: 2106098

Printed: 7/28/2021 8:56:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA67540-CCV1	QC		1		A1G0800	A1D0593		
1G28012-BS1	QC		2			A1D0593		
AA67540-CRL1	QC		3		A1G0802	A1D0593		
1G28012-BLK1	QC		4			A1D0593		
AE05483-01	60D TCL SOM01.2 CLP-LIK	B	5			A1D0593		
AE05483-01	8260D Halo	B	6			A1D0593		
AE05483-02	60D TCL SOM01.2 CLP-LIK	D	7			A1D0593		
AE05483-03	60D TCL SOM01.2 CLP-LIK	A	8			A1D0593		
AE05483-04	60D TCL SOM01.2 CLP-LIK	A	9			A1D0593		
AE05483-05	60D TCL SOM01.2 CLP-LIK	A	10			A1D0593		
AE05483-06	60D TCL SOM01.2 CLP-LIK	D	11			A1D0593		
AE05483-07	60D TCL SOM01.2 CLP-LIK	D	12			A1D0593		
AE05878-23RE1	60D TCL SOM01.2 CLP-LIK	B	13			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr@50x overdilute Re-extract added 7/
AE05878-27RE1	60D TCL SOM01.2 CLP-LIK	B	14			A1D0593	Tetra Tech NUS, Inc. (TE015)	rr@5x overdilute Re-extract added 7/2
AE06241-11	8260D Halo	B	15			A1D0593		
AE06241-12	8260D Halo	B	16			A1D0593		
AE06241-13	8260D Halo	B	17			A1D0593		
AE06241-14	8260D Halo	B	18			A1D0593		
AE06241-15	8260D Halo	B	19			A1D0593		
AE06241-16	8260D Halo	B	20			A1D0593		
AE06241-17	8260D Halo	B	21			A1D0593		
AE06241-18	8260D Halo	B	22			A1D0593		
AE06241-19	8260D Halo	B	23			A1D0593		

Samples Loaded By — Date: 07/28/21

Data Processed By — Date: 07/29/21

ANALYSIS SEQUENCE

AA67540

Instrument: OVGCMS5

Calibration ID: 2106098

Printed: 7/28/2021 8:56:57AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AE06241-20	8260D Halo	B	24			A1D0593		
1G28012-MS1	QC		25			A1D0593		
1G28012-MSD1	QC		26			A1D0593		

Samples Loaded By — Date: 07/20/21

Data Processed By — Date: 07/29/21

PREPARATION BENCH SHEET

Printed: 7/28/2021 8:55:28AM

1G28012

ENCO Orlando

Analysis
8260D Halo [EPA 8260D]
8260D TCL SOM01.2 CLP-LIKE [EPA 8260D]

Surrogate Solution
___ A1B1158 8260 surr working (lower conc.)

Prepared using: EPA 5030B_MS

Spiking Solution
A1G0849 8260 2nd source Mega Mix
A1G0888 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number	Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
1G28012-BLK1		Blank		QC			5	5			5	
1G28012-BS1		LCS		QC			5	5	A1G0888 A1G0849	2 2	5	
1G28012-MS1		Matrix Spike [AE05483-01]		QC	≤2	N	5	5	A1G0888 A1G0849	2 2	5	
1G28012-MSD1		Matrix Spike Dup [AE05483-01]		QC	≤2	N	5	5	A1G0888 A1G0849	2 2	5	
AE05483-01	C	CRCA-MW0002-032.5-20210726 B[MS46		8260D Halo	≤2	N	5	5			5	Added for BatchQC in: 1G28012
AE05483-01	C	CRCA-MW0002-032.5-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05483-02	C	CRCA-MW0018-058.0-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05483-03	C	CRCA-MW0013-027.5-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05483-04	C	CRCA-MW0012-027.5-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05483-05	C	CRCA-MW0015-027.5-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05483-06	C	CRCA-MW0031-058.0-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05483-07	C	CRCA-MW0019-058.0-20210726 B[MS46	03-Aug-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	hist1x nc7/28/21 custom
AE05878-23RE1	C	HMPN-MW0032-042.5-20210729 B[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	rr@50x overdilute Re-extract added 7/28/2021 by KKW
AE05878-27RE1	C	HMPN-MW0002-035.0-20210729 B[MS45	29-Jul-21	8260D TCL SOM01.2 CLP-LIKE	≤2	N	5	5			5	rr@5x overdilute Re-extract added 7/28/2021 by KKW
AE06241-11		BE01903-11 (MW-18DR) B[MS15	04-Aug-21	8260D Halo	≤2	N	5	5			5	run1x high ketones nc7/28/21 only 2 vials received
AE06241-12		BE01903-12 (I-18D) B[MS15	04-Aug-21	8260D Halo	≤2	N	5	5			5	run1x high ketones nc7/28/21 only 2 vials received
AE06241-13		BE01903-13 (MW-19R) B[MS15	04-Aug-21	8260D Halo	≤2	N	5	5			5	run1x nc7/28/21 only 2 vials received

PREPARATION BENCH SHEET

Printed: 7/28/2021 8:55:28AM

1G28012

ENCO Orlando

Prepared using: EPA 5030B_MS

Surrogate Solution

__ A1B1158 8260 surr working (lower conc.)

Spiking Solution

A1G0849 8260 2nd source Mega Mix

A1G0888 8260 2nd source Gases/Acrolein virtual

Matrix: Water

Lab Number Code	Sample ID, Source and Sample Location	Due Date	Analysis	pH adj	Res Cl(1)	Initial (mL)	Final (mL)	Spike ID	ul Spike	ul Surr1	Comments
AE06241-14	BE01903-14 (MW-19DR) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received
AE06241-15	BE01903-15 (MW-20) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received
AE06241-16	BE01903-16 (MW-20D) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received
AE06241-17	BE01903-17 (MW-23R) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received
AE06241-18	BE01903-18 (MW-23D) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received
AE06241-19	BE01903-19 (MW-24) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received
AE06241-20	BE01903-20 (MW-24D) B[MS15	04-Aug-21	8260D Halo	<2	N	5	5			5	run1x nc7/28/21 only 2 vials received

(1) Before solvent extraction proceeds, verify that there is no residual chlorine above 0.5 mg/L. Any sample above this must be treated to remove excess chlorine before extraction, and this documented as a comment.

Instrument 5

EST Centurian autosampler manufacturer reccommends adding 5 uL of IS/SS.

Start Date 07/28/21

StopDate 07/28/21

Instrument ID GCMS-5

Standard ID#	Description	Manufacture Lot#
A0A1401	pH Test Papers (1.0 to 12.0)	231018
A1B0955	Residual Chlorine Strips (Potassium Iodide S	102916
A1G0592	P&T Anti-Foam working solution	N/A

07/29/21

Samples Prepared By Date

Samples Prepared By Date

Sequence Name: C:\msdchem\1\sequence\215GW.s
Comment:
Operator: kkw
Data Path: C:\msdchem\1\DATA\072821\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

	Line		Sample Name/Misc Info		
1)	Sample	1	215GW001	8260S	rinse
2)	Sample	2	215GW002	8260S	CCV1
3)	Sample	3	215GW003	8260S	CCV1
4)	Sample	4	215GW004	8260S	BS1
5)	Sample	5	215GW005	8260S	CRL1
6)	Sample	6	215GW006	8260S	BLK1
7)	Sample	6	215GW007	8260S	AE05483-01
8)	Sample	7	215GW008	8260S	AE05483-02
9)	Sample	8	215GW009	8260S	AE05483-03
10)	Sample	9	215GW010	8260S	AE05483-04
11)	Sample	10	215GW011	8260S	AE05483-05
12)	Sample	11	215GW012	8260S	AE05483-06
13)	Sample	12	215GW013	8260S	AE05483-07
14)	Sample	13	215GW014	8260S	AE05878-23RE1@50X
15)	Sample	14	215GW015	8260S	AE05878-27RE1@5X
16)	Sample	15	215GW016	8260S	AE06241-11
17)	Sample	16	215GW017	8260S	AE06241-12
18)	Sample	17	215GW018	8260S	AE06241-13
19)	Sample	18	215GW019	8260S	AE06241-14
20)	Sample	19	215GW020	8260S	AE06241-15
21)	Sample	20	215GW021	8260S	AE06241-16
22)	Sample	21	215GW022	8260S	AE06241-17
23)	Sample	22	215GW023	8260S	AE06241-18
24)	Sample	23	215GW024	8260S	AE06241-19
25)	Sample	24	215GW025	8260S	AE06241-20
26)	Sample	25	215GW026	8260S	1G28012-MS1
27)	Sample	25	215GW027	8260S	1G28012-MSD1

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW003.D
Acq On : 28 Jul 2021 8:24 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 28 08:53:20 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1146370	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2613862	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1696790	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1272980	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.433	113	711938	51.90	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 103.80%				
52) D8-Toluene	11.784	98	3401508	52.77	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 105.54%				
73) Bromofluorobenzene	14.334	95	1515075	51.98	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 103.96%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	291710	24.73	ug/L		99
3) Chloromethane	4.416	50	393664	22.47	ug/L		98
4) Vinyl Chloride	4.586	62	318335	20.88	ug/L	#	76
5) Bromomethane	5.238	94	132876	32.53	ug/L		93
6) Chloroethane	5.438	64	109487	12.51	ug/L		96
7) Trichlorofluoromethane	5.691	101	324347	18.59	ug/L		99
8) Diethyl ether	6.184	59	539882	45.57	ug/L		98
9) 1,1-Dichloroethene	6.537	96	496577	40.75	ug/L		98
10) Trichlorotrifluoroethane	6.560	151	299320	40.52	ug/L		98
11) Acrolein	7.019	56	1936777	629.30	ug/L		100
12) Iodomethane	6.784	142	2687828	253.23	ug/L		99
13) Carbon Disulfide	6.625	76	8758755	252.22	ug/L		99
14) 3-chloropropene	7.201	41	1059289	52.00	ug/L		99
15) Acetone	7.401	43	1155569	237.38	ug/L		100
16) Methylene Chloride	7.348	84	698583	44.71	ug/L		96
17) Methyl Acetate	7.524	43	656380	51.35	ug/L		97
18) t-1,2-Dichloroethene	7.553	96	653494	47.00	ug/L		99
19) Methyl tert-butyl ether	7.636	73	1794097	50.90	ug/L		97
20) Acetonitrile	8.017	41	1781857	550.71	ug/L		99
21) Isopropyl ether	8.053	45	2352829	53.19	ug/L		98
22) Chloroprene	8.276	88	632924	47.63	ug/L		98
23) 1,1-Dichloroethane	8.317	63	1300188	49.19	ug/L		100
24) Acrylonitrile	8.388	53	3715076	609.85	ug/L		99
25) Vinyl Acetate	8.540	43	8303438	264.65	ug/L		100
26) c-1,2-Dichloroethene	8.958	96	781558	52.05	ug/L		97
27) 2,2-Dichloropropane	9.081	77	979208	51.55	ug/L		98
28) Bromochloromethane	9.187	128	245887	44.33	ug/L		100
29) Cyclohexane	9.193	56	1272621	48.31	ug/L		98
30) Chloroform	9.228	83	1260829	49.95	ug/L		99
32) Dibromofluoromethane	9.433	113	711938	51.90	ug/L	#	90
33) 2-Butanone	9.551	72	595698	264.01	ug/L		98
34) 1,1,1-Trichloroethane	9.492	97	943861	50.42	ug/L		99
35) 1,1-Dichloropropene	9.610	75	1005562	48.31	ug/L		98
36) Propionitrile	9.898	54	1534072	564.32	ug/L		92
37) Methacrylonitrile	9.915	41	5990988	562.55	ug/L		98
38) Isobutyl Alcohol	9.956	43	1483626	1140.46	ug/L	#	51
40) Carbon Tetrachloride	9.416	117	838963	56.14	ug/L	#	84
41) Benzene	9.880	78	3010171	48.59	ug/L		100
42) 1,2-Dichloroethane	10.092	62	871887	47.47	ug/L		99
43) Trichloroethene	10.456	130	623604	48.69	ug/L		96
44) Methyl cyclohexane	10.456	83	1365053	48.89	ug/L		96
45) Dibromomethane	10.908	93	448582	49.24	ug/L		98
46) 1,2-Dichloropropane	10.991	63	883205	50.10	ug/L		98
47) Bromodichloromethane	11.020	83	924683	53.47	ug/L		100
48) Methyl Methacrylate	11.085	69	660844	47.40	ug/L		98
49) 1,4-Dioxane	11.196	88	226726	1441.90	ug/L		96
50) 2-Chloroethyl vinyl ether	11.490	63	2268127	229.77	ug/L		98
51) C-1,3-Dichloropropene	11.613	75	1412551	54.39	ug/L		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW003.D
Acq On : 28 Jul 2021 8:24 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 28 08:53:20 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

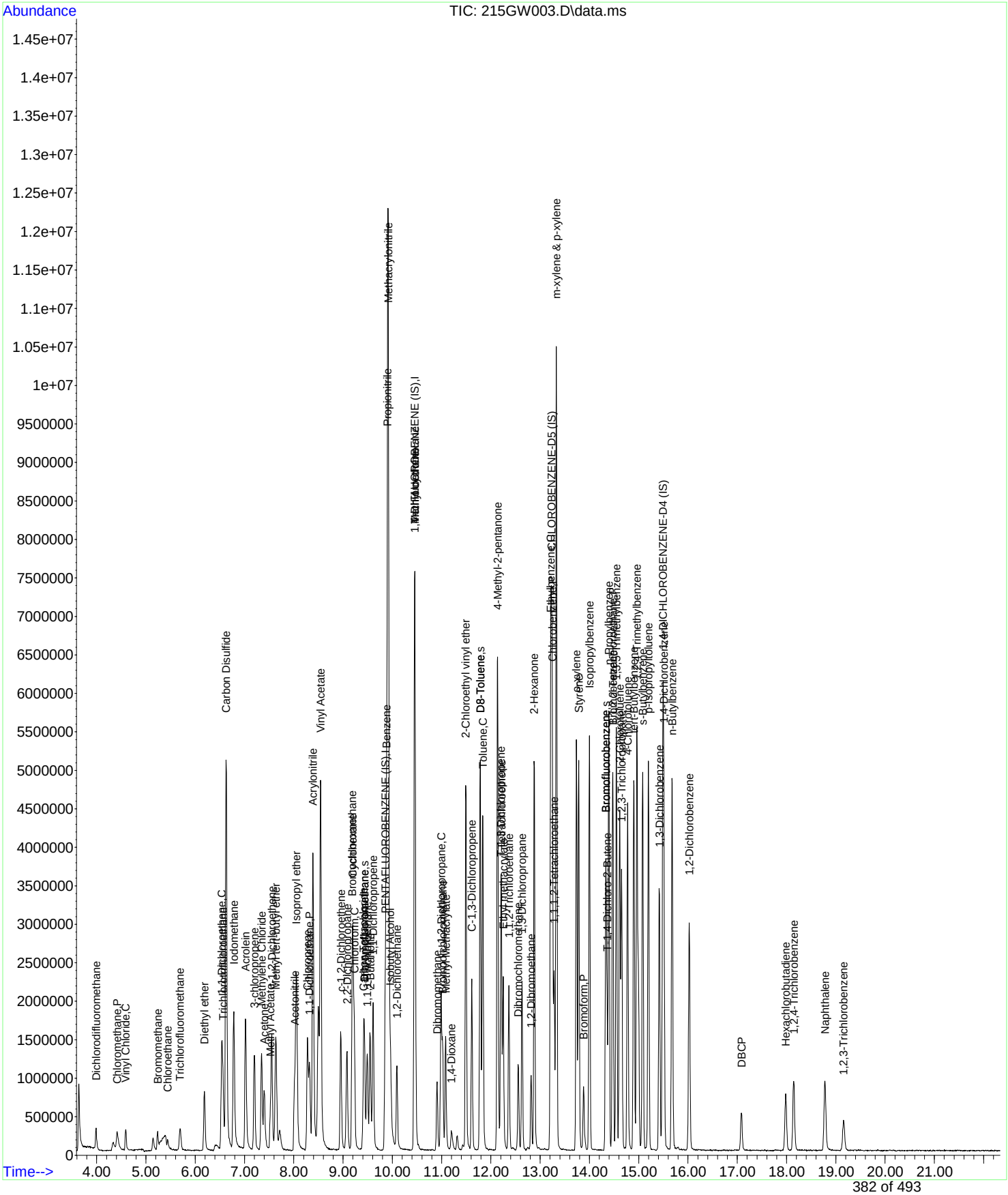
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3401508	52.77	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	671389	279.53	ug/L		97
56) Toluene	11.837	92	2064338	49.75	ug/L		100
57) T-1,3-Dichloropropene	12.201	75	1143080	54.43	ug/L		99
58) Tetrachloroethene	12.213	164	446309	47.00	ug/L		98
59) Ethyl methacrylate	12.248	69	1226695	50.35	ug/L		97
60) 1,1,2-Trichloroethane	12.365	97	706394	49.47	ug/L		99
61) Dibromochloromethane	12.553	129	619576	48.73	ug/L		98
62) 1,3-Dichloropropane	12.630	76	1351146	51.66	ug/L		97
63) 1,2-Dibromoethane	12.818	107	718120	50.20	ug/L		95
64) 2-Hexanone	12.877	43	3391478	263.04	ug/L		100
65) Ethylbenzene	13.211	106	1204054	51.43	ug/L		97
66) Chlorobenzene	13.247	112	2048469	49.69	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	635035	53.37	ug/L		99
68) m-xylene & p-xylene	13.329	106	2979081	99.17	ug/L		99
69) o-xylene	13.734	106	1536684	51.85	ug/L		98
70) Styrene	13.781	104	2614915	49.83	ug/L		99
71) Bromoform	13.881	173	353713	48.79	ug/L		98
72) Isopropylbenzene	13.999	105	3925453	49.84	ug/L		99
74) Bromofluorobenzene	14.334	95	1515075	51.98	ug/L	#	75
75) n-Propylbenzene	14.392	91	5085585	49.24	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.475	83	1294534	53.00	ug/L		100
77) 1,2,3-Trichloropropane	14.651	61	291358	51.54	ug/L		96
78) T-1,4-Dichloro-2-Butene	14.357	53	401536	56.15	ug/L		98
80) Bromobenzene	14.475	156	719918	52.22	ug/L		98
81) 1,2,4-Trimethylbenzene	14.962	105	3429047	50.98	ug/L		100
82) 2-Chlorotoluene	14.616	91	3064472	54.37	ug/L		99
83) 4-Chlorotoluene	14.774	91	3164306	51.17	ug/L		98
84) tert-Butylbenzene	14.898	119	2690916	50.74	ug/L		98
85) 1,3,5-Trimethylbenzene	14.545	105	3436734	51.16	ug/L		99
86) p-Isopropyltoluene	15.197	119	3335883	51.40	ug/L		100
87) s-Butylbenzene	15.080	105	4146212	51.41	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	1508847	52.32	ug/L		98
89) 1,4-Dichlorobenzene	15.509	146	1532171	51.26	ug/L		99
90) n-Butylbenzene	15.679	91	3522995	52.60	ug/L		99
91) 1,2-Dichlorobenzene	16.026	146	1415495	50.87	ug/L		98
92) DBCP	17.089	157	165666	57.96	ug/L		96
93) Hexachlorobutadiene	17.982	225	162218	52.05	ug/L		94
94) 1,2,4-Trichlorobenzene	18.147	180	380576	58.20	ug/L		95
95) Naphthalene	18.782	128	1189080	61.76	ug/L		98
96) 1,2,3-Trichlorobenzene	19.152	180	176308	60.06	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW003.D
Acq On : 28 Jul 2021 8:24 am
Operator : kkw
Sample : CCV1
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 28 08:53:20 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW004.D
Acq On : 28 Jul 2021 8:52 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 28 09:19:31 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1095048	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2655898	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1705509	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1278565	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	684973	52.28	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.56%				
52) D8-Toluene	11.784	98	3363288	51.35	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.70%				
73) Bromofluorobenzene	14.328	95	1462746	49.93	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.86%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	198047	17.58	ug/L		97
3) Chloromethane	4.416	50	329366	19.68	ug/L		97
4) Vinyl Chloride	4.586	62	275119	18.89	ug/L	#	74
5) Bromomethane	5.238	94	50701	13.70	ug/L	#	85
6) Chloroethane	5.450	64	148124	18.43	ug/L		98
7) Trichlorofluoromethane	5.703	101	328040	19.68	ug/L		98
8) Diethyl ether	6.190	59	240335	21.24	ug/L		99
9) 1,1-Dichloroethene	6.537	96	244773	21.03	ug/L		99
10) Trichlorotrifluoroethane	6.554	151	136457	19.34	ug/L		99
11) Acrolein	7.036	56	103911	35.35	ug/L		97
12) Iodomethane	6.784	142	330180	33.80	ug/L		96
13) Carbon Disulfide	6.631	76	819854	23.36	ug/L		99
14) 3-chloropropene	7.201	41	453280	22.51	ug/L		98
15) Acetone	7.401	43	237611	51.10	ug/L		97
16) Methylene Chloride	7.348	84	312179	20.92	ug/L		96
17) Methyl Acetate	7.530	43	264486	21.66	ug/L		98
18) t-1,2-Dichloroethene	7.553	96	271546	20.45	ug/L		94
19) Methyl tert-butyl ether	7.636	73	715061	21.24	ug/L		96
20) Acetonitrile	8.047	41	422521	136.71	ug/L		95
21) Isopropyl ether	8.053	45	928861	21.98	ug/L		98
22) Chloroprene	8.282	88	262164	20.66	ug/L		98
23) 1,1-Dichloroethane	8.317	63	541179	21.43	ug/L		99
24) Acrylonitrile	8.394	53	169903	29.20	ug/L		99
25) Vinyl Acetate	8.552	43	600114	20.02	ug/L		99
26) c-1,2-Dichloroethene	8.952	96	309412	21.57	ug/L		96
27) 2,2-Dichloropropane	9.081	77	391549	21.58	ug/L		98
28) Bromochloromethane	9.187	128	112283	21.19	ug/L		91
29) Cyclohexane	9.193	56	550683	21.89	ug/L		98
30) Chloroform	9.228	83	512953	21.27	ug/L		99
32) Dibromofluoromethane	9.428	113	684973	52.28	ug/L	#	89
33) 2-Butanone	9.551	72	128612	59.67	ug/L		94
34) 1,1,1-Trichloroethane	9.492	97	392922	21.98	ug/L		98
35) 1,1-Dichloropropene	9.610	75	415399	20.89	ug/L		98
36) Propionitrile	9.904	54	74393	28.65	ug/L	#	1
37) Methacrylonitrile	9.909	41	336632	33.09	ug/L	#	83
38) Isobutyl Alcohol	9.909	43	266453	214.42	ug/L	#	56
40) Carbon Tetrachloride	9.416	117	276464	18.21	ug/L		90
41) Benzene	9.880	78	1280954	20.35	ug/L		98
42) 1,2-Dichloroethane	10.092	62	345779	18.53	ug/L		99
43) Trichloroethene	10.450	130	261895	20.12	ug/L		88
44) Methyl cyclohexane	10.450	83	561569	19.80	ug/L		97
45) Dibromomethane	10.908	93	177177	19.14	ug/L		98
46) 1,2-Dichloropropane	10.985	63	351437	19.62	ug/L		98
47) Bromodichloromethane	11.020	83	361965	20.60	ug/L		99
48) Methyl Methacrylate	11.079	69	256816	18.13	ug/L		98
49) 1,4-Dioxane	11.196	88	87205	642.78	ug/L		100
50) 2-Chloroethyl vinyl ether	11.490	63	951401	94.86	ug/L		99
51) C-1,3-Dichloropropene	11.613	75	515980	19.56	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW004.D
Acq On : 28 Jul 2021 8:52 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 28 09:19:31 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

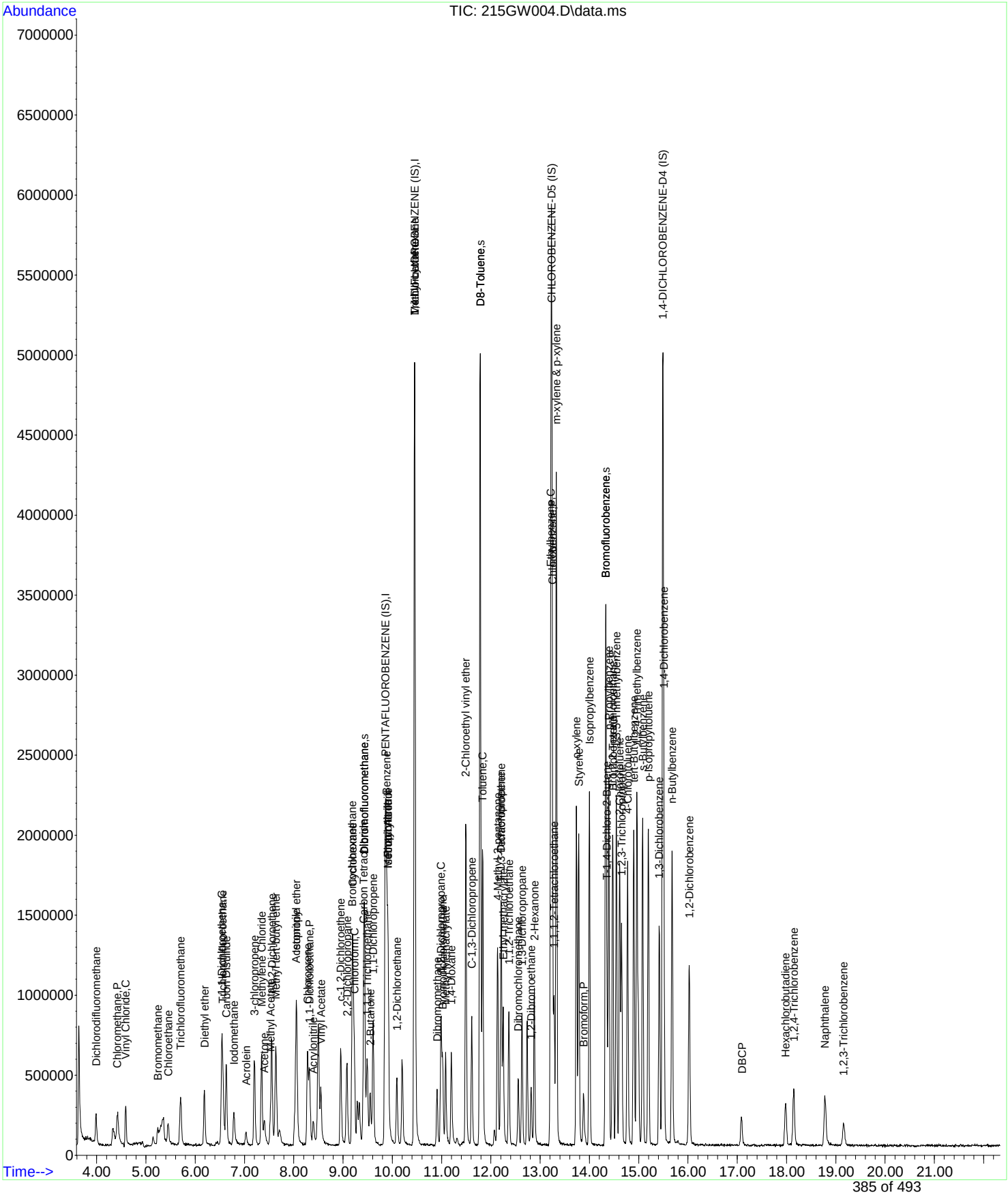
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3363288	51.35	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	126186	51.71	ug/L		91
56) Toluene	11.831	92	831107	19.93	ug/L		97
57) T-1,3-Dichloropropene	12.201	75	451764	21.40	ug/L		98
58) Tetrachloroethene	12.207	164	192938	20.21	ug/L		99
59) Ethyl methacrylate	12.248	69	491119	20.05	ug/L		97
60) 1,1,2-Trichloroethane	12.365	97	289131	20.15	ug/L		98
61) Dibromochloromethane	12.553	129	236727	18.52	ug/L		99
62) 1,3-Dichloropropane	12.630	76	517920	19.70	ug/L		98
63) 1,2-Dibromoethane	12.818	107	280731	19.52	ug/L		99
64) 2-Hexanone	12.882	43	675109	52.09	ug/L		100
65) Ethylbenzene	13.212	106	482574	20.51	ug/L		99
66) Chlorobenzene	13.247	112	844214	20.37	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.282	131	243109	20.33	ug/L		98
68) m-xylene & p-xylene	13.329	106	1225437	40.59	ug/L		99
69) o-xylene	13.734	106	593183	19.91	ug/L		97
70) Styrene	13.781	104	1022273	19.38	ug/L		99
71) Bromoform	13.881	173	132644	18.20	ug/L		99
72) Isopropylbenzene	13.999	105	1567762	19.24	ug/L		99
74) Bromofluorobenzene	14.328	95	1462746	49.93	ug/L	#	75
75) n-Propylbenzene	14.393	91	2069147	19.29	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	499657	20.35	ug/L		99
77) 1,2,3-Trichloropropane	14.651	61	105540	18.58	ug/L		95
78) T-1,4-Dichloro-2-Butene	14.351	53	154186	21.45	ug/L	#	77
80) Bromobenzene	14.475	156	295906	21.37	ug/L		97
81) 1,2,4-Trimethylbenzene	14.962	105	1400824	20.65	ug/L		99
82) 2-Chlorotoluene	14.610	91	1244938	21.99	ug/L		99
83) 4-Chlorotoluene	14.774	91	1248275	20.10	ug/L		99
84) tert-Butylbenzene	14.898	119	1060092	19.90	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	1354196	20.07	ug/L		99
86) p-Isopropyltoluene	15.197	119	1340288	20.56	ug/L		99
87) s-Butylbenzene	15.080	105	1670136	20.62	ug/L		98
88) 1,3-Dichlorobenzene	15.415	146	627265	21.65	ug/L		97
89) 1,4-Dichlorobenzene	15.509	146	629001	20.95	ug/L	#	84
90) n-Butylbenzene	15.673	91	1381001	20.53	ug/L		98
91) 1,2-Dichlorobenzene	16.026	146	558451	19.98	ug/L		96
92) DBCP	17.095	157	54287	22.89	ug/L		92
93) Hexachlorobutadiene	17.977	225	65442	20.91	ug/L		92
94) 1,2,4-Trichlorobenzene	18.147	180	149046	26.66	ug/L		98
95) Naphthalene	18.776	128	445192	29.62	ug/L		97
96) 1,2,3-Trichlorobenzene	19.152	180	62162	26.73	ug/L		95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW004.D
Acq On : 28 Jul 2021 8:52 am
Operator : kkw
Sample : BS1
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 28 09:19:31 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW005.D
Acq On : 28 Jul 2021 9:20 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 28 10:33:26 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1105421	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2599785	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1608323	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1192315	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	671572	50.77	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 101.54%				
52) D8-Toluene	11.784	98	3231309	50.40	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.80%				
73) Bromofluorobenzene	14.328	95	1388391	50.25	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	14607	1.28	ug/L	#	93
3) Chloromethane	4.422	50	26269	1.55	ug/L	#	82
4) Vinyl Chloride	4.592	62	15781	1.07	ug/L	#	44
5) Bromomethane	5.244	94	6156	1.71	ug/L	#	10
6) Chloroethane	5.474	64	9748	1.07	ug/L	#	44
7) Trichlorofluoromethane	5.709	101	16917	1.01	ug/L	#	73
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	6.801	142	21624	2.21	ug/L	#	81
13) Carbon Disulfide	0.000		0	N.D.	d		
14) 3-chloropropene	0.000		0	N.D.	d		
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	671781	50.79	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.	d		
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.892	78	9499	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.	d		
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW005.D
Acq On : 28 Jul 2021 9:20 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 28 10:33:26 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

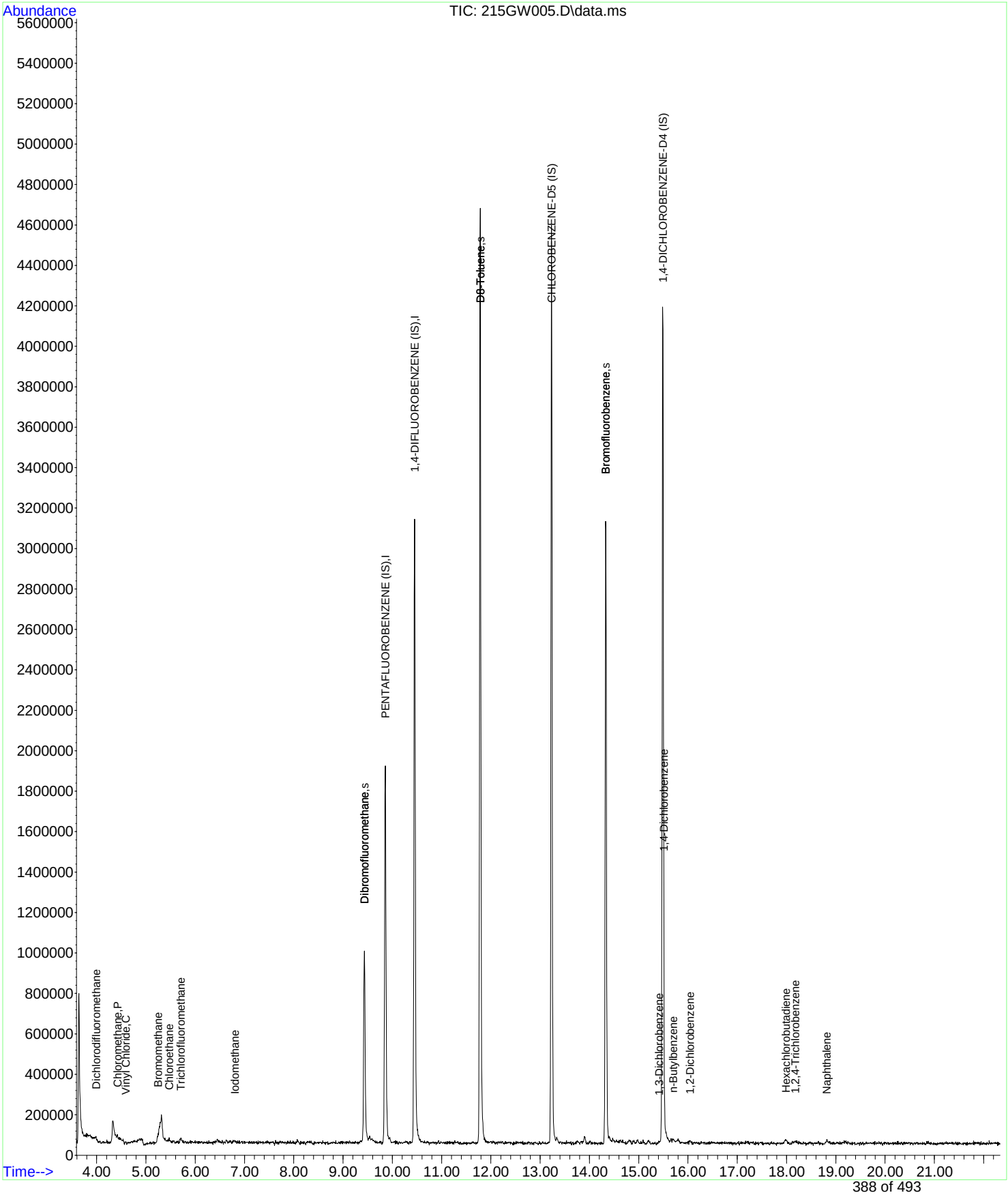
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3228293	50.35 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	11.831	92	4295	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D. d	
65) Ethylbenzene	0.000		0	N.D. d	
66) Chlorobenzene	13.241	112	6713	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	13.335	106	5573	N.D.	
69) o-xylene	13.746	106	4580	N.D.	
70) Styrene	13.811	104	4486	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	14.011	105	8804	N.D.	
74) Bromofluorobenzene	14.328	95	1390411	50.33 ug/L #	77
75) n-Propylbenzene	14.404	91	16386	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.980	105	7894	N.D.	
82) 2-Chlorotoluene	14.622	91	10440	N.D.	
83) 4-Chlorotoluene	14.798	91	11540	N.D.	
84) tert-Butylbenzene	14.910	119	6094	N.D.	
85) 1,3,5-Trimethylbenzene	14.545	105	7987	N.D.	
86) p-Isopropyltoluene	15.209	119	8062	N.D.	
87) s-Butylbenzene	15.092	105	12365	N.D.	
88) 1,3-Dichlorobenzene	15.415	146	7307	0.27 ug/L #	55
89) 1,4-Dichlorobenzene	15.509	146	6978	0.25 ug/L #	1
90) n-Butylbenzene	15.697	91	14888	0.24 ug/L #	59
91) 1,2-Dichlorobenzene	16.038	146	5794	0.22 ug/L #	51
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	17.989	225	4463	1.53 ug/L #	29
94) 1,2,4-Trichlorobenzene	18.177	180	4339	0.97 ug/L #	36
95) Naphthalene	18.811	128	22208	2.10 ug/L #	69
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW005.D
Acq On : 28 Jul 2021 9:20 am
Operator : kkw
Sample : CRL1
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 28 10:33:26 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW006.D
Acq On : 28 Jul 2021 9:48 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 28 10:35:52 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1058005	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2459389	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1530623	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1152122	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	623925	49.28	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 98.56%				
52) D8-Toluene	11.784	98	3112050	51.31	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.62%				
73) Bromofluorobenzene	14.328	95	1306869	49.70	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 99.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D. d			
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D. d			
13) Carbon Disulfide	0.000		0	N.D. d			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	624108	49.30	ug/L	#	87
33) 2-Butanone	0.000		0	N.D. d			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D. d			
41) Benzene	9.892	78	6481	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW006.D
Acq On : 28 Jul 2021 9:48 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 28 10:35:52 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

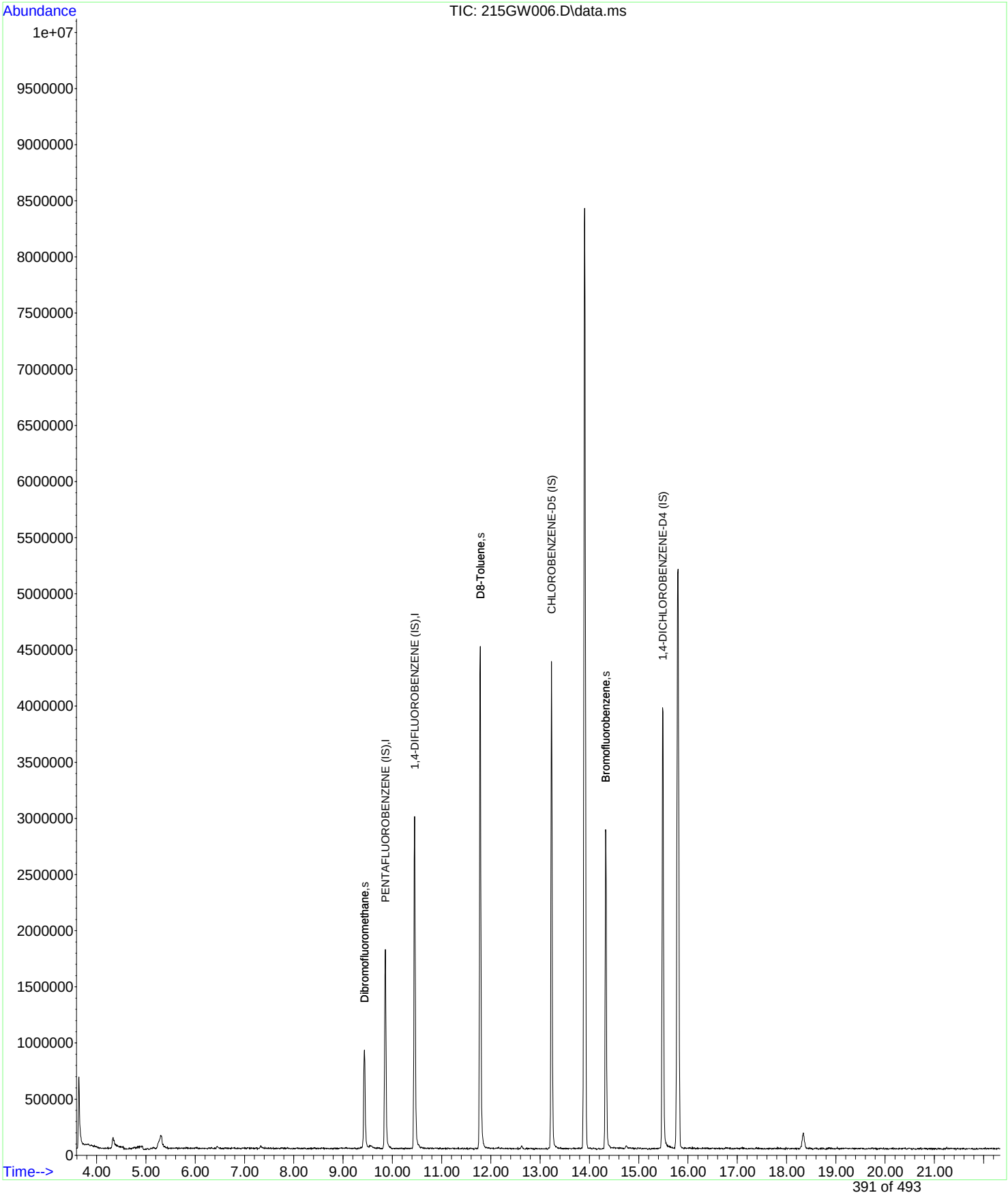
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3111985	51.31 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D. d	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	0.000		0	N.D. d	
74) Bromofluorobenzene	14.328	95	1308375	49.76 ug/L #	76
75) n-Propylbenzene	14.334	91	4370	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	0.000		0	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW006.D
Acq On : 28 Jul 2021 9:48 am
Operator : kkw
Sample : BLK1
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 28 10:35:52 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW007.D
Acq On : 28 Jul 2021 10:16 am
Operator : kkw
Sample : AE05483-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 28 10:39:01 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1040767	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2434148	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1534041	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1160628	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	636175	51.08	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.16%				
52) D8-Toluene	11.784	98	3125049	52.06	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.12%				
73) Bromofluorobenzene	14.334	95	1324088	50.25	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.50%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	0.000		0	N.D. d			
4) Vinyl Chloride	4.586	62	102299	7.39	ug/L	#	1
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D. d			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D. d			
13) Carbon Disulfide	0.000		0	N.D. d			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D. d			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D. d			
18) t-1,2-Dichloroethene	7.559	96	9216	0.73	ug/L		93
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	636402	51.10	ug/L	#	90
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D. d			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	0.000		0	N.D. d			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	0.000		0	N.D. d			
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	11.778	75	4815	N.D.			

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW007.D
Acq On : 28 Jul 2021 10:16 am
Operator : kkw
Sample : AE05483-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 28 10:39:01 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

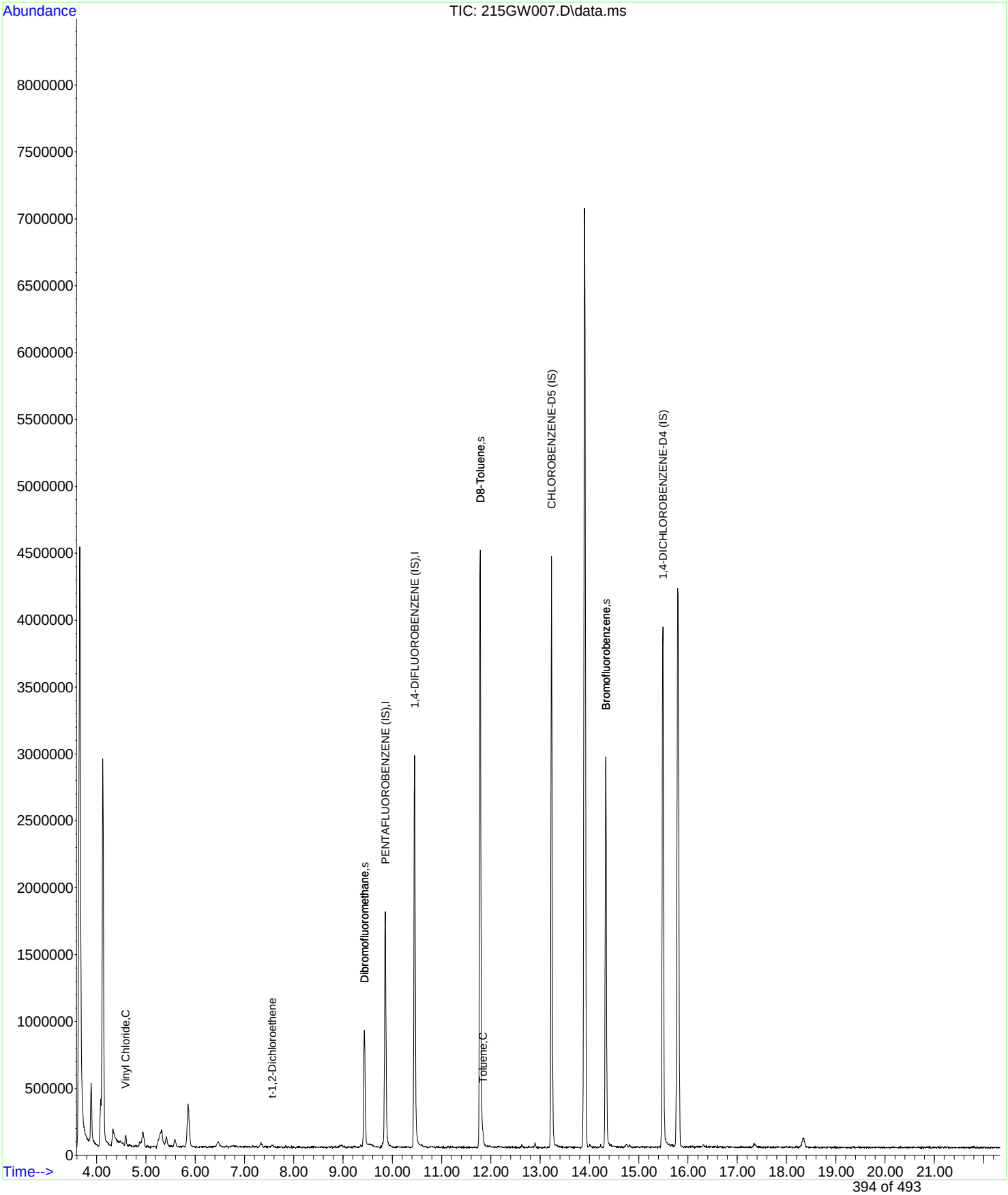
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3125049	52.06 ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	11.837	92	17239	0.46 ug/L #	84
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D. d	
64) 2-Hexanone	0.000		0	N.D.	
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D. d	
71) Bromoform	0.000		0	N.D. d	
72) Isopropylbenzene	14.005	105	10456	N.D.	
74) Bromofluorobenzene	14.334	95	1324636	50.27 ug/L #	76
75) n-Propylbenzene	14.404	91	7470	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	14.998	105	5019	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	0.000		0	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.086	105	5706	N.D.	
88) 1,3-Dichlorobenzene	0.000		0	N.D.	
89) 1,4-Dichlorobenzene	0.000		0	N.D.	
90) n-Butylbenzene	0.000		0	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.	
95) Naphthalene	0.000		0	N.D.	
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW007.D
Acq On : 28 Jul 2021 10:16 am
Operator : kkw
Sample : AE05483-01
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jul 28 10:39:01 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW014.D
Acq On : 28 Jul 2021 1:33 pm
Operator : kkw
Sample : AE05878-23RE1@50X
Misc : 50
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 28 14:04:44 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	963403	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2267640	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1448145	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1108052	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	603090	52.32	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.64%				
52) D8-Toluene	11.784	98	2928685	52.37	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.74%				
73) Bromofluorobenzene	14.328	95	1255376	50.47	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.94%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.	d		
3) Chloromethane	0.000		0	N.D.	d		
4) Vinyl Chloride	4.586	62	65315	5.10	ug/L	#	37
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	6.543	96	5241	0.51	ug/L	#	61
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.	d		
13) Carbon Disulfide	6.625	76	4911	N.D.			
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	7.547	96	5628	0.48	ug/L	#	86
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	8.952	96	1281483	101.55	ug/L		97
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.428	113	603090	52.32	ug/L	#	88
33) 2-Butanone	0.000		0	N.D.	d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	0.000		0	N.D.			
41) Benzene	9.880	78	5013	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	10.456	130	789800	71.08	ug/L		99
44) Methyl cyclohexane	0.000		0	N.D.	d		
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW014.D
Acq On : 28 Jul 2021 1:33 pm
Operator : kkw
Sample : AE05878-23RE1@50X
Misc : 50
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 28 14:04:44 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

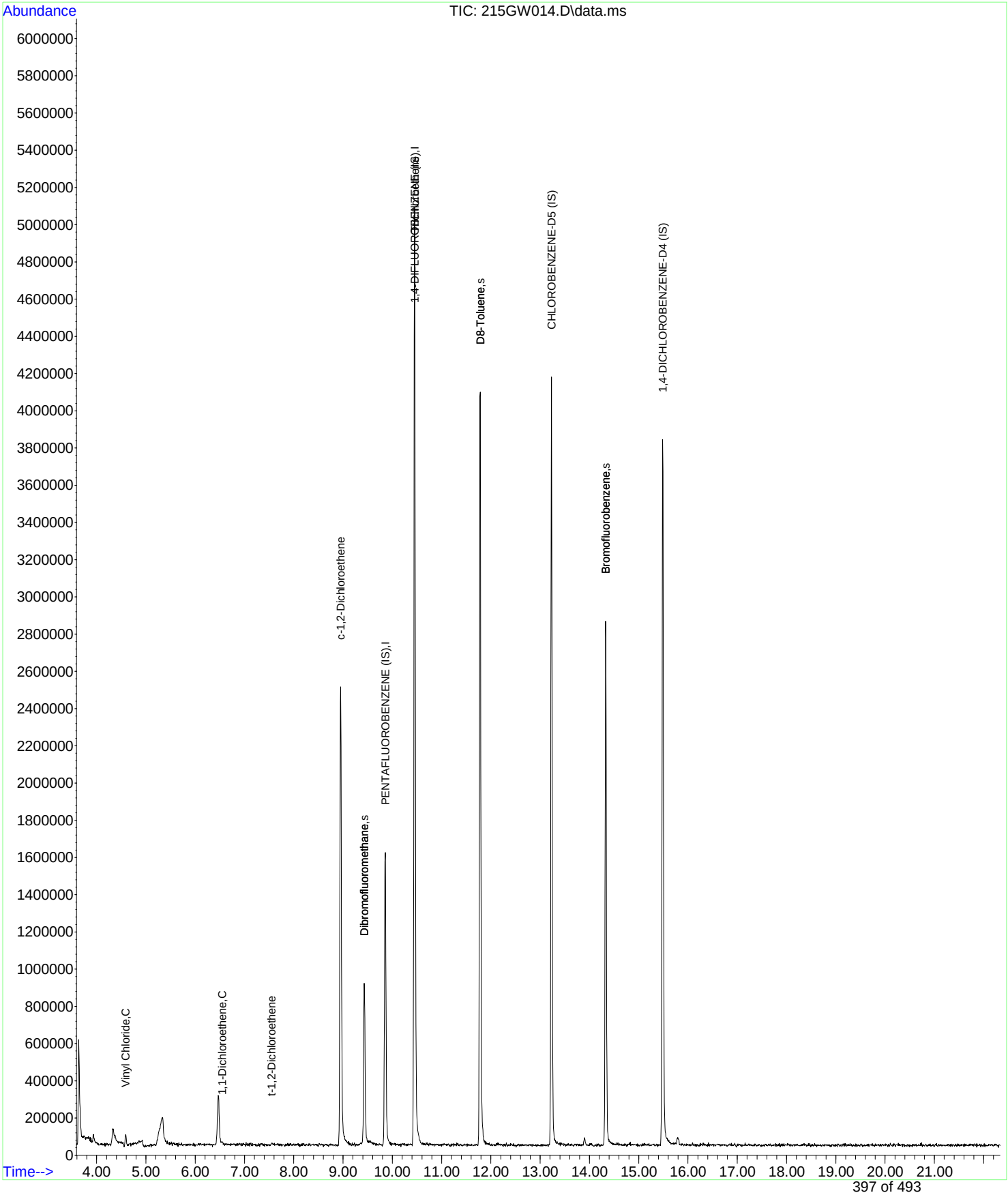
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2926327	52.33	ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.328	95	1255376	50.47	ug/L #	76
75) n-Propylbenzene	14.410	91	5047	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	14.992	105	4854	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	15.197	119	4609	N.D.		
87) s-Butylbenzene	15.092	105	5602	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	15.714	91	5983	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW014.D
Acq On : 28 Jul 2021 1:33 pm
Operator : kkw
Sample : AE05878-23RE1@50X
Misc : 50
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jul 28 14:04:44 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW015.D
Acq On : 28 Jul 2021 2:01 pm
Operator : kkw
Sample : AE05878-27RE1@5X
Misc : 5
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 29 07:17:30 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) PENTAFLUOROBENZENE (IS)	9.857	168	965575	50.00	ug/L	0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2323932	50.00	ug/L	0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1457980	50.00	ug/L	# 0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1115863	50.00	ug/L	0.00
System Monitoring Compounds						
31) Dibromofluoromethane	9.433	113	590399	51.10	ug/L	0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 102.20%			
52) D8-Toluene	11.784	98	2935420	51.22	ug/L	0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 102.44%			
73) Bromofluorobenzene	14.334	95	1262228	50.40	ug/L	0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.80%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.		
3) Chloromethane	0.000		0	N.D. d		
4) Vinyl Chloride	4.586	62	5509	0.43	ug/L #	1
5) Bromomethane	0.000		0	N.D.		
6) Chloroethane	0.000		0	N.D.		
7) Trichlorofluoromethane	0.000		0	N.D.		
8) Diethyl ether	0.000		0	N.D.		
9) 1,1-Dichloroethene	6.572	96	5513	0.54	ug/L #	1
10) Trichlorotrifluoroethane	6.560	151	581190	93.40	ug/L	98
11) Acrolein	0.000		0	N.D.		
12) Iodomethane	6.807	142	5624	0.66	ug/L #	43
13) Carbon Disulfide	0.000		0	N.D.		
14) 3-chloropropene	0.000		0	N.D.		
15) Acetone	0.000		0	N.D.		
16) Methylene Chloride	0.000		0	N.D.		
17) Methyl Acetate	0.000		0	N.D.		
18) t-1,2-Dichloroethene	0.000		0	N.D.		
19) Methyl tert-butyl ether	0.000		0	N.D.		
20) Acetonitrile	0.000		0	N.D.		
21) Isopropyl ether	0.000		0	N.D.		
22) Chloroprene	0.000		0	N.D.		
23) 1,1-Dichloroethane	0.000		0	N.D.		
24) Acrylonitrile	0.000		0	N.D.		
25) Vinyl Acetate	0.000		0	N.D.		
26) c-1,2-Dichloroethene	8.952	96	128845	10.19	ug/L	98
27) 2,2-Dichloropropane	0.000		0	N.D.		
28) Bromochloromethane	0.000		0	N.D.		
29) Cyclohexane	0.000		0	N.D.		
30) Chloroform	0.000		0	N.D.		
32) Dibromofluoromethane	9.433	113	590399	51.10	ug/L #	88
33) 2-Butanone	0.000		0	N.D. d		
34) 1,1,1-Trichloroethane	0.000		0	N.D.		
35) 1,1-Dichloropropene	0.000		0	N.D.		
36) Propionitrile	0.000		0	N.D.		
37) Methacrylonitrile	0.000		0	N.D.		
38) Isobutyl Alcohol	0.000		0	N.D.		
40) Carbon Tetrachloride	0.000		0	N.D.		
41) Benzene	9.880	78	4453	N.D.		
42) 1,2-Dichloroethane	0.000		0	N.D.		
43) Trichloroethene	10.456	130	281257	24.70	ug/L	90
44) Methyl cyclohexane	0.000		0	N.D. d		
45) Dibromomethane	0.000		0	N.D.		
46) 1,2-Dichloropropane	0.000		0	N.D.		
47) Bromodichloromethane	0.000		0	N.D.		
48) Methyl Methacrylate	0.000		0	N.D.		
49) 1,4-Dioxane	0.000		0	N.D.		
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.		
51) C-1,3-Dichloropropene	0.000		0	N.D.		

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW015.D
Acq On : 28 Jul 2021 2:01 pm
Operator : kkw
Sample : AE05878-27RE1@5X
Misc : 5
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 29 07:17:30 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

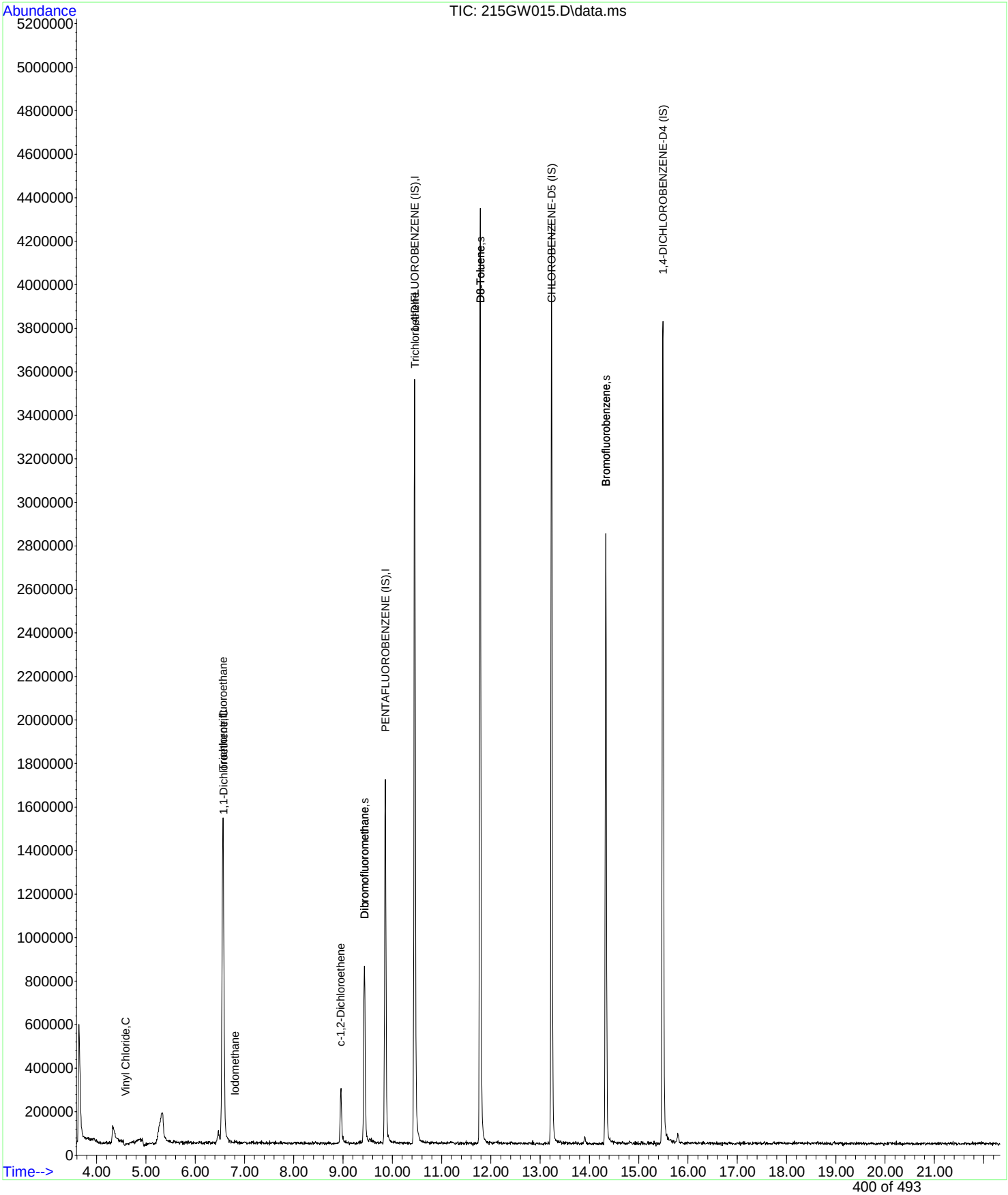
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
53) D8-Toluene	11.784	98	2935420	51.22	ug/L	96
54) 4-Methyl-2-pentanone	0.000		0	N.D.		
56) Toluene	0.000		0	N.D.		
57) T-1,3-Dichloropropene	0.000		0	N.D.		
58) Tetrachloroethene	0.000		0	N.D.		
59) Ethyl methacrylate	0.000		0	N.D.		
60) 1,1,2-Trichloroethane	0.000		0	N.D.		
61) Dibromochloromethane	0.000		0	N.D.		
62) 1,3-Dichloropropane	0.000		0	N.D.		
63) 1,2-Dibromoethane	0.000		0	N.D.		
64) 2-Hexanone	0.000		0	N.D.		
65) Ethylbenzene	0.000		0	N.D.		
66) Chlorobenzene	0.000		0	N.D.		
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.		
68) m-xylene & p-xylene	0.000		0	N.D.		
69) o-xylene	0.000		0	N.D.		
70) Styrene	0.000		0	N.D.		
71) Bromoform	0.000		0	N.D.		
72) Isopropylbenzene	0.000		0	N.D.		
74) Bromofluorobenzene	14.334	95	1262962	50.43	ug/L #	75
75) n-Propylbenzene	14.334	91	4032	N.D.		
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.		
77) 1,2,3-Trichloropropane	0.000		0	N.D.		
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.		
80) Bromobenzene	0.000		0	N.D.		
81) 1,2,4-Trimethylbenzene	0.000		0	N.D.		
82) 2-Chlorotoluene	0.000		0	N.D.		
83) 4-Chlorotoluene	0.000		0	N.D.		
84) tert-Butylbenzene	0.000		0	N.D.		
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.		
86) p-Isopropyltoluene	0.000		0	N.D.		
87) s-Butylbenzene	0.000		0	N.D.		
88) 1,3-Dichlorobenzene	0.000		0	N.D.		
89) 1,4-Dichlorobenzene	0.000		0	N.D.		
90) n-Butylbenzene	0.000		0	N.D.		
91) 1,2-Dichlorobenzene	0.000		0	N.D.		
92) DBCP	0.000		0	N.D.		
93) Hexachlorobutadiene	0.000		0	N.D.		
94) 1,2,4-Trichlorobenzene	0.000		0	N.D.		
95) Naphthalene	0.000		0	N.D.		
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW015.D
Acq On : 28 Jul 2021 2:01 pm
Operator : kkw
Sample : AE05878-27RE1@5X
Misc : 5
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jul 29 07:17:30 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW026.D
Acq On : 28 Jul 2021 7:08 pm
Operator : kkw
Sample : 1G28012-MS1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 29 07:18:15 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.856	168	997249	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2338476	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1494708	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1150265	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	630368	52.83	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 105.66%				
52) D8-Toluene	11.784	98	3005898	52.12	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 104.24%				
73) Bromofluorobenzene	14.334	95	1339848	52.18	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 104.36%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.987	85	190133	18.53	ug/L		99
3) Chloromethane	4.416	50	257923	16.92	ug/L		96
4) Vinyl Chloride	4.586	62	329091	24.81	ug/L	#	37
5) Bromomethane	5.232	94	27661	8.33	ug/L	#	88
6) Chloroethane	5.450	64	134916	18.44	ug/L		96
7) Trichlorofluoromethane	5.702	101	338068	22.27	ug/L		99
8) Diethyl ether	6.184	59	196212	19.04	ug/L		98
9) 1,1-Dichloroethene	6.537	96	238557	22.51	ug/L		99
10) Trichlorotrifluoroethane	6.572	151	137948	21.46	ug/L		96
11) Acrolein	7.030	56	65812	24.58	ug/L		98
12) Iodomethane	6.784	142	151328	17.06	ug/L		97
13) Carbon Disulfide	6.631	76	797526	24.96	ug/L		99
14) 3-chloropropene	7.201	41	396557	21.60	ug/L		98
15) Acetone	7.401	43	190103	44.89	ug/L		97
16) Methylene Chloride	7.342	84	263848	19.41	ug/L		94
17) Methyl Acetate	7.524	43	193824	17.43	ug/L		98
18) t-1,2-Dichloroethene	7.553	96	266795	22.06	ug/L		97
19) Methyl tert-butyl ether	7.636	73	596237	19.44	ug/L		95
20) Acetonitrile	8.041	41	343113	121.90	ug/L	#	91
21) Isopropyl ether	8.059	45	776639	20.18	ug/L		98
22) Chloroprene	8.276	88	239688	20.74	ug/L		95
23) 1,1-Dichloroethane	8.317	63	515401	22.41	ug/L		99
24) Acrylonitrile	8.399	53	125652	23.71	ug/L		93
25) Vinyl Acetate	8.546	43	431883	15.82	ug/L		99
26) c-1,2-Dichloroethene	8.952	96	288553	22.09	ug/L		98
27) 2,2-Dichloropropane	9.075	77	342453	20.73	ug/L		98
28) Bromochloromethane	9.187	128	103235	21.40	ug/L		91
29) Cyclohexane	9.193	56	509618	22.24	ug/L		97
30) Chloroform	9.222	83	463823	21.12	ug/L		98
32) Dibromofluoromethane	9.428	113	630368	52.83	ug/L	#	91
33) 2-Butanone	9.551	72	110813	56.46	ug/L		76
34) 1,1,1-Trichloroethane	9.486	97	368840	22.65	ug/L		98
35) 1,1-Dichloropropene	9.610	75	404927	22.36	ug/L		98
36) Propionitrile	9.909	54	54155	22.90	ug/L	#	1
37) Methacrylonitrile	9.915	41	277177	29.92	ug/L	#	78
38) Isobutyl Alcohol	9.909	43	218079	192.70	ug/L	#	45
40) Carbon Tetrachloride	9.422	117	282150	21.11	ug/L		86
41) Benzene	9.880	78	1222058	22.05	ug/L		97
42) 1,2-Dichloroethane	10.092	62	306559	18.66	ug/L		99
43) Trichloroethene	10.456	130	250591	21.87	ug/L		87
44) Methyl cyclohexane	10.456	83	518178	20.75	ug/L		97
45) Dibromomethane	10.908	93	154838	19.00	ug/L		98
46) 1,2-Dichloropropane	10.985	63	318679	20.21	ug/L		99
47) Bromodichloromethane	11.020	83	318485	20.58	ug/L		99
48) Methyl Methacrylate	11.079	69	201915	16.19	ug/L		98
49) 1,4-Dioxane	11.202	88	78881	658.11	ug/L		98
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.	d		
51) C-1,3-Dichloropropene	11.613	75	428112	18.43	ug/L		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW026.D
Acq On : 28 Jul 2021 7:08 pm
Operator : kkw
Sample : 1G28012-MS1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 29 07:18:15 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

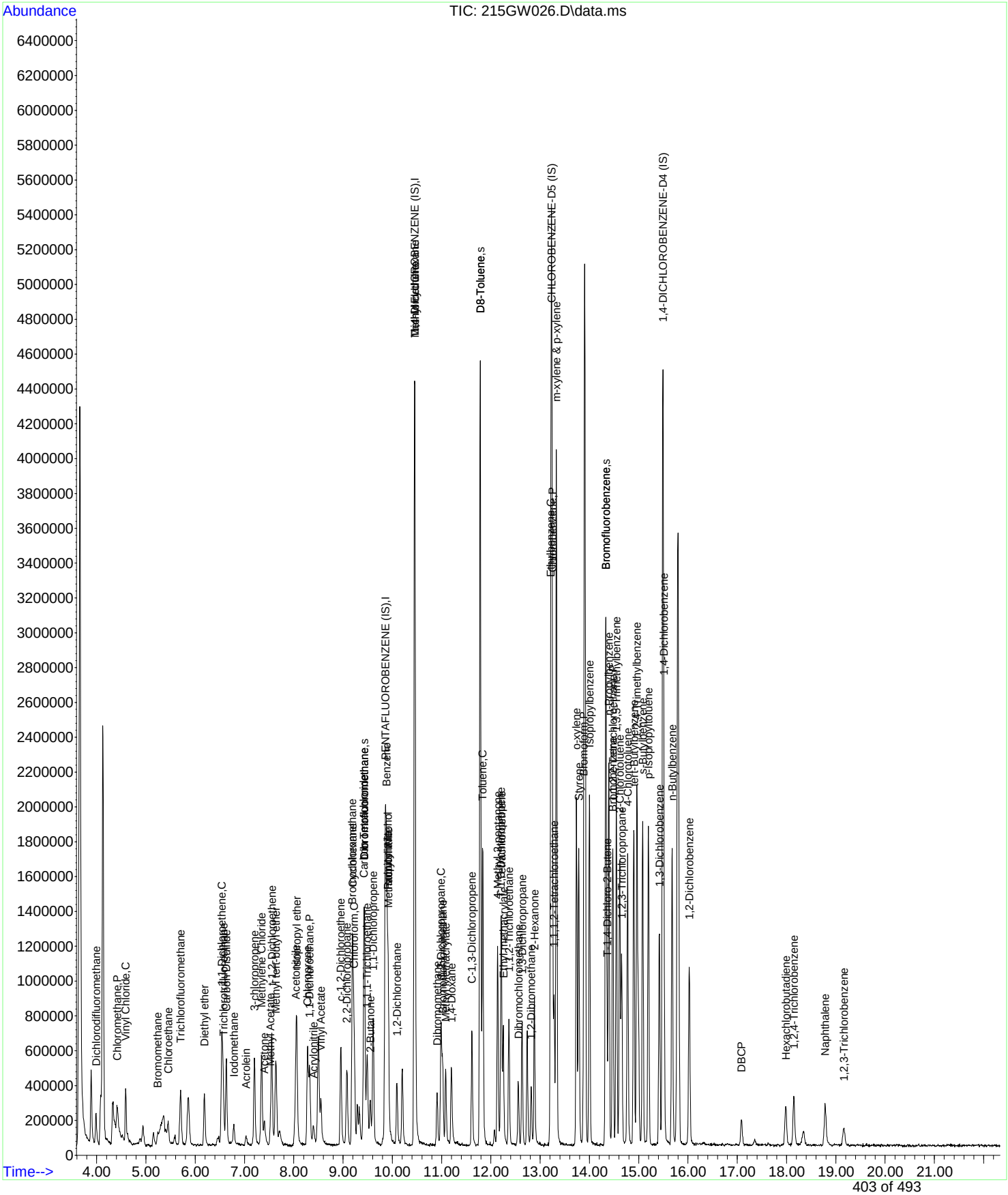
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3005898	52.12	ug/L		94
54) 4-Methyl-2-pentanone	12.136	100	115942	53.96	ug/L		99
56) Toluene	11.831	92	805972	22.05	ug/L		98
57) T-1,3-Dichloropropene	12.201	75	392725	21.23	ug/L		99
58) Tetrachloroethene	12.213	164	171467	20.50	ug/L		99
59) Ethyl methacrylate	12.254	69	395109	18.41	ug/L		95
60) 1,1,2-Trichloroethane	12.365	97	256879	20.42	ug/L		98
61) Dibromochloromethane	12.559	129	203840	18.20	ug/L		97
62) 1,3-Dichloropropane	12.636	76	435547	18.90	ug/L		99
63) 1,2-Dibromoethane	12.818	107	243578	19.33	ug/L		95
64) 2-Hexanone	12.882	43	533695	46.99	ug/L		98
65) Ethylbenzene	13.211	106	431395	20.92	ug/L		95
66) Chlorobenzene	13.247	112	781338	21.52	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.282	131	218312	20.83	ug/L		98
68) m-xylene & p-xylene	13.329	106	1128411	42.64	ug/L		99
69) o-xylene	13.734	106	574592	22.01	ug/L		94
70) Styrene	13.781	104	909351	19.67	ug/L		99
71) Bromoform	13.881	173	94291	14.77	ug/L		99
72) Isopropylbenzene	13.999	105	1486028	20.84	ug/L		99
74) Bromofluorobenzene	14.334	95	1339848	52.18	ug/L	#	73
75) n-Propylbenzene	14.392	91	1932539	20.59	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.475	83	434281	20.18	ug/L		99
77) 1,2,3-Trichloropropane	14.657	61	89661	18.01	ug/L		94
78) T-1,4-Dichloro-2-Butene	14.357	53	118990	18.89	ug/L	#	67
80) Bromobenzene	14.469	156	260598	20.92	ug/L		97
81) 1,2,4-Trimethylbenzene	14.962	105	1303913	21.36	ug/L		99
82) 2-Chlorotoluene	14.616	91	1112509	21.85	ug/L		99
83) 4-Chlorotoluene	14.774	91	1144898	20.49	ug/L		99
84) tert-Butylbenzene	14.904	119	995229	20.77	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	1248360	20.57	ug/L		100
86) p-Isopropyltoluene	15.197	119	1247673	21.28	ug/L		99
87) s-Butylbenzene	15.080	105	1567774	21.51	ug/L		100
88) 1,3-Dichlorobenzene	15.421	146	544676	20.90	ug/L		98
89) 1,4-Dichlorobenzene	15.509	146	552856	20.47	ug/L	#	83
90) n-Butylbenzene	15.679	91	1230311	20.33	ug/L		99
91) 1,2-Dichlorobenzene	16.026	146	498884	19.84	ug/L		98
92) DBCP	17.083	157	46868	22.07	ug/L		88
93) Hexachlorobutadiene	17.988	225	54602	19.39	ug/L		91
94) 1,2,4-Trichlorobenzene	18.147	180	114677	23.25	ug/L		96
95) Naphthalene	18.782	128	319104	24.69	ug/L		99
96) 1,2,3-Trichlorobenzene	19.163	180	48103	23.59	ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW026.D
Acq On : 28 Jul 2021 7:08 pm
Operator : kkw
Sample : 1G28012-MS1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 29 07:18:15 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW027.D
Acq On : 28 Jul 2021 7:36 pm
Operator : kkw
Sample : 1G28012-MSD1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 29 07:18:19 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1150116	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2743352	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1660336	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1091251	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.434	113	686432	49.88	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 99.76%				
52) D8-Toluene	11.784	98	3405828	50.34	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 100.68%				
73) Bromofluorobenzene	14.334	95	1376717	48.27	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 96.54%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	0.000		0	N.D.			
3) Chloromethane	4.387	50	4363	0.25	ug/L	#	41
4) Vinyl Chloride	0.000		0	N.D.			
5) Bromomethane	0.000		0	N.D.			
6) Chloroethane	0.000		0	N.D.			
7) Trichlorofluoromethane	0.000		0	N.D.			
8) Diethyl ether	0.000		0	N.D.			
9) 1,1-Dichloroethene	0.000		0	N.D.			
10) Trichlorotrifluoroethane	0.000		0	N.D.			
11) Acrolein	0.000		0	N.D.			
12) Iodomethane	0.000		0	N.D.			
13) Carbon Disulfide	6.643	76	14633	0.39	ug/L	#	9
14) 3-chloropropene	0.000		0	N.D.			
15) Acetone	0.000		0	N.D.			
16) Methylene Chloride	0.000		0	N.D.			
17) Methyl Acetate	0.000		0	N.D.			
18) t-1,2-Dichloroethene	0.000		0	N.D.			
19) Methyl tert-butyl ether	0.000		0	N.D.			
20) Acetonitrile	0.000		0	N.D.			
21) Isopropyl ether	0.000		0	N.D.			
22) Chloroprene	0.000		0	N.D.			
23) 1,1-Dichloroethane	0.000		0	N.D.			
24) Acrylonitrile	0.000		0	N.D.			
25) Vinyl Acetate	0.000		0	N.D.			
26) c-1,2-Dichloroethene	0.000		0	N.D.			
27) 2,2-Dichloropropane	0.000		0	N.D.			
28) Bromochloromethane	0.000		0	N.D.			
29) Cyclohexane	0.000		0	N.D.			
30) Chloroform	0.000		0	N.D.			
32) Dibromofluoromethane	9.434	113	686432	49.88	ug/L	#	87
33) 2-Butanone	0.000		0	N.D.			
34) 1,1,1-Trichloroethane	0.000		0	N.D.			
35) 1,1-Dichloropropene	0.000		0	N.D.			
36) Propionitrile	0.000		0	N.D.			
37) Methacrylonitrile	0.000		0	N.D.			
38) Isobutyl Alcohol	0.000		0	N.D.			
40) Carbon Tetrachloride	9.357	117	4278	0.27	ug/L	#	1
41) Benzene	9.880	78	5254	N.D.			
42) 1,2-Dichloroethane	0.000		0	N.D.			
43) Trichloroethene	0.000		0	N.D.			
44) Methyl cyclohexane	10.456	83	33836	1.15	ug/L	#	44
45) Dibromomethane	0.000		0	N.D.			
46) 1,2-Dichloropropane	0.000		0	N.D.			
47) Bromodichloromethane	0.000		0	N.D.			
48) Methyl Methacrylate	0.000		0	N.D.			
49) 1,4-Dioxane	0.000		0	N.D.			
50) 2-Chloroethyl vinyl ether	0.000		0	N.D.			
51) C-1,3-Dichloropropene	0.000		0	N.D.			

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW027.D
Acq On : 28 Jul 2021 7:36 pm
Operator : kkw
Sample : 1G28012-MSD1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 29 07:18:19 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration

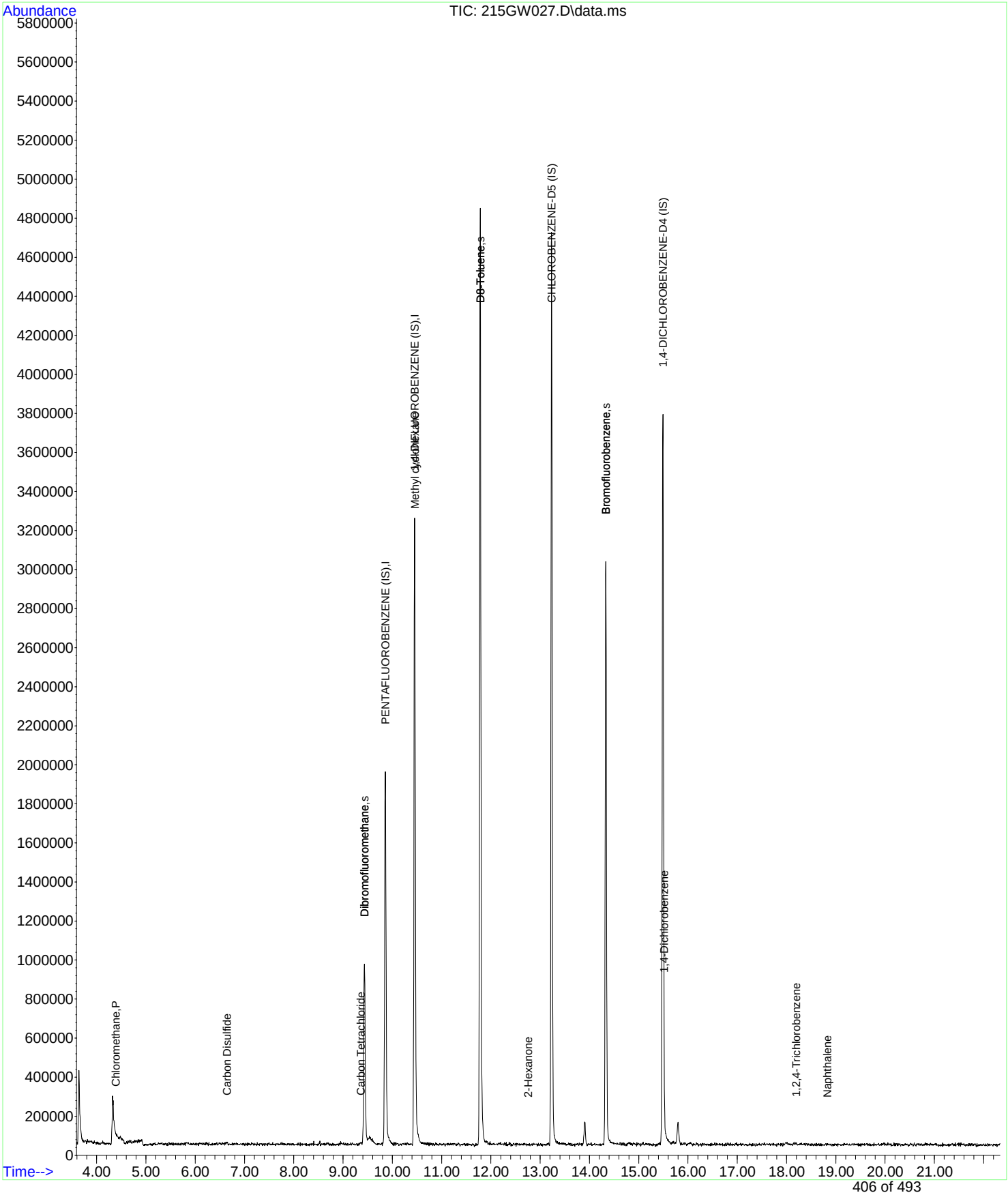
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.784	98	3405828	50.34 ug/L	95
54) 4-Methyl-2-pentanone	0.000		0	N.D.	
56) Toluene	0.000		0	N.D.	
57) T-1,3-Dichloropropene	0.000		0	N.D.	
58) Tetrachloroethene	0.000		0	N.D.	
59) Ethyl methacrylate	0.000		0	N.D.	
60) 1,1,2-Trichloroethane	0.000		0	N.D.	
61) Dibromochloromethane	0.000		0	N.D.	
62) 1,3-Dichloropropane	0.000		0	N.D.	
63) 1,2-Dibromoethane	0.000		0	N.D.	
64) 2-Hexanone	12.753	43	4250	0.34 ug/L #	28
65) Ethylbenzene	0.000		0	N.D.	
66) Chlorobenzene	0.000		0	N.D.	
67) 1,1,1,2-Tetrachloroethane	0.000		0	N.D.	
68) m-xylene & p-xylene	0.000		0	N.D.	
69) o-xylene	0.000		0	N.D.	
70) Styrene	0.000		0	N.D.	
71) Bromoform	0.000		0	N.D.	
72) Isopropylbenzene	0.000		0	N.D.	
74) Bromofluorobenzene	14.334	95	1376717	48.27 ug/L #	75
75) n-Propylbenzene	14.410	91	4175	N.D.	
76) 1,1,2,2-Tetrachloroethane	0.000		0	N.D.	
77) 1,2,3-Trichloropropane	0.000		0	N.D.	
78) T-1,4-Dichloro-2-Butene	0.000		0	N.D.	
80) Bromobenzene	0.000		0	N.D.	
81) 1,2,4-Trimethylbenzene	15.092	105	7096	N.D.	
82) 2-Chlorotoluene	0.000		0	N.D.	
83) 4-Chlorotoluene	14.798	91	4655	N.D.	
84) tert-Butylbenzene	0.000		0	N.D.	
85) 1,3,5-Trimethylbenzene	0.000		0	N.D.	
86) p-Isopropyltoluene	0.000		0	N.D.	
87) s-Butylbenzene	15.092	105	7096	N.D.	
88) 1,3-Dichlorobenzene	15.415	146	4196	N.D.	
89) 1,4-Dichlorobenzene	15.515	146	5158	0.20 ug/L #	1
90) n-Butylbenzene	15.721	91	7499	N.D.	
91) 1,2-Dichlorobenzene	0.000		0	N.D.	
92) DBCP	0.000		0	N.D.	
93) Hexachlorobutadiene	0.000		0	N.D.	
94) 1,2,4-Trichlorobenzene	18.194	180	4169	1.02 ug/L #	36
95) Naphthalene	18.829	128	10459	1.09 ug/L #	69
96) 1,2,3-Trichlorobenzene	0.000		0	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\072821\
Data File : 215GW027.D
Acq On : 28 Jul 2021 7:36 pm
Operator : kkw
Sample : 1G28012-MSD1
Misc :
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jul 29 07:18:19 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2106098
QLast Update : Mon Jun 21 08:16:13 2021
Response via : Initial Calibration



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ANALYSIS SEQUENCE

AA66932

Instrument: OVGCMS5

Calibration ID: 2105058

Printed: 6/18/2021 10:00:04AM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA66932-TUN1	QC		1		A1B1159			
AA66932-CAL1	QC		2		A1F0975	A1D0593		
AA66932-CAL2	QC		3		A1F0976	A1D0593		
AA66932-CAL3	QC		4		A1F0977	A1D0593		
AA66932-CAL4	QC		5		A1F0978	A1D0593		
AA66932-CAL5	QC		6		A1F0979	A1D0593		
AA66932-CAL6	QC		7		A1F0980	A1D0593		
AA66932-CAL7	QC		8		A1F0981	A1D0593		
AA66932-CAL8	QC		9		A1F0982	A1D0593		
AA66932-SCV1	QC		10		A1F0991	A1D0593		

Samples Loaded By 6/18/21 Date

Data Processed By 6/18/21 Date Rev'd 6/21/21

Sequence Name: C:\msdchem\1\sequence\215FM.s
Comment:
Operator: kkw
Data Path: C:\msdchem\1\DATA\061821\
Instrument Control Pre-Seq Cmd:
Data Analysis Pre-Seq Cmd:

Instrument Control Post-Seq Cmd:
Data Analysis Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

Sequence Barcode Options
(X) On Mismatch, Inject Anyway
( ) On Mismatch, Don't Inject
( ) Barcode Disabled

Line		Sample Name/Misc Info		
1)	Sample	1	215FM001 8260S	tun1
2)	Sample	1	215FM002 8260S	tun1
3)	Sample	1	215FM003 8260S	tun1
4)	Sample	2	215FM004 8260S	aa66932-cal1
5)	Sample	3	215FM005 8260S	aa66932-cal2
6)	Sample	4	215FM006 8260S	aa66932-cal3
7)	Sample	5	215FM007 8260S	aa66932-cal4
8)	Sample	6	215FM008 8260S	aa66932-cal5
9)	Sample	7	215FM009 8260S	aa66932-cal6
10)	Sample	8	215FM010 8260S	aa66932-cal7
11)	Sample	9	215FM011 8260S	aa66932-cal8
12)	Sample	10	215FM012 8260S	rinse
13)	Sample	11	215FM013 8260S	aa66932-scv1
14)	Sample	12	215FM014 8260S	1F18027-bs1
15)	Sample	13	215FM015 8260S	1F18027-blk1
16)	Sample	14	215FM016 8260S	AE05123-07
17)	Sample	15	215FM017 8260S	AE04936-21RE1@2
18)	Sample	16	215FM018 8260S	AE04936-22RE1@2
19)	Sample	17	215FM019 8260S	AE04936-23RE1
20)	Sample	18	215FM020 8260S	AE04966-06RE1@2
21)	Sample	19	215FM021 8260S	AE04966-07RE1@2
22)	Sample	20	215FM022 8260S	AE04966-08RE1@20
23)	Sample	21	215FM023 8260S	1F18027-MS1
24)	Sample	21	215FM024 8260S	1F18027-MSD1
25)	Sample	22	215FM025 8260S	AA66946-LCV1
26)	Sample	23	215FM026 8260S	1F18022-BS1
27)	Sample	24	215FM027 8260S	1F18022-MS1
28)	Sample	24	215FM028 8260S	1F18022-MSD1
29)	Sample	25	215FM029 8260S	1F18022-BLK1
30)	Sample	26	215FM030 8260S	AA66949-CRL1
31)	Sample	27	215FM031 8260S	AE03776-01
32)	Sample	28	215FM032 8260S	AE03776-02
33)	Sample	29	215FM033 8260S	AE03776-03
34)	Sample	30	215FM034 8260S	AE05210-01
35)	Sample	31	215FM035 8260S	AE05210-02
36)	Sample	32	215FM036 8260S	AE05210-03
37)	Sample	33	215FM037 8260S	AE05210-04
38)	Sample	34	215FM038 8260S	AE05210-05
39)	Sample	35	215FM039 8260S	AE05190-01
40)	Sample	36	215FM040 8260S	AE05190-02
41)	Sample	37	215FM041 8260S	AE05190-03
42)	Sample	38	215FM042 8260S	AE05190-04
43)	Sample	39	215FM043 8260S	AE05190-05

Sequence Name: C:\msdchem\1\sequence\215FM.s

	Line	Type	Vial	DataFile	Method	Sample Name
44)		Sample	40	215FM044	8260S	AE05162-01
45)		Sample	41	215FM045	8260S	AE05162-02
46)		Sample	42	215FM046	8260S	AE05162-03
47)		Sample	43	215FM047	8260S	AE05162-04
48)		Sample	44	215FM048	8260S	AE05162-05

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☒ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

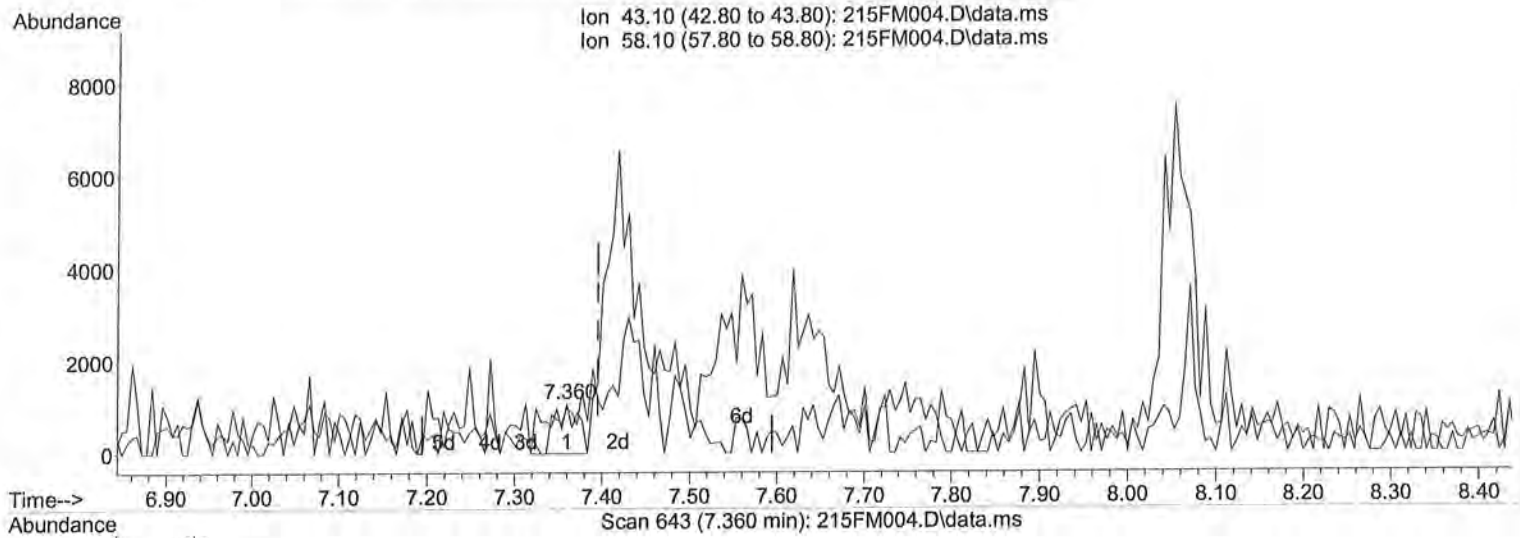
- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

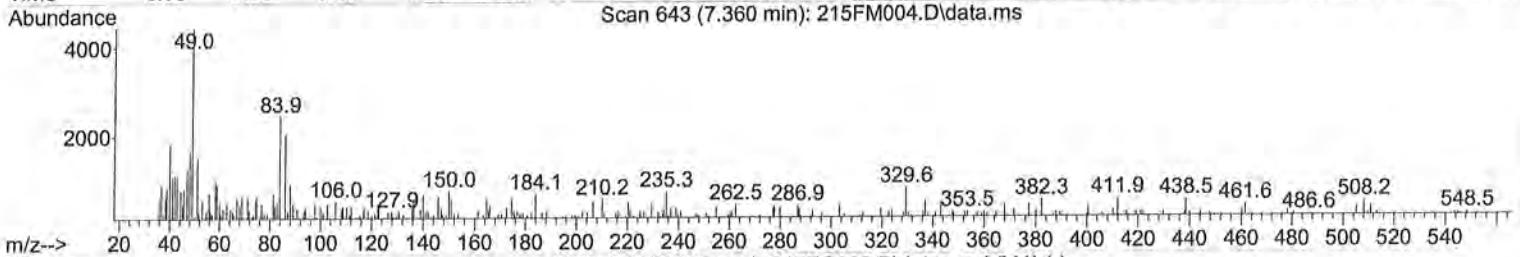
Instrument ID:	OVGCMS5
Sequence/Batch ID:	AA66932
Data File Prefix:	215FM
Date and Time Range of MIs:	06/18/21 0948-0950 06/21/21 0758
Reviewer Print Name:	Karie Gonzalez
Reviewer Signature:	Karie Gonzalez
Date of Review:	6/21/21

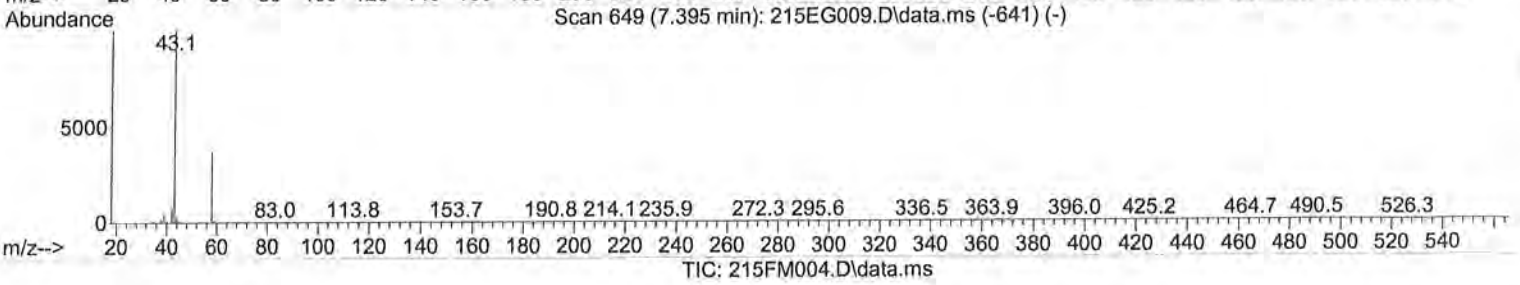
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM004.D\data.ms

(15) Acetone

7.360min (-0.035) 0.68 ug/L

response 2727

Ion	Exp%	Act%
43.10	100.00	100.00
58.10	36.90	191.53#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

X Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

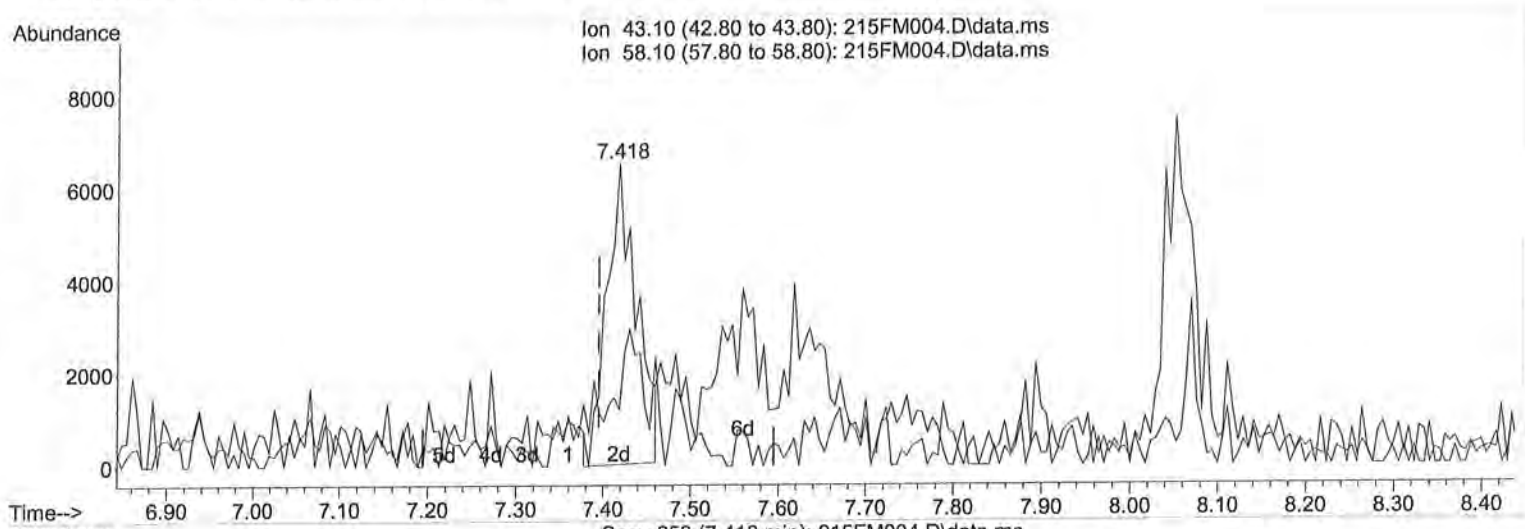
Review by/Date KJ 06/21/21

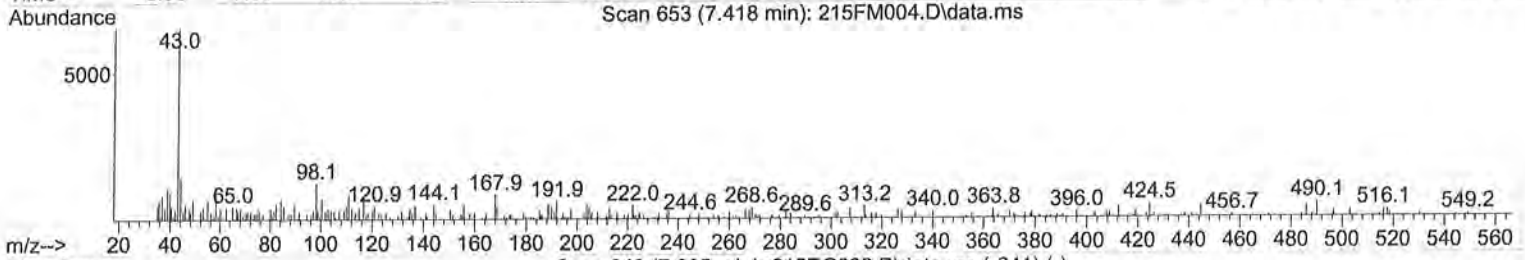
Review by/Date:

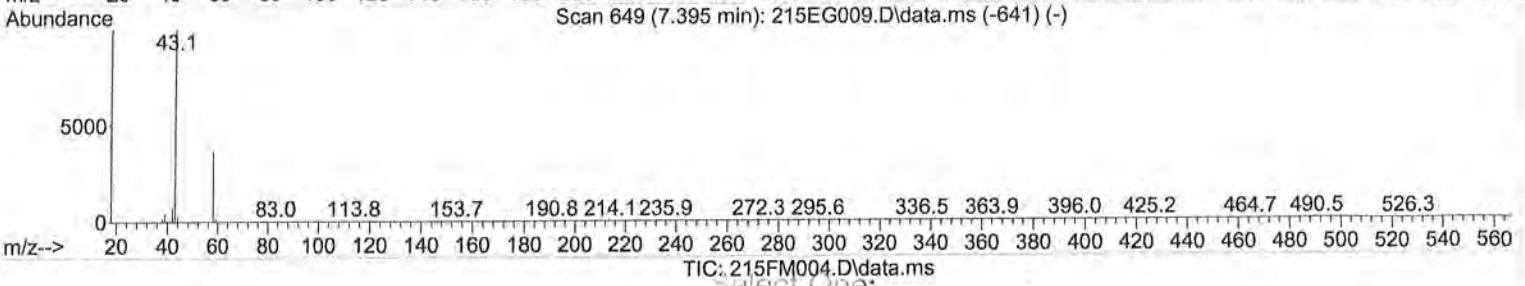
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM004.D\data.ms

(15) Acetone

7.418min (+ 0.024) 3.79 ug/L m

response 15244

Ion	Exp%	Act%
43.10	100.00	100.00
58.10	36.90	34.26
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

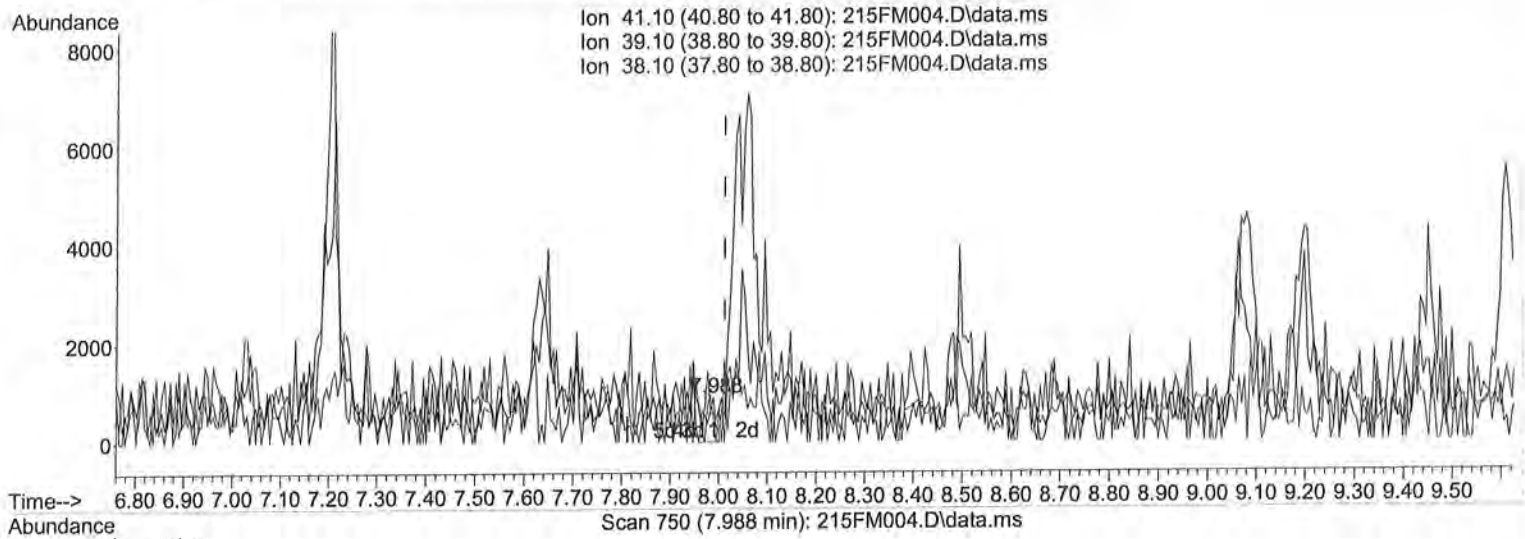
Review by/Date W 06/21/21

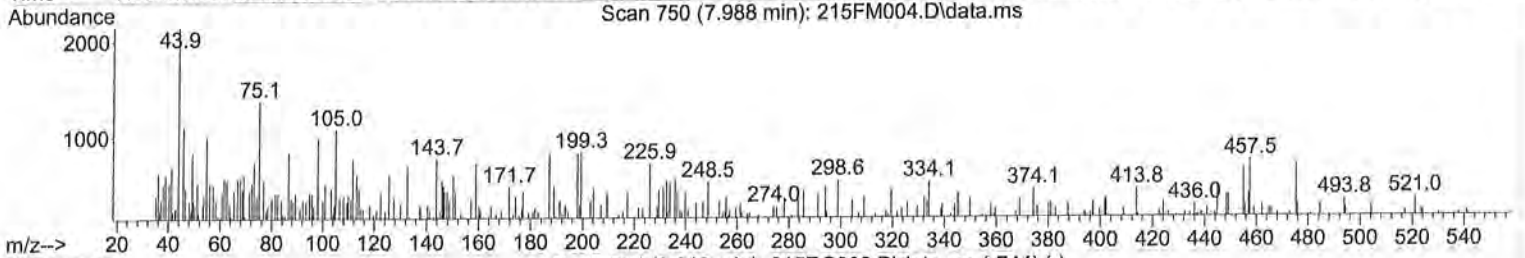
Review by/Date:

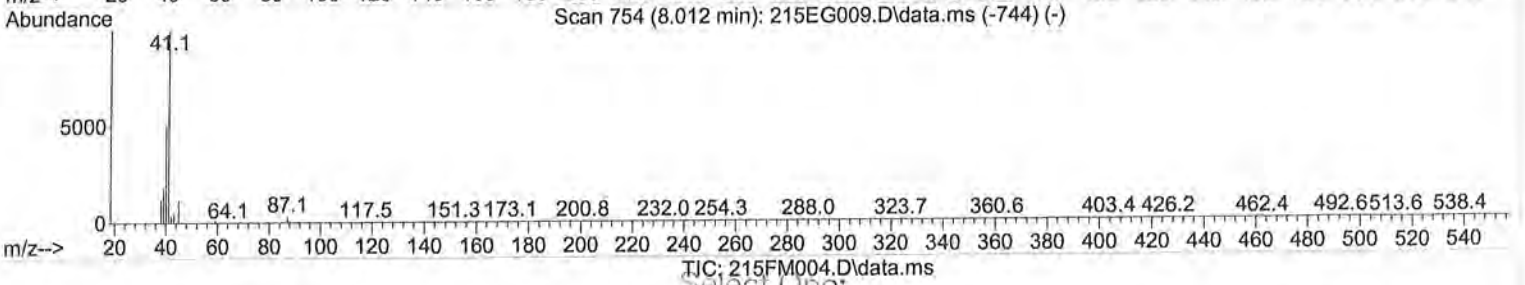
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM004.D\data.ms

(20) Acetonitrile

7.988min (-0.024) 0.44 ug/L

response 1281

Ion	Exp%	Act%
41.10	100.00	100.00
39.10	24.40	147.85#
38.10	10.00	60.42#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

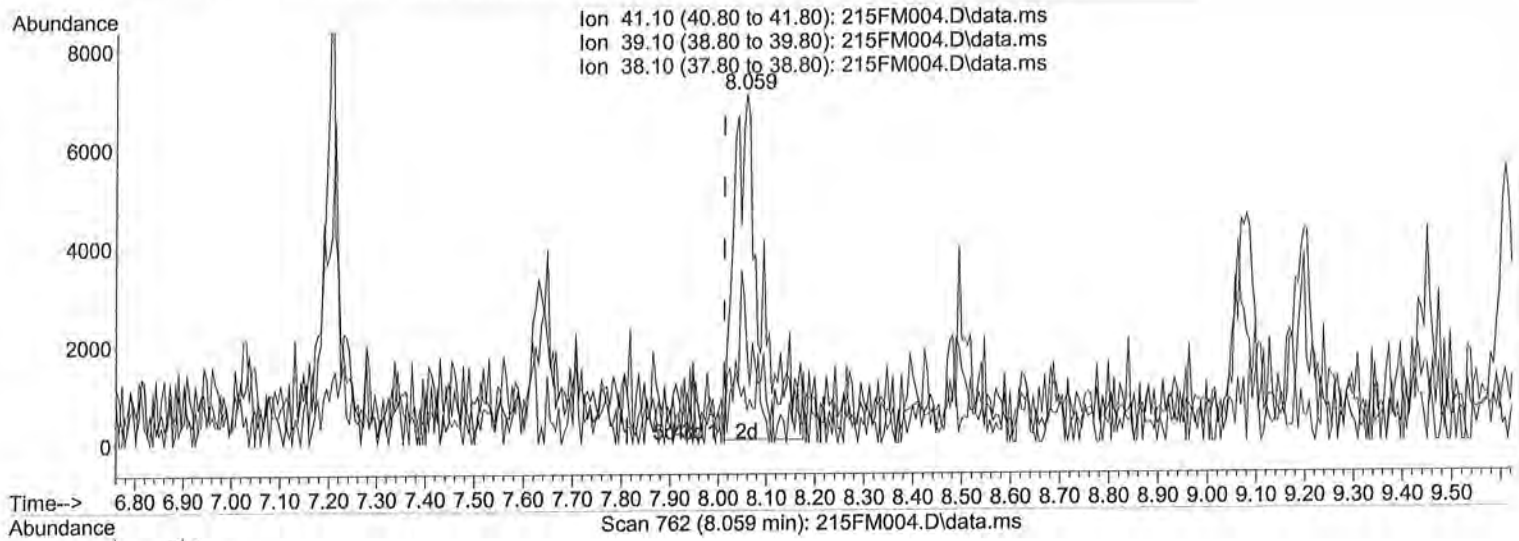
Review by/Date KKW 06/18/21 KKW 06/18/21

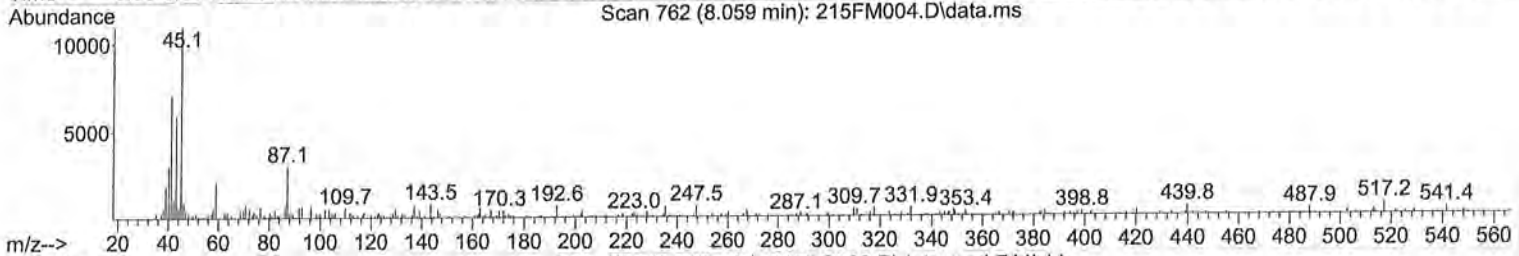
Review by/Date:

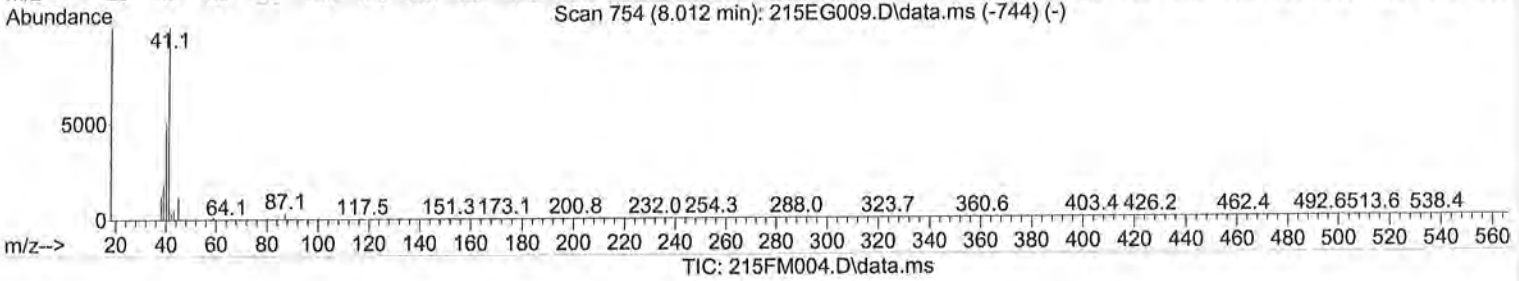
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM004.D\data.ms

(20) Acetonitrile

8.059min (+ 0.047) 9.55 ug/L m

response 27963

Ion	Exp%	Act%
41.10	100.00	100.00
39.10	24.40	6.77#
38.10	10.00	2.77#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Uncorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

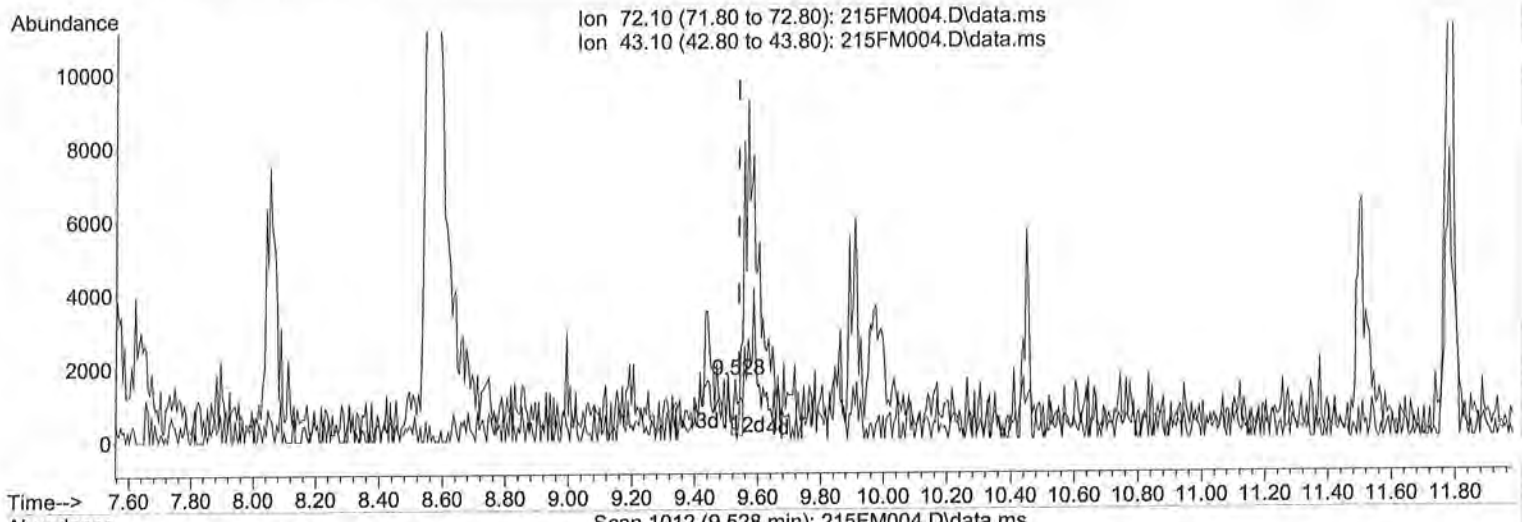
Review by/Date KJ 06/21/21

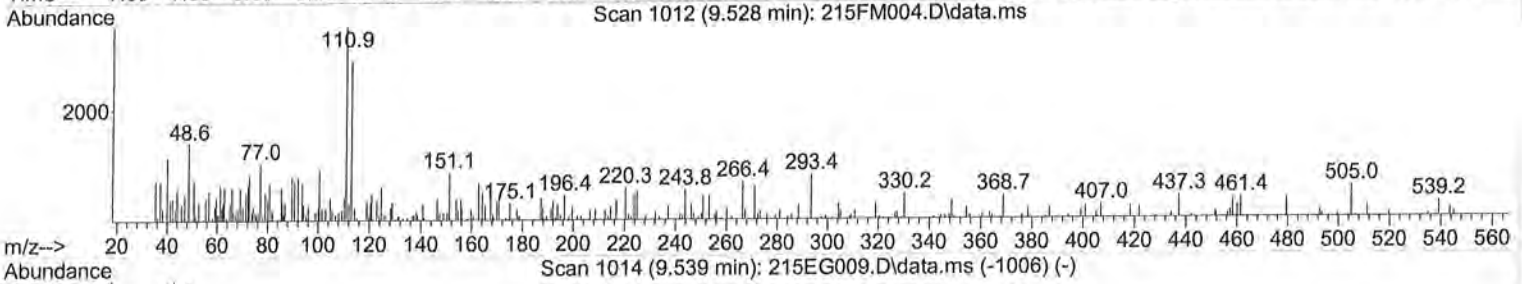
Review by/Date:

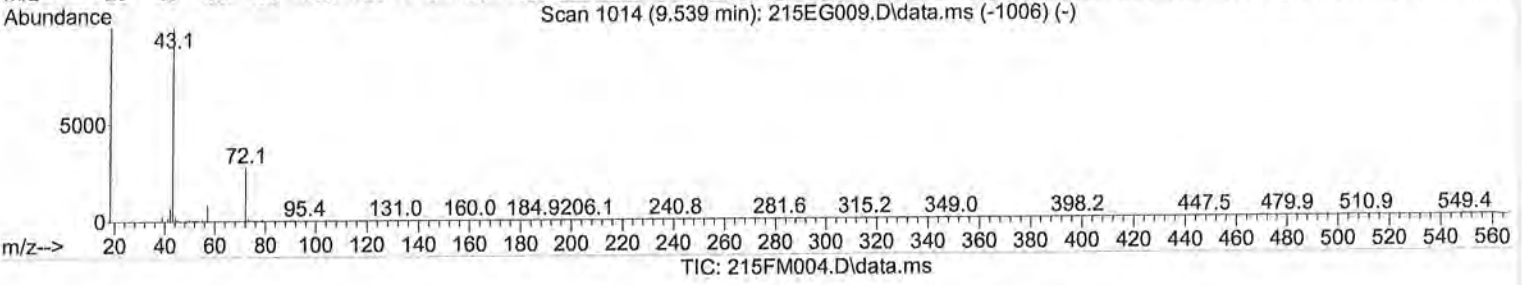
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM004.D\data.ms

(33) 2-Butanone

9.528min (-0.012) 0.95 ug/L

response 2013

Ion	Exp%	Act%
72.10	100.00	100.00
43.10	347.70	63.09#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

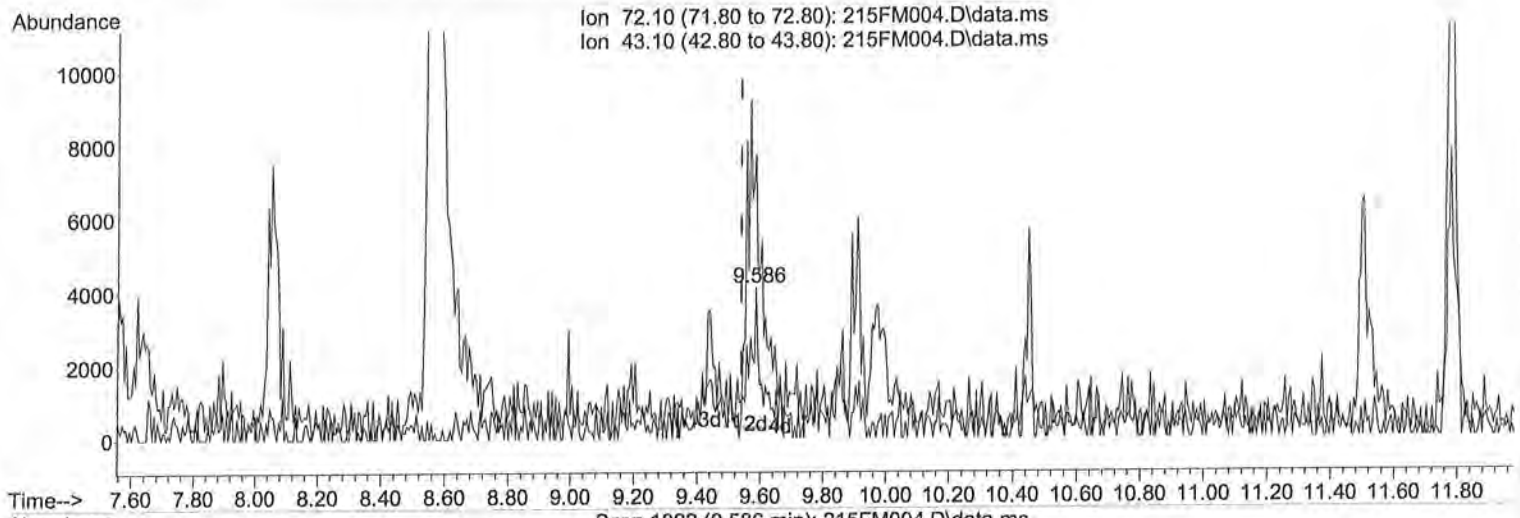
Review by/Date W 6/21/21

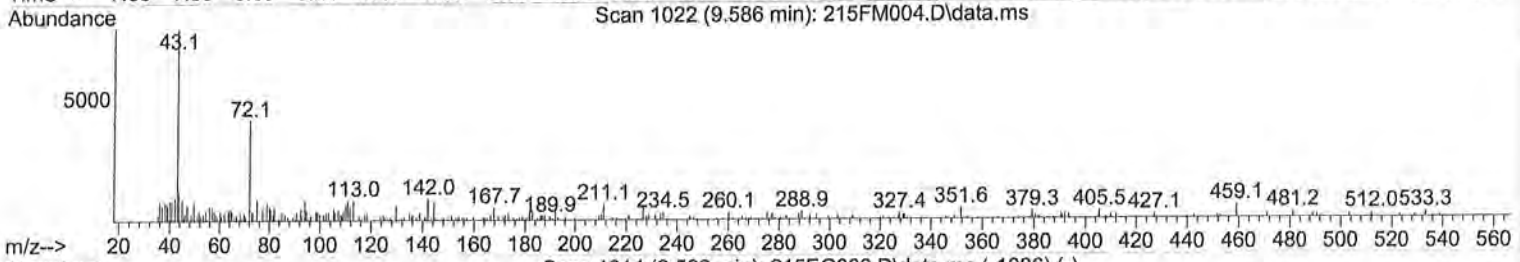
Review by/Date:

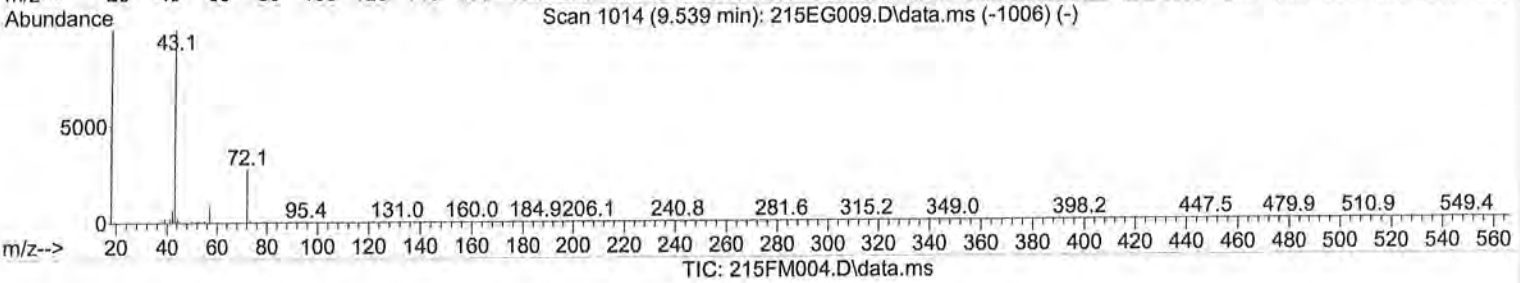
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM004.D\data.ms

(33) 2-Butanone

9.586min (+ 0.047) 4.88 ug/L m

response 10350

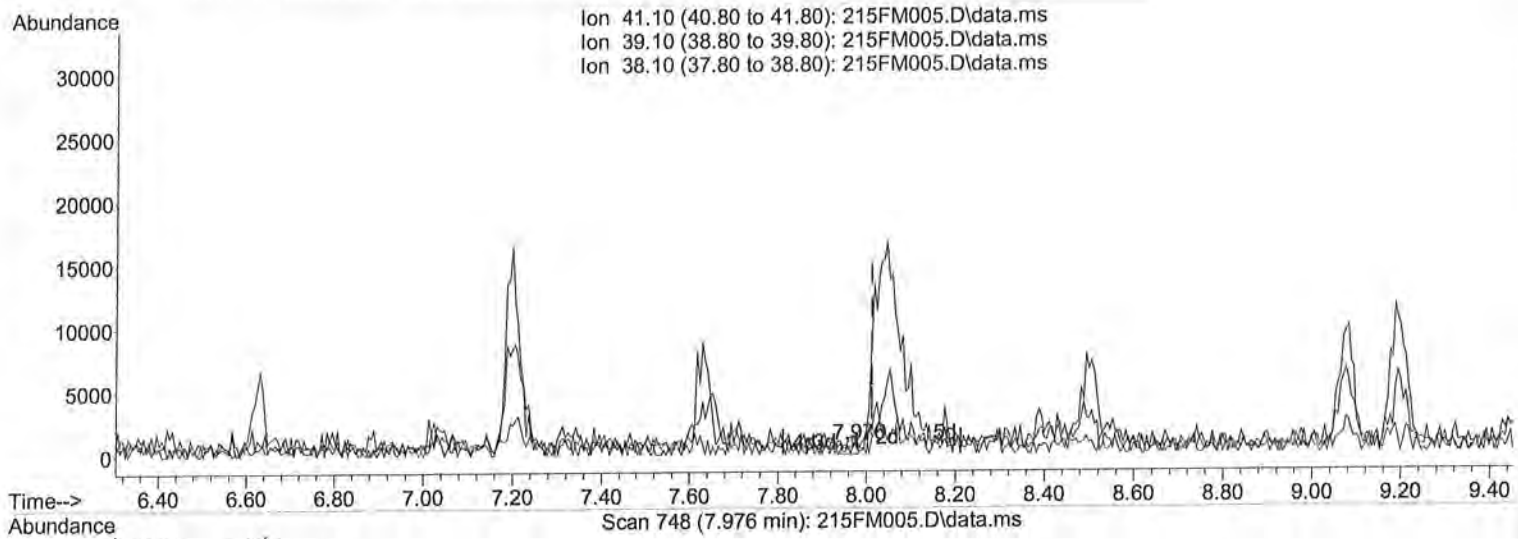
Ion	Exp%	Act%
72.10	100.00	100.00
43.10	347.70	12.27#
0.00	0.00	0.00
0.00	0.00	0.00

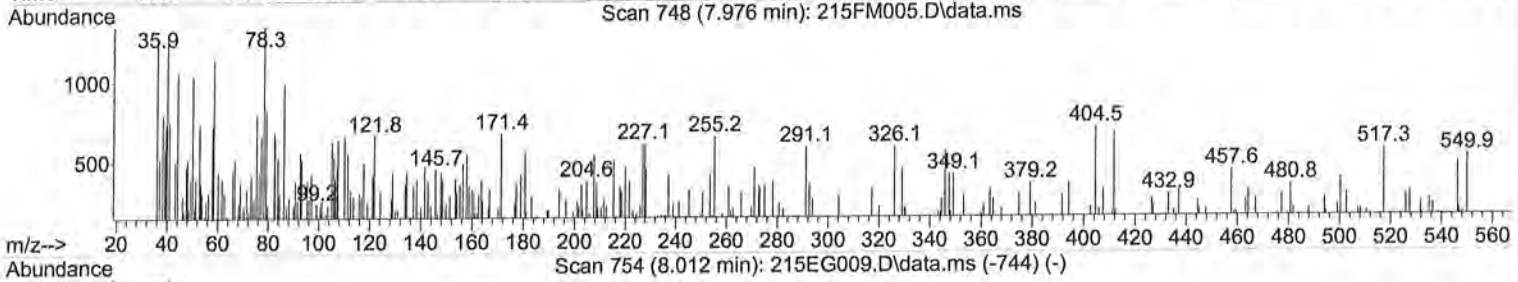
Select One:
[ ] Original Integration [X] Manual Integration
Select reason for manual integration:
[ ] Poor integration (peak tailing, baseline selection)
[X] Incorrect peak selection/Peak not found
[ ] Hump integration
[ ] Baseline drop for split peaks
[ ] ISTD reintegration
[ ] Other:
Review by/Date: W 6/18/21
Review by/Date:

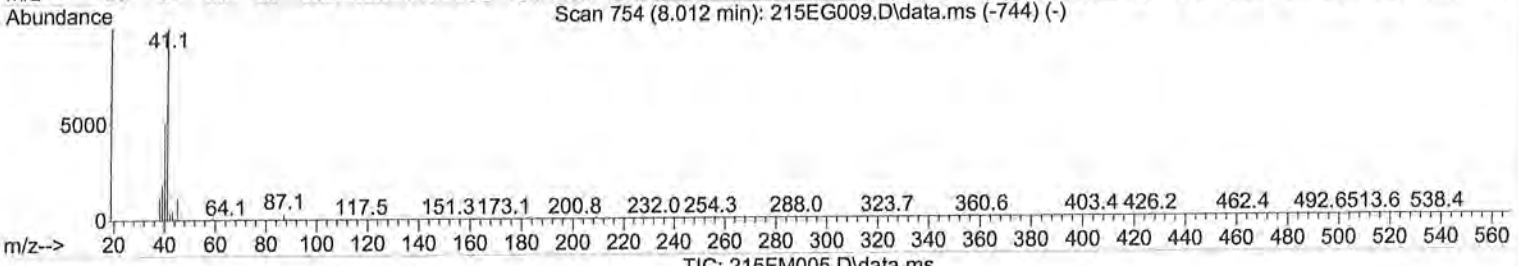
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM005.D
Acq On : 18 Jun 2021 8:32 am
Operator : kkw
Sample : aa66932-cal2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 18 09:50:22 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM005.D\data.ms

(20) Acetonitrile

7.976min (-0.036) 0.51 ug/L

response 1524

Ion	Exp%	Act%
41.10	100.00	100.00
39.10	24.40	142.52#
38.10	10.00	44.29#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

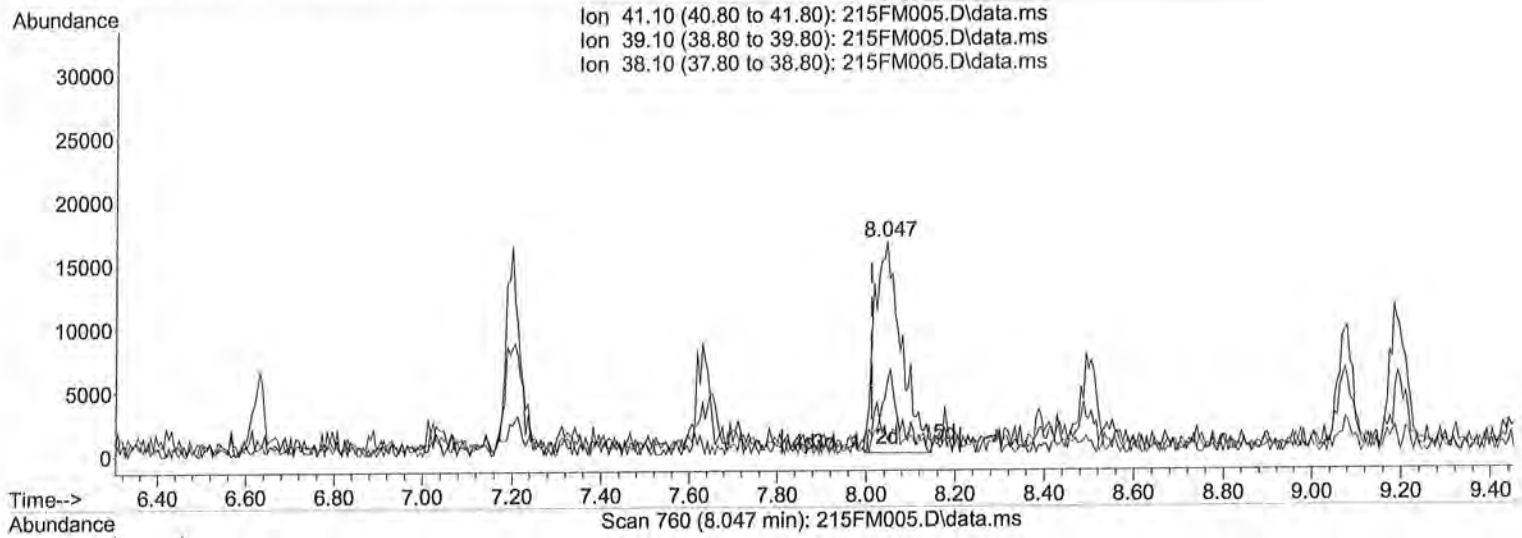
Review by/Date W 05/21

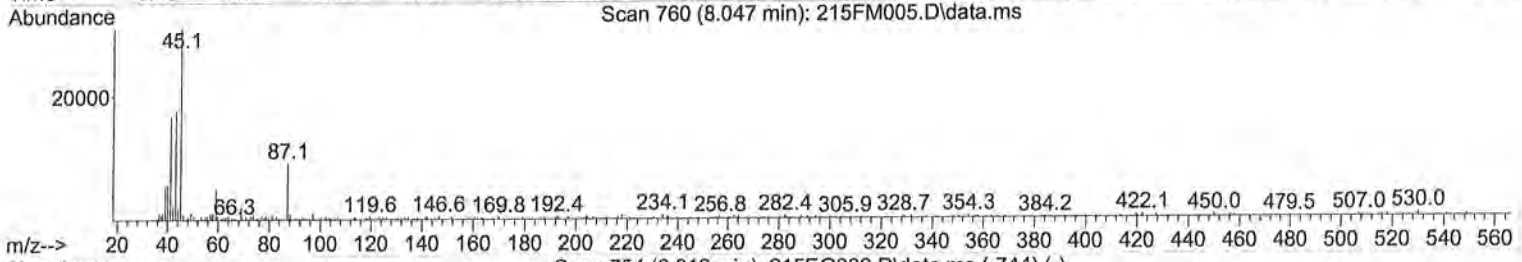
Review by/Date:

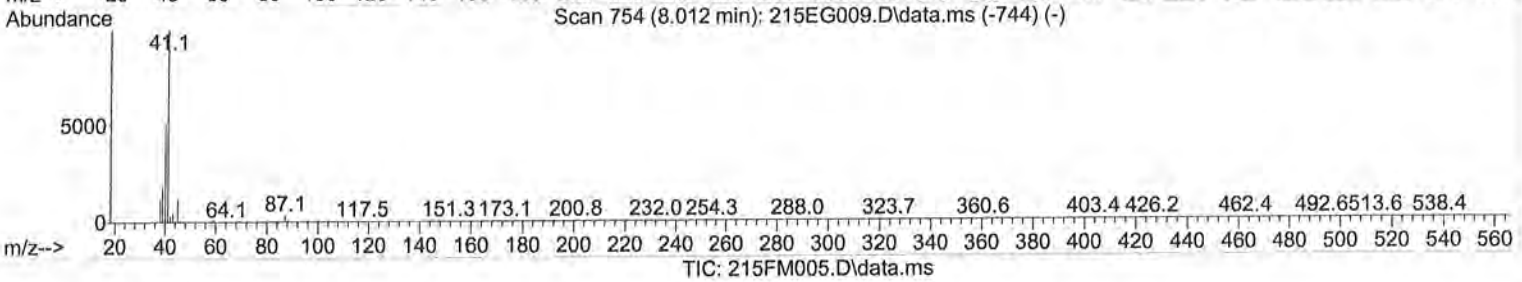
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM005.D
Acq On : 18 Jun 2021 8:32 am
Operator : kkw
Sample : aa66932-cal2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 18 09:50:22 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration







TIC: 215FM005.D\data.ms

(20) Acetonitrile

8.047min (+ 0.035) 23.44 ug/L m

response 69992

Ion	Exp%	Act%
41.10	100.00	100.00
39.10	24.40	3.10#
38.10	10.00	0.96#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

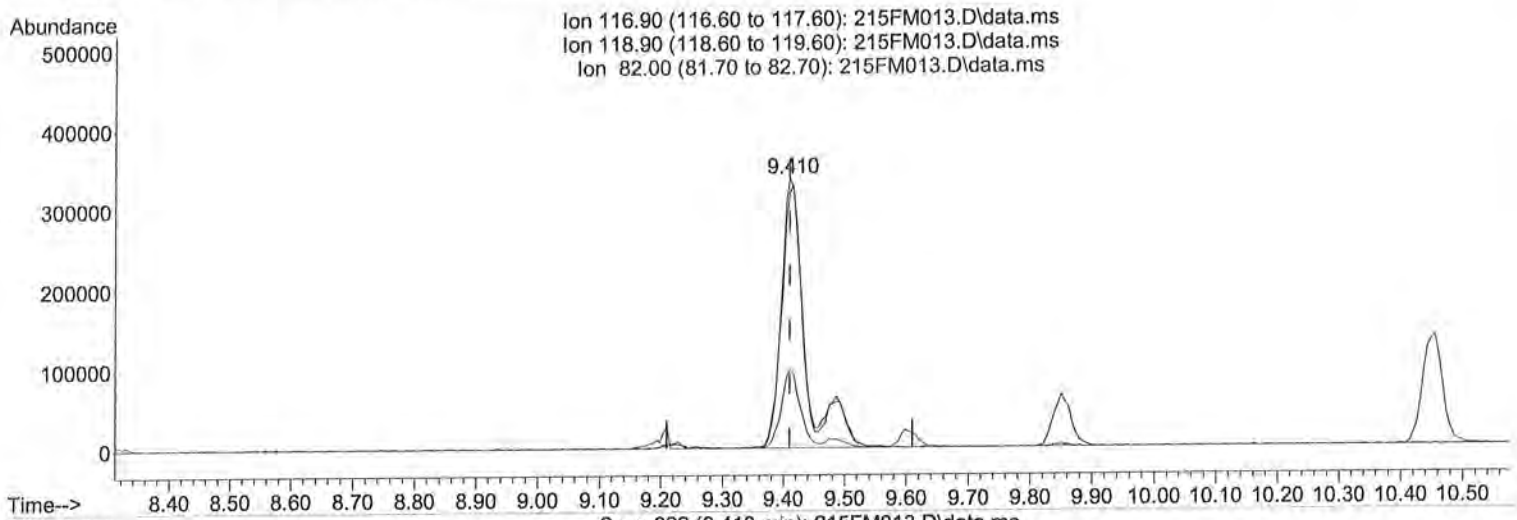
Review by/Date W 06/21/21

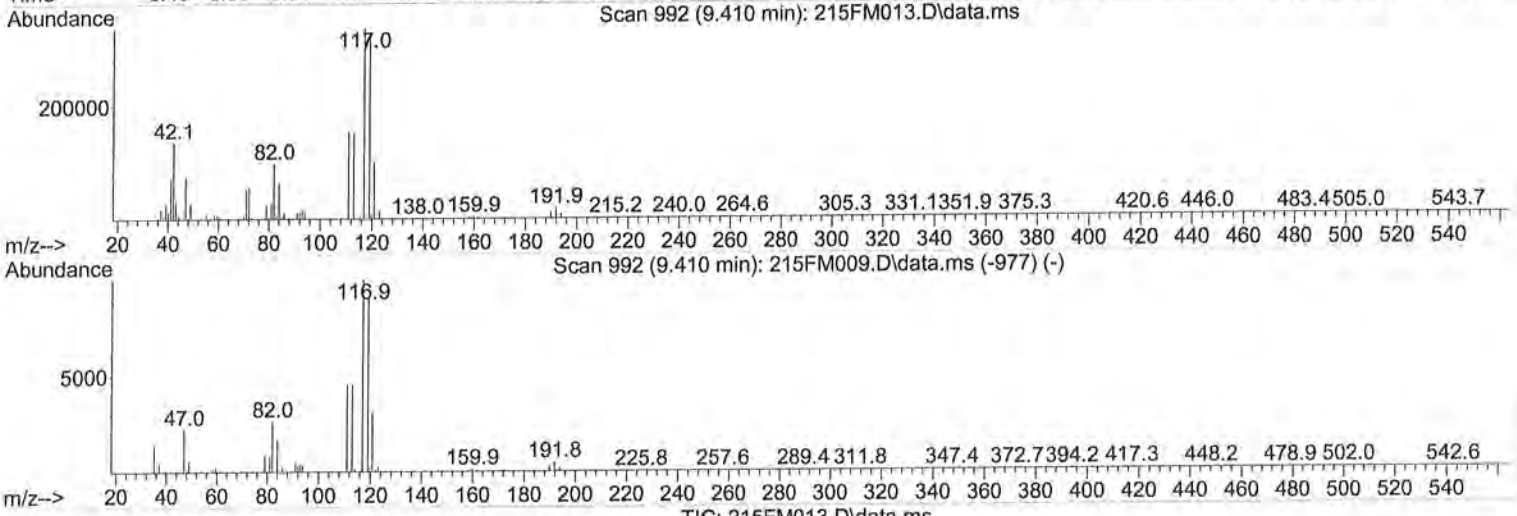
Review by/Date:

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM013.D
Acq On : 18 Jun 2021 12:15 pm
Operator : kkw
Sample : aa66932-scv1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 21 07:55:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Mon Jun 21 07:54:29 2021
Response via : Initial Calibration





TIC: 215FM013.D\data.ms

(40) Carbon Tetrachloride

9.410min (+ 0.000) 65.73 ug/L

response 939082

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	111.60	94.19
82.00	32.10	26.21
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

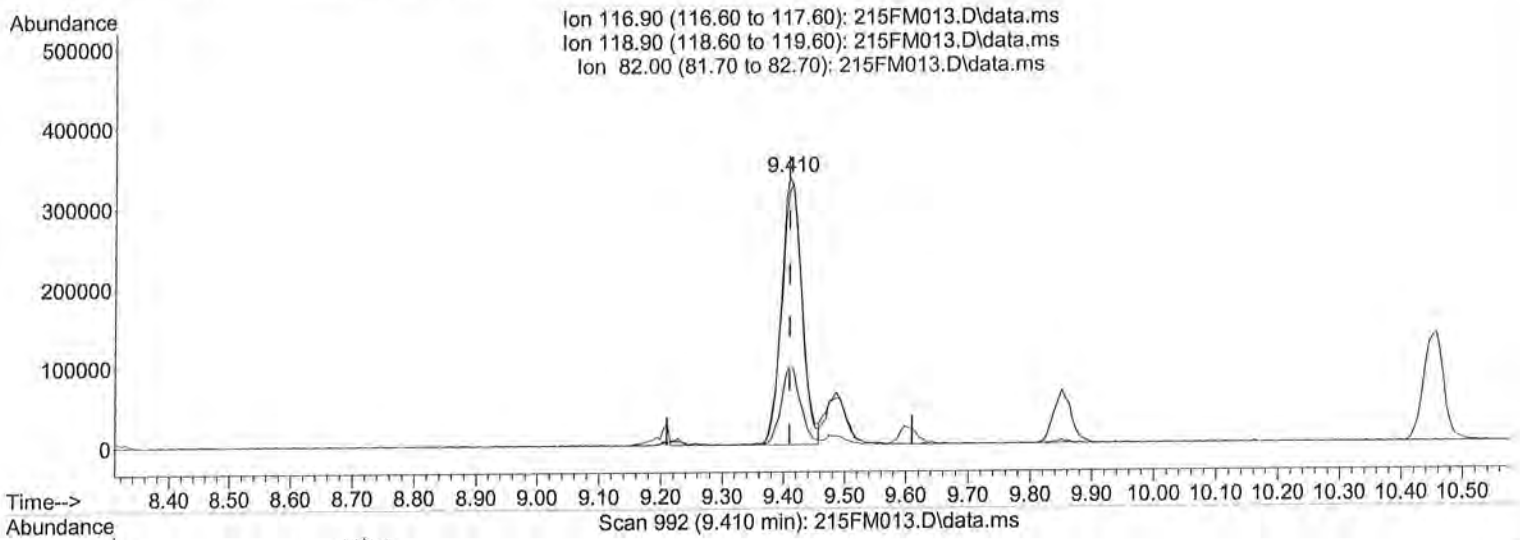
Review by/Date W 06/21/21

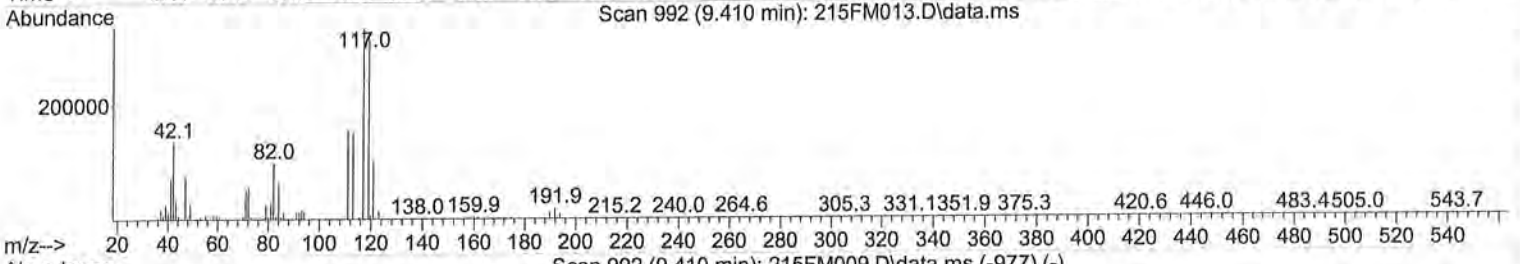
Review by/Date:

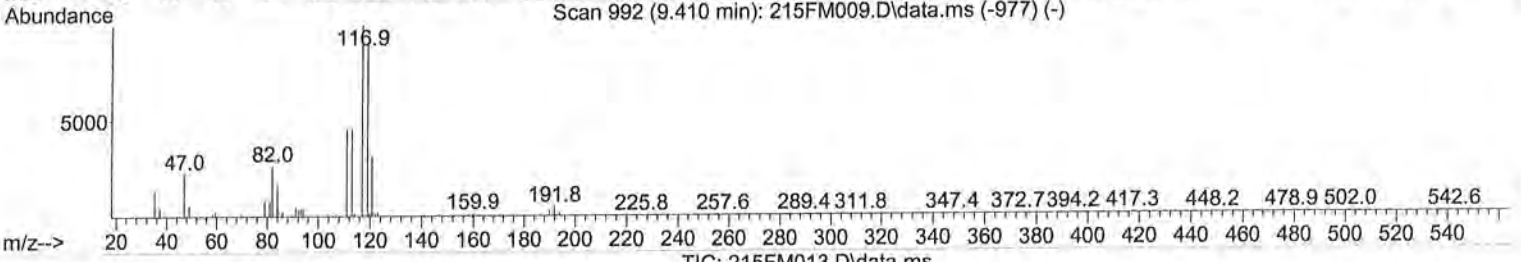
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM013.D
Acq On : 18 Jun 2021 12:15 pm
Operator : kkw
Sample : aa66932-scv1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 21 07:55:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Mon Jun 21 07:54:29 2021
Response via : Initial Calibration







TIC: 215FM013.D\data.ms

(40) Carbon Tetrachloride

9.410min (+ 0.000) 54.98 ug/L m

response 785492

Ion	Exp%	Act%
116.90	100.00	100.00
118.90	111.60	112.60
82.00	32.10	31.33
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date WJ 6/21/21

Review by/Date:

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1201889	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2686237	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1505146	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1176558	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	710792	56.11	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 112.22%				
52) D8-Toluene	11.784	98	3105646	47.11	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 94.22%				
73) Bromofluorobenzene	14.334	95	1312659	50.45	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 100.90%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.975	85	13088	0.91	ug/L	#	78
3) Chloromethane	4.422	50	25464	1.40	ug/L		98
4) Vinyl Chloride	4.586	62	18650	1.28	ug/L	#	37
5) Bromomethane	5.227	94	7774	2.03	ug/L	#	92
6) Chloroethane	5.468	64	12148	2.08	ug/L	#	87
7) Trichlorofluoromethane	5.720	101	18704	1.17	ug/L	#	32
8) Diethyl ether	6.190	59	9025	0.92	ug/L	#	75
9) 1,1-Dichloroethene	6.531	96	10469	1.09	ug/L	#	80
10) Trichlorotrifluoroethane	6.561	151	6269	0.96	ug/L	#	63
11) Acrolein	7.025	56	26803	8.51	ug/L		88
12) Iodomethane	6.784	142	25695	2.11	ug/L	#	87
13) Carbon Disulfide	6.631	76	134623	3.56	ug/L	#	90
14) 3-chloropropene	7.207	41	16650	0.95	ug/L	#	75
15) Acetone	7.418	43	15244m	3.79	ug/L		
16) Methylene Chloride	7.348	84	14197	1.12	ug/L		86
17) Methyl Acetate	7.418	43	20048	1.99	ug/L	#	71
18) t-1,2-Dichloroethene	7.571	96	11646	0.99	ug/L		97
19) Methyl tert-butyl ether	7.630	73	29535	1.00	ug/L	#	83
20) Acetonitrile	8.059	41	27963m	9.55	ug/L		
21) Isopropyl ether	8.053	45	34223	0.91	ug/L		92
22) Chloroprene	8.282	88	7485	0.68	ug/L	#	94
23) 1,1-Dichloroethane	8.323	63	24017	1.16	ug/L	#	86
24) Acrylonitrile	8.405	53	56665	8.93	ug/L	#	95
25) Vinyl Acetate	8.558	43	85554	3.24	ug/L		99
26) c-1,2-Dichloroethene	8.964	96	14211	1.08	ug/L	#	79
27) 2,2-Dichloropropane	9.081	77	17235	1.12	ug/L		94
28) Bromochloromethane	9.205	128	5671	1.34	ug/L		85
29) Cyclohexane	9.199	56	22375	1.00	ug/L		95
30) Chloroform	9.228	83	22798	1.08	ug/L		96
32) Dibromofluoromethane	9.428	113	711007	56.12	ug/L	#	90
33) 2-Butanone	9.586	72	10350m	4.88	ug/L		
34) 1,1,1-Trichloroethane	9.492	97	14723	0.94	ug/L	#	66
35) 1,1-Dichloropropene	9.610	75	20902	1.25	ug/L		91
36) Propionitrile	9.910	54	24811	9.55	ug/L	#	51
37) Methacrylonitrile	9.915	41	86360	8.48	ug/L		96
38) Isobutyl Alcohol	9.974	43	15505	12.64	ug/L	#	53
40) Carbon Tetrachloride	9.428	117	15785	1.27	ug/L	#	60
41) Benzene	9.886	78	54847	0.97	ug/L		98
42) 1,2-Dichloroethane	10.092	62	20033	1.22	ug/L	#	87
43) Trichloroethene	10.462	130	10723	0.83	ug/L	#	1
44) Methyl cyclohexane	10.450	83	55623	2.01	ug/L	#	70
45) Dibromomethane	10.908	93	10260	1.17	ug/L	#	81
46) 1,2-Dichloropropane	10.991	63	17821	1.10	ug/L	#	89
47) Bromodichloromethane	11.020	83	14957	0.93	ug/L	#	88
48) Methyl Methacrylate	11.114	69	8962	0.71	ug/L		85
49) 1,4-Dioxane	11.208	88	1959	11.48	ug/L	#	18
50) 2-Chloroethyl vinyl ether	11.502	63	24607	2.51	ug/L	#	90
51) C-1,3-Dichloropropene	11.614	75	20370	0.84	ug/L	#	89

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

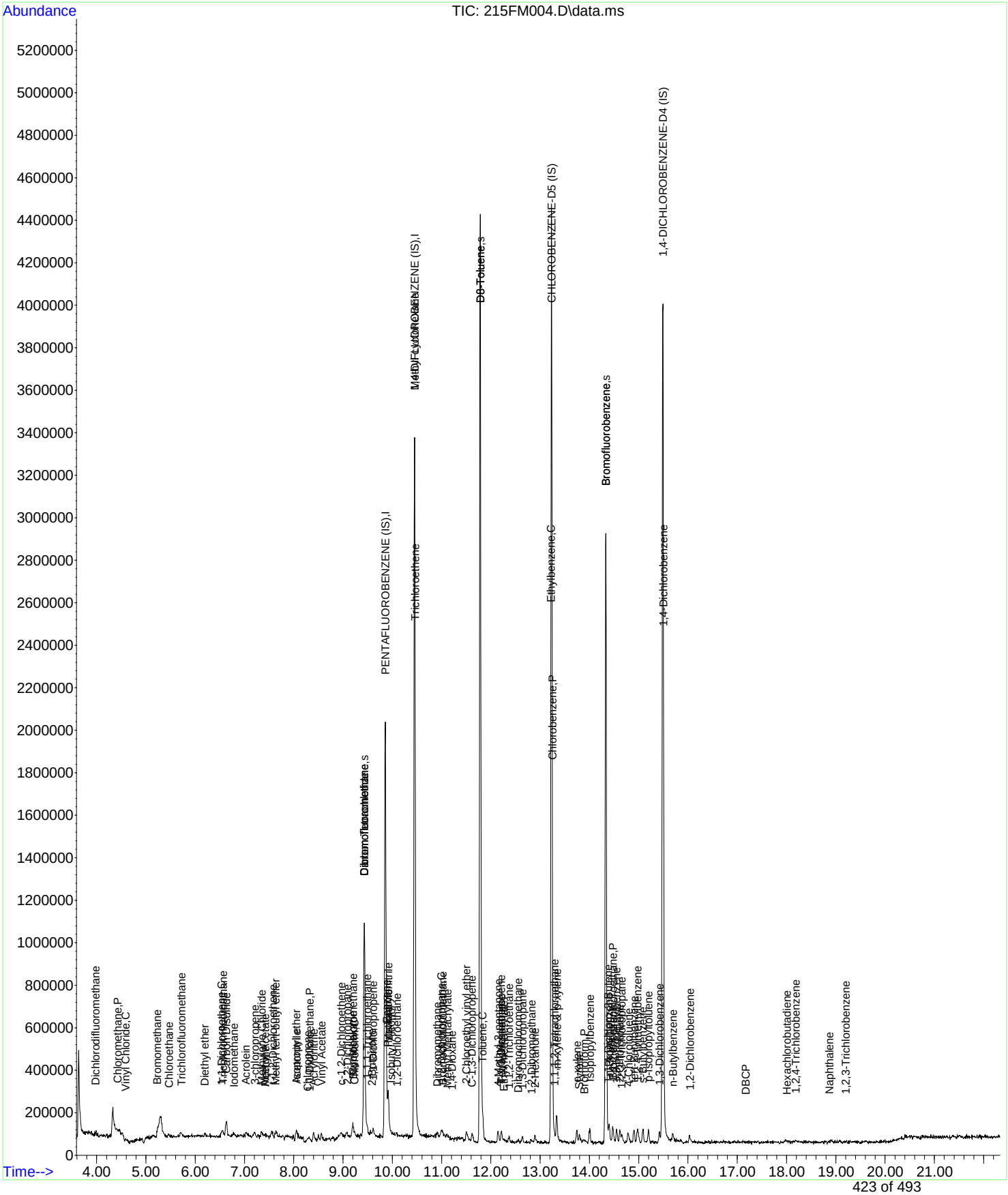
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3098200	47.00	ug/L		96
54) 4-Methyl-2-pentanone	12.154	100	10407	3.66	ug/L	#	65
56) Toluene	11.831	92	36578	1.07	ug/L		86
57) T-1,3-Dichloropropene	12.207	75	15418	0.86	ug/L		95
58) Tetrachloroethene	12.213	164	7897	0.84	ug/L	#	81
59) Ethyl methacrylate	12.266	69	9442	0.45	ug/L	#	94
60) 1,1,2-Trichloroethane	12.371	97	11468	0.93	ug/L	#	72
61) Dibromochloromethane	12.554	129	5884	0.59	ug/L	#	77
62) 1,3-Dichloropropane	12.642	76	19550	0.85	ug/L	#	92
63) 1,2-Dibromoethane	12.824	107	11656	0.92	ug/L	#	72
64) 2-Hexanone	12.894	43	28902	2.63	ug/L	#	88
65) Ethylbenzene	13.218	106	17809	0.86	ug/L	#	83
66) Chlorobenzene	13.247	112	34362	0.94	ug/L	#	85
67) 1,1,1,2-Tetrachloroethane	13.294	131	8869	0.83	ug/L	#	87
68) m-xylene & p-xylene	13.341	106	48950	1.91	ug/L		85
69) o-xylene	13.746	106	21167	0.81	ug/L		94
70) Styrene	13.787	104	23556	0.56	ug/L	#	83
71) Bromoform	13.893	173	3911	0.72	ug/L	#	73
72) Isopropylbenzene	14.011	105	51309	0.78	ug/L	#	95
74) Bromofluorobenzene	14.334	95	1313882	50.49	ug/L	#	76
75) n-Propylbenzene	14.399	91	68531	0.82	ug/L		94
76) 1,1,2,2-Tetrachloroethane	14.475	83	17220	0.81	ug/L	#	89
77) 1,2,3-Trichloropropane	14.651	61	4423	0.82	ug/L	#	80
78) T-1,4-Dichloro-2-Butene	14.381	53	5458m	0.78	ug/L		
80) Bromobenzene	14.475	156	9545	0.80	ug/L	#	59
81) 1,2,4-Trimethylbenzene	14.974	105	41636	0.84	ug/L	#	91
82) 2-Chlorotoluene	14.616	91	40735	0.92	ug/L		94
83) 4-Chlorotoluene	14.792	91	40333	0.91	ug/L		98
84) tert-Butylbenzene	14.904	119	35468	0.85	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	41886	0.84	ug/L	#	95
86) p-Isopropyltoluene	15.198	119	37494	0.66	ug/L	#	92
87) s-Butylbenzene	15.080	105	54823	0.92	ug/L		95
88) 1,3-Dichlorobenzene	15.421	146	22323	0.89	ug/L		99
89) 1,4-Dichlorobenzene	15.503	146	26167	1.01	ug/L	#	1
90) n-Butylbenzene	15.691	91	39375	0.71	ug/L	#	85
91) 1,2-Dichlorobenzene	16.038	146	19638	0.85	ug/L		98
92) DBCP	17.172	157	890	0.33	ug/L		90
93) Hexachlorobutadiene	18.006	225	663	0.20	ug/L	#	1
94) 1,2,4-Trichlorobenzene	18.188	180	1643	0.25	ug/L	#	33
95) Naphthalene	18.870	128	7080	0.40	ug/L	#	92
96) 1,2,3-Trichlorobenzene	19.199	180	1743	0.57	ug/L	#	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM004.D
Acq On : 18 Jun 2021 8:05 am
Operator : kkw
Sample : aa66932-cal1
Misc :
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 18 08:40:28 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM005.D
Acq On : 18 Jun 2021 8:32 am
Operator : kkw
Sample : aa66932-cal2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 18 09:50:22 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1226065	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2753498	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1619681	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.491	152	1248669	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	790017	61.13	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 122.26%				
52) D8-Toluene	11.784	98	3652972	54.06	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 108.12%				
73) Bromofluorobenzene	14.328	95	1504237	53.72	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 107.44%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	20711	1.41	ug/L	#	93
3) Chloromethane	4.410	50	32896	1.77	ug/L		97
4) Vinyl Chloride	4.586	62	26313	1.78	ug/L	#	1
5) Bromomethane	5.227	94	15964	4.06	ug/L	#	92
6) Chloroethane	5.462	64	16696	2.80	ug/L		96
7) Trichlorofluoromethane	5.708	101	30382	1.86	ug/L	#	95
8) Diethyl ether	6.178	59	28917	2.88	ug/L		96
9) 1,1-Dichloroethene	6.537	96	27880	2.84	ug/L		98
10) Trichlorotrifluoroethane	6.572	151	17841	2.67	ug/L		94
11) Acrolein	7.030	56	63840	19.88	ug/L		93
12) Iodomethane	6.778	142	59716	4.80	ug/L	#	96
13) Carbon Disulfide	6.631	76	332343	8.62	ug/L		99
14) 3-chloropropene	7.201	41	37310	2.08	ug/L		92
15) Acetone	7.406	43	44906	10.96	ug/L		90
16) Methylene Chloride	7.342	84	35382	2.74	ug/L		98
17) Methyl Acetate	7.547	43	25546	2.48	ug/L	#	81
18) t-1,2-Dichloroethene	7.553	96	31090	2.58	ug/L		98
19) Methyl tert-butyl ether	7.636	73	71986	2.38	ug/L		96
20) Acetonitrile	8.047	41	69992m	23.44	ug/L		
21) Isopropyl ether	8.053	45	88770	2.32	ug/L		96
22) Chloroprene	8.276	88	20632	1.83	ug/L		97
23) 1,1-Dichloroethane	8.317	63	58711	2.78	ug/L		93
24) Acrylonitrile	8.394	53	128785	19.89	ug/L	#	97
25) Vinyl Acetate	8.558	43	269446	10.00	ug/L		96
26) c-1,2-Dichloroethene	8.946	96	33482	2.51	ug/L		93
27) 2,2-Dichloropropane	9.075	77	40179	2.55	ug/L	#	95
28) Bromochloromethane	9.181	128	14081	3.27	ug/L		86
29) Cyclohexane	9.193	56	56806	2.48	ug/L		99
30) Chloroform	9.222	83	59826	2.79	ug/L		91
32) Dibromofluoromethane	9.428	113	790017	61.13	ug/L	#	89
33) 2-Butanone	9.557	72	22636	10.45	ug/L		93
34) 1,1,1-Trichloroethane	9.486	97	41521	2.59	ug/L		96
35) 1,1-Dichloropropene	9.604	75	44111	2.58	ug/L	#	84
36) Propionitrile	9.909	54	59592	22.49	ug/L	#	81
37) Methacrylonitrile	9.915	41	238410	22.96	ug/L		96
38) Isobutyl Alcohol	9.909	43	42490	33.96	ug/L	#	54
40) Carbon Tetrachloride	9.416	117	30040	2.35	ug/L	#	84
41) Benzene	9.886	78	147112	2.54	ug/L		97
42) 1,2-Dichloroethane	10.092	62	41413	2.47	ug/L		98
43) Trichloroethene	10.456	130	29464	2.23	ug/L	#	1
44) Methyl cyclohexane	10.456	83	98691	3.48	ug/L	#	75
45) Dibromomethane	10.902	93	18756	2.09	ug/L		94
46) 1,2-Dichloropropane	10.991	63	37937	2.28	ug/L		92
47) Bromodichloromethane	11.014	83	34787	2.11	ug/L	#	89
48) Methyl Methacrylate	11.090	69	19813	1.53	ug/L		85
49) 1,4-Dioxane	11.231	88	7880	45.03	ug/L		92
50) 2-Chloroethyl vinyl ether	11.502	63	73114	7.27	ug/L	#	92
51) C-1,3-Dichloropropene	11.619	75	53521	2.14	ug/L	#	88

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM005.D
Acq On : 18 Jun 2021 8:32 am
Operator : kkw
Sample : aa66932-cal2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 18 09:50:22 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

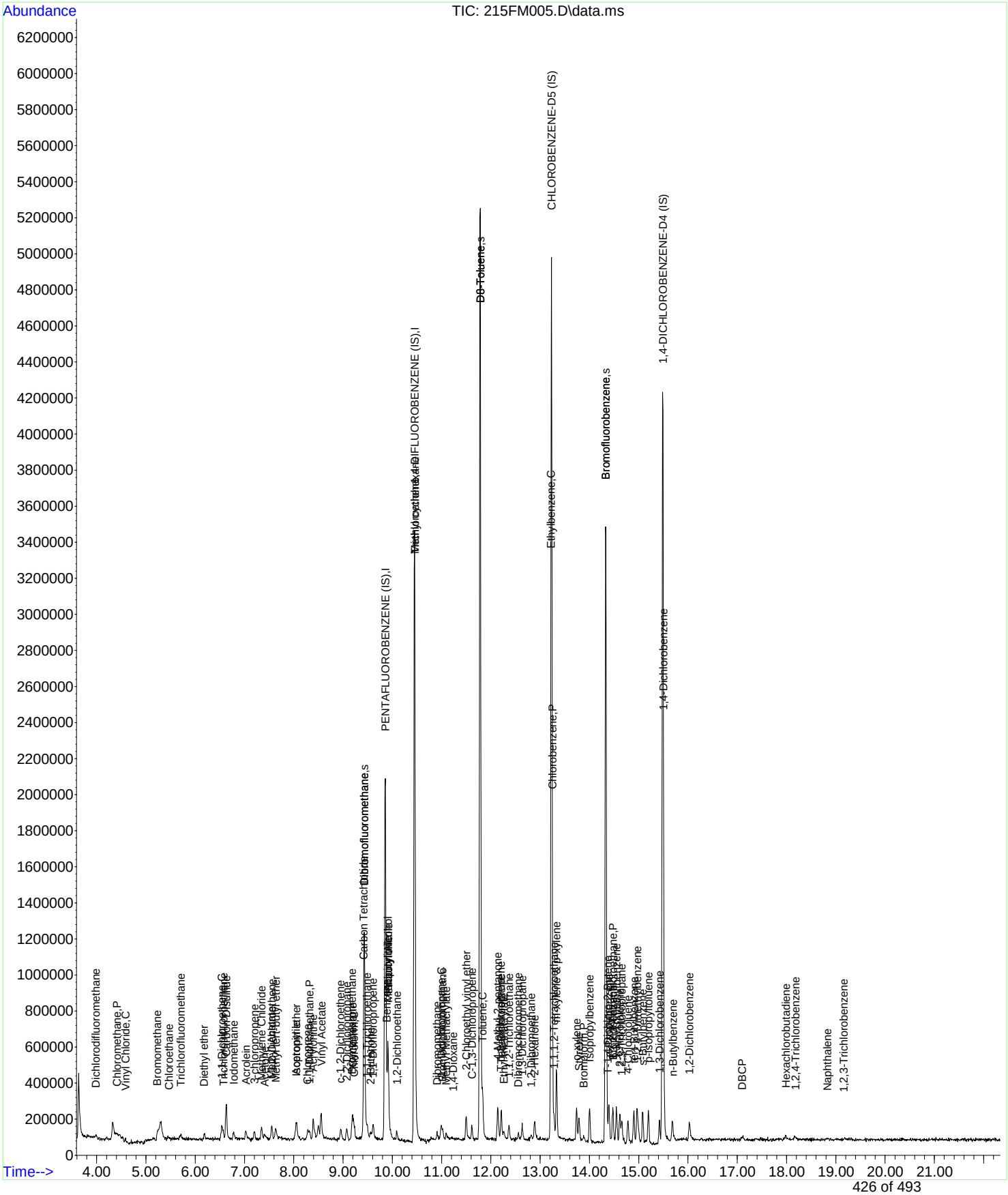
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.784	98	3650908	54.03	ug/L		95
54) 4-Methyl-2-pentanone	12.136	100	23940	8.22	ug/L		96
56) Toluene	11.831	92	90002	2.45	ug/L		90
57) T-1,3-Dichloropropene	12.201	75	42905	2.22	ug/L	#	82
58) Tetrachloroethene	12.207	164	22734	2.26	ug/L		94
59) Ethyl methacrylate	12.266	69	36140	1.59	ug/L		98
60) 1,1,2-Trichloroethane	12.365	97	30725	2.32	ug/L		93
61) Dibromochloromethane	12.553	129	19817	1.84	ug/L	#	87
62) 1,3-Dichloropropane	12.636	76	52835	2.14	ug/L	#	95
63) 1,2-Dibromoethane	12.818	107	26901	1.97	ug/L	#	92
64) 2-Hexanone	12.883	43	96320	8.15	ug/L		91
65) Ethylbenzene	13.217	106	45167	2.04	ug/L	#	85
66) Chlorobenzene	13.247	112	84240	2.15	ug/L		93
67) 1,1,1,2-Tetrachloroethane	13.282	131	24035	2.10	ug/L	#	86
68) m-xylene & p-xylene	13.329	106	119219	4.33	ug/L		99
69) o-xylene	13.740	106	55218	1.96	ug/L		97
70) Styrene	13.787	104	77940	1.71	ug/L	#	91
71) Bromoform	13.881	173	9766	1.66	ug/L	#	72
72) Isopropylbenzene	13.999	105	145912	2.06	ug/L		98
74) Bromofluorobenzene	14.328	95	1504564	53.73	ug/L	#	80
75) n-Propylbenzene	14.393	91	195277	2.16	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.475	83	48517	2.11	ug/L	#	97
77) 1,2,3-Trichloropropane	14.651	61	10589	1.81	ug/L	#	59
78) T-1,4-Dichloro-2-Butene	14.369	53	12126	1.61	ug/L	#	27
80) Bromobenzene	14.475	156	28658	2.26	ug/L	#	82
81) 1,2,4-Trimethylbenzene	14.968	105	117439	2.24	ug/L		96
82) 2-Chlorotoluene	14.616	91	118998	2.54	ug/L		93
83) 4-Chlorotoluene	14.780	91	104463	2.23	ug/L		96
84) tert-Butylbenzene	14.904	119	101030	2.27	ug/L		96
85) 1,3,5-Trimethylbenzene	14.545	105	121842	2.31	ug/L		96
86) p-Isopropyltoluene	15.197	119	113438	1.89	ug/L	#	91
87) s-Butylbenzene	15.080	105	145770	2.30	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	59042	2.22	ug/L		98
89) 1,4-Dichlorobenzene	15.503	146	58421	2.13	ug/L	#	1
90) n-Butylbenzene	15.691	91	113515	1.93	ug/L		97
91) 1,2-Dichlorobenzene	16.026	146	55503	2.26	ug/L	#	90
92) DBCP	17.095	157	6168	2.13	ug/L		96
93) Hexachlorobutadiene	17.988	225	6852	1.98	ug/L	#	68
94) 1,2,4-Trichlorobenzene	18.182	180	7411	1.06	ug/L	#	55
95) Naphthalene	18.829	128	18402	0.99	ug/L	#	84
96) 1,2,3-Trichlorobenzene	19.158	180	1698	0.53	ug/L	#	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM005.D
Acq On : 18 Jun 2021 8:32 am
Operator : kkw
Sample : aa66932-cal2
Misc :
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 18 09:50:22 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM006.D
Acq On : 18 Jun 2021 9:00 am
Operator : kkw
Sample : aa66932-cal3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 18 09:51:46 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1047198	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2419754	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1545028	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.486	152	1320874	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	760296	68.88	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 137.76%#				
52) D8-Toluene	11.778	98	3556545	59.90	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 119.80%				
73) Bromofluorobenzene	14.328	95	1596271	59.76	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 119.52%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	61935	4.93	ug/L	#	93
3) Chloromethane	4.410	50	90523	5.67	ug/L		94
4) Vinyl Chloride	4.586	62	72492	5.73	ug/L	#	66
5) Bromomethane	5.233	94	34362	10.02	ug/L		99
6) Chloroethane	5.456	64	50548	9.92	ug/L		96
7) Trichlorofluoromethane	5.703	101	86500	6.21	ug/L	#	98
8) Diethyl ether	6.179	59	65817	7.68	ug/L		92
9) 1,1-Dichloroethene	6.537	96	61285	7.30	ug/L		86
10) Trichlorotrifluoroethane	6.555	151	39487	6.92	ug/L		92
11) Acrolein	7.025	56	163918	59.76	ug/L		99
12) Iodomethane	6.784	142	175341	16.50	ug/L		98
13) Carbon Disulfide	6.625	76	895869	27.31	ug/L		98
14) 3-chloropropene	7.195	41	101509	6.63	ug/L		94
15) Acetone	7.407	43	117259	33.50	ug/L		98
16) Methylene Chloride	7.342	84	79027	7.17	ug/L		90
17) Methyl Acetate	7.530	43	64450	7.26	ug/L	#	95
18) t-1,2-Dichloroethene	7.548	96	78290	7.62	ug/L		96
19) Methyl tert-butyl ether	7.630	73	177918	6.90	ug/L	#	91
20) Acetonitrile	8.024	41	163006	63.90	ug/L		98
21) Isopropyl ether	8.053	45	228181	7.00	ug/L		96
22) Chloroprene	8.282	88	57674	5.98	ug/L		94
23) 1,1-Dichloroethane	8.317	63	130702	7.25	ug/L		95
24) Acrylonitrile	8.388	53	290245	52.47	ug/L		100
25) Vinyl Acetate	8.547	43	642675	27.94	ug/L		100
26) c-1,2-Dichloroethene	8.952	96	66039	5.78	ug/L		92
27) 2,2-Dichloropropane	9.075	77	81316	6.05	ug/L	#	91
28) Bromochloromethane	9.187	128	27460	7.46	ug/L		94
29) Cyclohexane	9.199	56	118236	6.05	ug/L		95
30) Chloroform	9.222	83	124399	6.78	ug/L		94
32) Dibromofluoromethane	9.428	113	760296	68.88	ug/L	#	90
33) 2-Butanone	9.551	72	53367	28.85	ug/L		92
34) 1,1,1-Trichloroethane	9.492	97	86858	6.35	ug/L		94
35) 1,1-Dichloropropene	9.610	75	96357	6.59	ug/L		99
36) Propionitrile	9.904	54	134736	59.53	ug/L		90
37) Methacrylonitrile	9.910	41	520530	58.69	ug/L		100
38) Isobutyl Alcohol	9.963	43	48521	45.40	ug/L	#	54
40) Carbon Tetrachloride	9.416	117	59358	5.25	ug/L	#	84
41) Benzene	9.880	78	309830	6.10	ug/L		96
42) 1,2-Dichloroethane	10.092	62	85706	5.82	ug/L		95
43) Trichloroethene	10.450	130	59471	5.13	ug/L	#	9
44) Methyl cyclohexane	10.444	83	151866	6.09	ug/L		90
45) Dibromomethane	10.903	93	37804	4.78	ug/L		88
46) 1,2-Dichloropropane	10.991	63	80955	5.54	ug/L		99
47) Bromodichloromethane	11.026	83	79355	5.44	ug/L		95
48) Methyl Methacrylate	11.085	69	50080	4.40	ug/L		92
49) 1,4-Dioxane	11.191	88	12290	79.92	ug/L	#	53
50) 2-Chloroethyl vinyl ether	11.490	63	204286	23.11	ug/L	#	97
51) C-1,3-Dichloropropene	11.608	75	117673	5.30	ug/L		92

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM006.D
Acq On : 18 Jun 2021 9:00 am
Operator : kkw
Sample : aa66932-cal3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 18 09:51:46 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

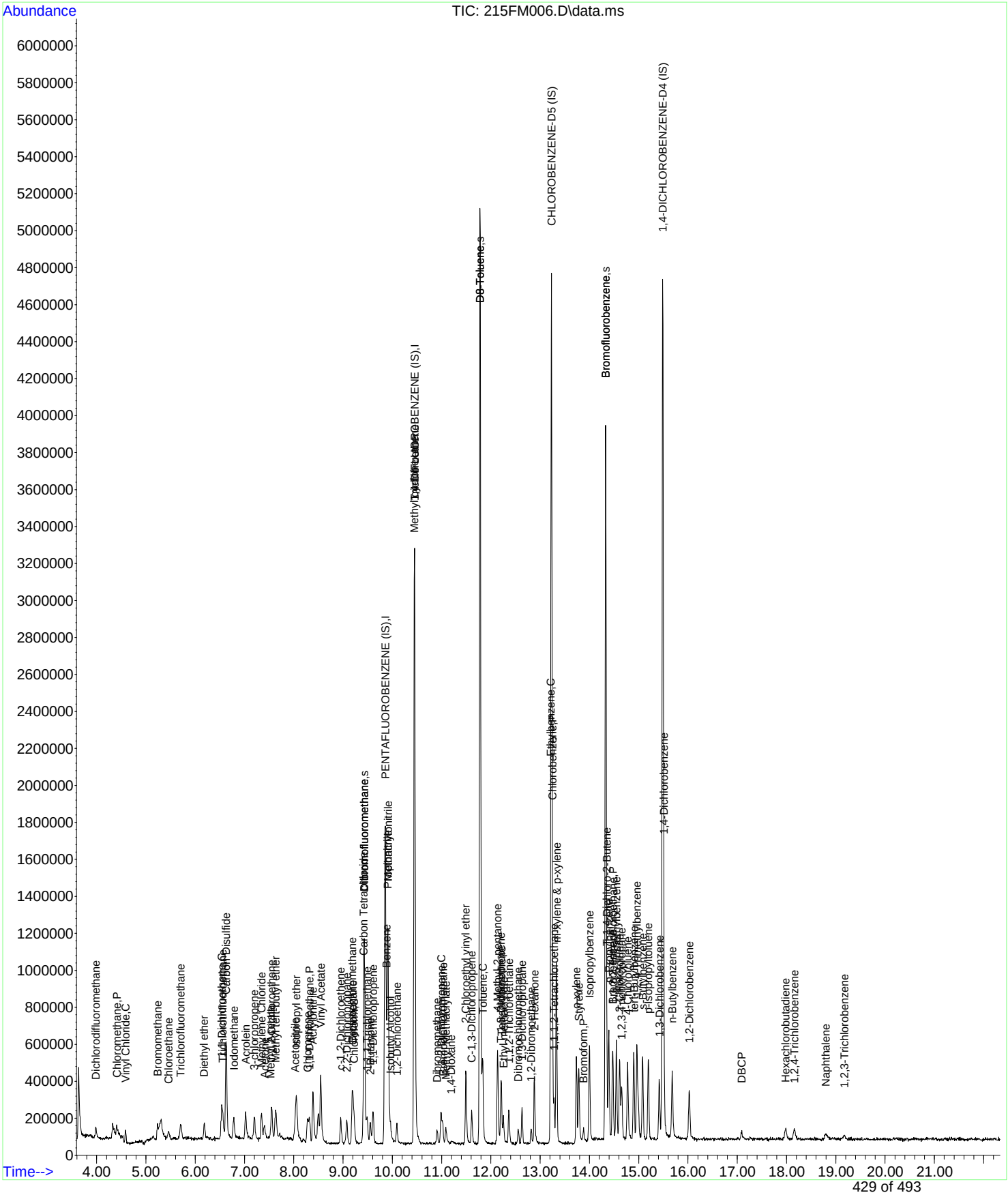
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3550703	59.80	ug/L		95
54) 4-Methyl-2-pentanone	12.131	100	55703	21.72	ug/L		91
56) Toluene	11.837	92	190861	5.44	ug/L		99
57) T-1,3-Dichloropropene	12.201	75	99725	5.40	ug/L		95
58) Tetrachloroethene	12.213	164	47385	4.94	ug/L		92
59) Ethyl methacrylate	12.254	69	84587	3.91	ug/L		96
60) 1,1,2-Trichloroethane	12.366	97	66041	5.22	ug/L		91
61) Dibromochloromethane	12.554	129	46275	4.48	ug/L	#	96
62) 1,3-Dichloropropane	12.630	76	118485	5.02	ug/L		95
63) 1,2-Dibromoethane	12.818	107	63951	4.90	ug/L	#	97
64) 2-Hexanone	12.883	43	254110	22.53	ug/L		100
65) Ethylbenzene	13.212	106	107966	5.10	ug/L	#	92
66) Chlorobenzene	13.247	112	188940	5.06	ug/L		93
67) 1,1,1,2-Tetrachloroethane	13.282	131	51398	4.68	ug/L		92
68) m-xylene & p-xylene	13.335	106	289132	11.00	ug/L		97
69) o-xylene	13.735	106	143437	5.34	ug/L		99
70) Styrene	13.782	104	226490	5.21	ug/L		97
71) Bromoform	13.876	173	21689	3.82	ug/L	#	67
72) Isopropylbenzene	13.999	105	373186	5.52	ug/L		97
74) Bromofluorobenzene	14.328	95	1596271	59.76	ug/L	#	82
75) n-Propylbenzene	14.393	91	481924	5.60	ug/L		97
76) 1,1,2,2-Tetrachloroethane	14.475	83	121607	5.56	ug/L		98
77) 1,2,3-Trichloropropane	14.651	61	35191	6.26	ug/L	#	90
78) T-1,4-Dichloro-2-Butene	14.352	53	33578	4.68	ug/L	#	1
80) Bromobenzene	14.469	156	73468	5.47	ug/L		87
81) 1,2,4-Trimethylbenzene	14.963	105	315484	5.69	ug/L		99
82) 2-Chlorotoluene	14.610	91	277788	5.60	ug/L	#	97
83) 4-Chlorotoluene	14.775	91	285041	5.75	ug/L		99
84) tert-Butylbenzene	14.904	119	249895	5.31	ug/L		97
85) 1,3,5-Trimethylbenzene	14.545	105	309597	5.56	ug/L		99
86) p-Isopropyltoluene	15.192	119	301672	4.75	ug/L		99
87) s-Butylbenzene	15.080	105	362754	5.42	ug/L		99
88) 1,3-Dichlorobenzene	15.421	146	146081	5.19	ug/L		96
89) 1,4-Dichlorobenzene	15.509	146	162863	5.61	ug/L	#	1
90) n-Butylbenzene	15.679	91	279037	4.49	ug/L		99
91) 1,2-Dichlorobenzene	16.026	146	137432	5.28	ug/L		98
92) DBCP	17.090	157	12664	4.12	ug/L		98
93) Hexachlorobutadiene	17.977	225	12997	3.54	ug/L	#	72
94) 1,2,4-Trichlorobenzene	18.159	180	26850	3.62	ug/L	#	84
95) Naphthalene	18.794	128	57797	2.91	ug/L	#	79
96) 1,2,3-Trichlorobenzene	19.175	180	14302	4.17	ug/L	#	62

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM006.D
Acq On : 18 Jun 2021 9:00 am
Operator : kkw
Sample : aa66932-cal3
Misc :
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 18 09:51:46 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM007.D
Acq On : 18 Jun 2021 9:28 am
Operator : kkw
Sample : aa66932-cal4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 18 09:52:17 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1235637	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.450	114	2720919	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1709586	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1365508	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	752565	57.78	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 115.56%				
52) D8-Toluene	11.778	98	3385429	50.70	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 101.40%				
73) Bromofluorobenzene	14.328	95	1442507	48.81	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 97.62%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	121827	8.21	ug/L		98
3) Chloromethane	4.410	50	178033	9.38	ug/L		97
4) Vinyl Chloride	4.586	62	160638	10.77	ug/L		93
5) Bromomethane	5.227	94	54156	13.24	ug/L		94
6) Chloroethane	5.462	64	84051	13.98	ug/L		97
7) Trichlorofluoromethane	5.702	101	186133	11.32	ug/L		97
8) Diethyl ether	6.184	59	116071	11.49	ug/L		96
9) 1,1-Dichloroethene	6.531	96	121851	12.30	ug/L		86
10) Trichlorotrifluoroethane	6.560	151	76339	11.34	ug/L		93
11) Acrolein	7.019	56	301887	93.27	ug/L		97
12) Iodomethane	6.778	142	432218	34.46	ug/L		98
13) Carbon Disulfide	6.625	76	1823678	47.29	ug/L		98
14) 3-chloropropene	7.201	41	199304	11.03	ug/L		92
15) Acetone	7.395	43	237338	57.47	ug/L		100
16) Methylene Chloride	7.342	84	172555	13.27	ug/L		91
17) Methyl Acetate	7.524	43	121114	11.45	ug/L	#	91
18) t-1,2-Dichloroethene	7.553	96	140149	11.56	ug/L		92
19) Methyl tert-butyl ether	7.630	73	369299	12.14	ug/L		97
20) Acetonitrile	8.023	41	338616	112.50	ug/L		98
21) Isopropyl ether	8.053	45	461755	12.00	ug/L		98
22) Chloroprene	8.276	88	117678	10.34	ug/L		90
23) 1,1-Dichloroethane	8.311	63	282498	13.28	ug/L		99
24) Acrylonitrile	8.388	53	591099	90.57	ug/L		99
25) Vinyl Acetate	8.540	43	1551165	57.14	ug/L		99
26) c-1,2-Dichloroethene	8.952	96	148415	11.02	ug/L		90
27) 2,2-Dichloropropane	9.075	77	198257	12.51	ug/L		98
28) Bromochloromethane	9.187	128	64168	14.78	ug/L		98
29) Cyclohexane	9.193	56	265821	11.53	ug/L		98
30) Chloroform	9.222	83	257926	11.91	ug/L	#	93
32) Dibromofluoromethane	9.428	113	752565	57.78	ug/L	#	91
33) 2-Butanone	9.545	72	113849	52.16	ug/L		97
34) 1,1,1-Trichloroethane	9.480	97	208684	12.93	ug/L		96
35) 1,1-Dichloropropene	9.610	75	215540	12.49	ug/L		96
36) Propionitrile	9.898	54	301294	112.83	ug/L		94
37) Methacrylonitrile	9.909	41	1228878	117.42	ug/L		98
38) Isobutyl Alcohol	9.904	43	263215	208.72	ug/L	#	67
40) Carbon Tetrachloride	9.416	117	133703	10.38	ug/L	#	85
41) Benzene	9.880	78	655782	11.48	ug/L		100
42) 1,2-Dichloroethane	10.086	62	195914	11.82	ug/L		99
43) Trichloroethene	10.456	130	140187	10.75	ug/L	#	62
44) Methyl cyclohexane	10.456	83	307695	10.97	ug/L		95
45) Dibromomethane	10.902	93	98012	11.03	ug/L	#	85
46) 1,2-Dichloropropane	10.985	63	180087	10.96	ug/L		93
47) Bromodichloromethane	11.020	83	170547	10.28	ug/L		95
48) Methyl Methacrylate	11.085	69	108165	8.45	ug/L		99
49) 1,4-Dioxane	11.196	88	26438	152.89	ug/L	#	65
50) 2-Chloroethyl vinyl ether	11.490	63	468112	47.10	ug/L	#	93
51) C-1,3-Dichloropropene	11.613	75	262628	10.40	ug/L		93

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM007.D
Acq On : 18 Jun 2021 9:28 am
Operator : kkw
Sample : aa66932-cal4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 18 09:52:17 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

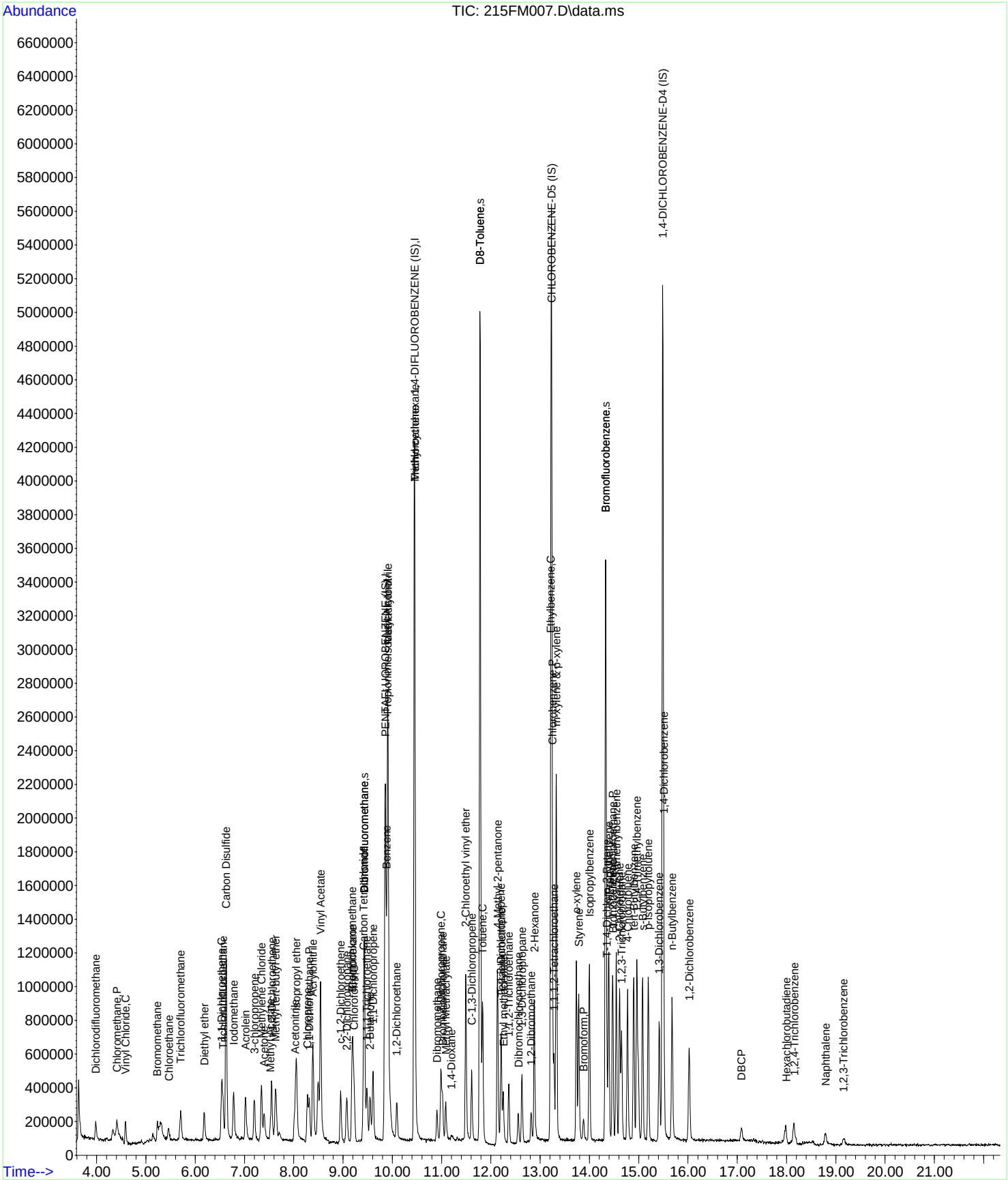
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3385429	50.70	ug/L		96
54) 4-Methyl-2-pentanone	12.136	100	119171	41.26	ug/L		98
56) Toluene	11.831	92	387473	9.97	ug/L		97
57) T-1,3-Dichloropropene	12.201	75	188853	9.24	ug/L	#	94
58) Tetrachloroethene	12.213	164	84246	7.93	ug/L		86
59) Ethyl methacrylate	12.254	69	185862	7.76	ug/L		98
60) 1,1,2-Trichloroethane	12.360	97	133088	9.51	ug/L		95
61) Dibromochloromethane	12.559	129	104875	9.05	ug/L		97
62) 1,3-Dichloropropane	12.630	76	263488	10.09	ug/L		97
63) 1,2-Dibromoethane	12.818	107	140793	9.75	ug/L	#	93
64) 2-Hexanone	12.882	43	608770	48.78	ug/L		95
65) Ethylbenzene	13.211	106	251441	10.74	ug/L		94
66) Chlorobenzene	13.247	112	417890	10.11	ug/L		96
67) 1,1,1,2-Tetrachloroethane	13.282	131	118240	9.64	ug/L		95
68) m-xylene & p-xylene	13.329	106	629412	21.65	ug/L		94
69) o-xylene	13.734	106	295787	9.95	ug/L		94
70) Styrene	13.781	104	450550	9.37	ug/L		94
71) Bromoform	13.881	173	56574	8.82	ug/L	#	88
72) Isopropylbenzene	13.999	105	750121	10.03	ug/L		97
74) Bromofluorobenzene	14.328	95	1442507	48.81	ug/L	#	81
75) n-Propylbenzene	14.392	91	1000959	10.51	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	242924	10.03	ug/L		97
77) 1,2,3-Trichloropropane	14.651	61	73846	11.72	ug/L		94
78) T-1,4-Dichloro-2-Butene	14.351	53	71229	8.97	ug/L	#	1
80) Bromobenzene	14.475	156	149248	10.74	ug/L		84
81) 1,2,4-Trimethylbenzene	14.962	105	648191	11.32	ug/L		99
82) 2-Chlorotoluene	14.610	91	586883	11.44	ug/L		96
83) 4-Chlorotoluene	14.774	91	596106	11.64	ug/L		96
84) tert-Butylbenzene	14.898	119	524494	10.77	ug/L		99
85) 1,3,5-Trimethylbenzene	14.545	105	674843	11.72	ug/L		97
86) p-Isopropyltoluene	15.192	119	663916	10.11	ug/L		98
87) s-Butylbenzene	15.080	105	799657	11.56	ug/L		98
88) 1,3-Dichlorobenzene	15.415	146	311105	10.69	ug/L		98
89) 1,4-Dichlorobenzene	15.509	146	314368	10.48	ug/L	#	45
90) n-Butylbenzene	15.673	91	633951	9.86	ug/L		97
91) 1,2-Dichlorobenzene	16.026	146	273858	10.19	ug/L		93
92) DBCP	17.083	157	23874	7.46	ug/L		92
93) Hexachlorobutadiene	17.994	225	23531	6.19	ug/L	#	87
94) 1,2,4-Trichlorobenzene	18.153	180	55168	7.13	ug/L	#	91
95) Naphthalene	18.793	128	113841	5.51	ug/L	#	91
96) 1,2,3-Trichlorobenzene	19.152	180	19431	5.46	ug/L		89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM007.D
Acq On : 18 Jun 2021 9:28 am
Operator : kkw
Sample : aa66932-cal4
Misc :
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 18 09:52:17 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM008.D
Acq On : 18 Jun 2021 9:56 am
Operator : kkw
Sample : aa66932-cal5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 18 10:34:37 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1048667	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2471790	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1553840	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1230662	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	817344	73.95	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 147.90%#				
52) D8-Toluene	11.778	98	3851047	63.49	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 126.98%#				
73) Bromofluorobenzene	14.328	95	1690729	62.94	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 125.88%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	200616	15.93	ug/L		94
3) Chloromethane	4.410	50	302243	18.48	ug/L		100
4) Vinyl Chloride	4.586	62	270150	21.33	ug/L		96
5) Bromomethane	5.227	94	76749	21.51	ug/L	#	96
6) Chloroethane	5.462	64	156004	30.58	ug/L		99
7) Trichlorofluoromethane	5.703	101	324475	23.25	ug/L		99
8) Diethyl ether	6.184	59	214890	25.05	ug/L		99
9) 1,1-Dichloroethene	6.537	96	221322	26.33	ug/L		91
10) Trichlorotrifluoroethane	6.555	151	137133	24.00	ug/L		94
11) Acrolein	7.013	56	561975	204.58	ug/L		100
12) Iodomethane	6.778	142	915747	86.03	ug/L		97
13) Carbon Disulfide	6.625	76	3325322	102.69	ug/L		100
14) 3-chloropropene	7.195	41	352274	22.97	ug/L		97
15) Acetone	7.395	43	398208	113.61	ug/L		96
16) Methylene Chloride	7.342	84	286265	25.93	ug/L		93
17) Methyl Acetate	7.524	43	210343	22.85	ug/L	#	97
18) t-1,2-Dichloroethene	7.548	96	254734	24.75	ug/L		94
19) Methyl tert-butyl ether	7.630	73	635359	24.60	ug/L		94
20) Acetonitrile	8.012	41	573594	224.54	ug/L		97
21) Isopropyl ether	8.053	45	835803	25.59	ug/L		100
22) Chloroprene	8.276	88	239238	24.76	ug/L		99
23) 1,1-Dichloroethane	8.317	63	496023	27.47	ug/L		98
24) Acrylonitrile	8.382	53	1142636	206.28	ug/L		100
25) Vinyl Acetate	8.541	43	2933507	127.34	ug/L		98
26) c-1,2-Dichloroethene	8.952	96	281101	24.59	ug/L		95
27) 2,2-Dichloropropane	9.075	77	361450	26.86	ug/L		99
28) Bromochloromethane	9.181	128	109839	29.80	ug/L		97
29) Cyclohexane	9.187	56	510224	26.07	ug/L		97
30) Chloroform	9.222	83	472414	25.71	ug/L		95
32) Dibromofluoromethane	9.428	113	817344	73.95	ug/L	#	90
33) 2-Butanone	9.545	72	207794	112.18	ug/L		98
34) 1,1,1-Trichloroethane	9.486	97	347948	25.39	ug/L		93
35) 1,1-Dichloropropene	9.604	75	389732	26.62	ug/L		97
36) Propionitrile	9.892	54	522201	230.42	ug/L		94
37) Methacrylonitrile	9.910	41	2068765	232.92	ug/L		99
38) Isobutyl Alcohol	9.910	43	433436	404.99	ug/L	#	83
40) Carbon Tetrachloride	9.410	117	313463	25.77	ug/L	#	71
41) Benzene	9.880	78	1191916	22.97	ug/L		99
42) 1,2-Dichloroethane	10.086	62	328738	21.84	ug/L		99
43) Trichloroethene	10.450	130	249364	21.05	ug/L	#	78
44) Methyl cyclohexane	10.450	83	545136	21.39	ug/L		97
45) Dibromomethane	10.903	93	165729	20.52	ug/L		91
46) 1,2-Dichloropropane	10.985	63	320957	21.51	ug/L		98
47) Bromodichloromethane	11.020	83	331106	21.40	ug/L		98
48) Methyl Methacrylate	11.079	69	213806	18.40	ug/L		97
49) 1,4-Dioxane	11.196	88	51801	329.76	ug/L		91
50) 2-Chloroethyl vinyl ether	11.490	63	862819	95.57	ug/L		97
51) C-1,3-Dichloropropene	11.608	75	502562	21.35	ug/L		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM008.D
Acq On : 18 Jun 2021 9:56 am
Operator : kkw
Sample : aa66932-cal5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 18 10:34:37 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration

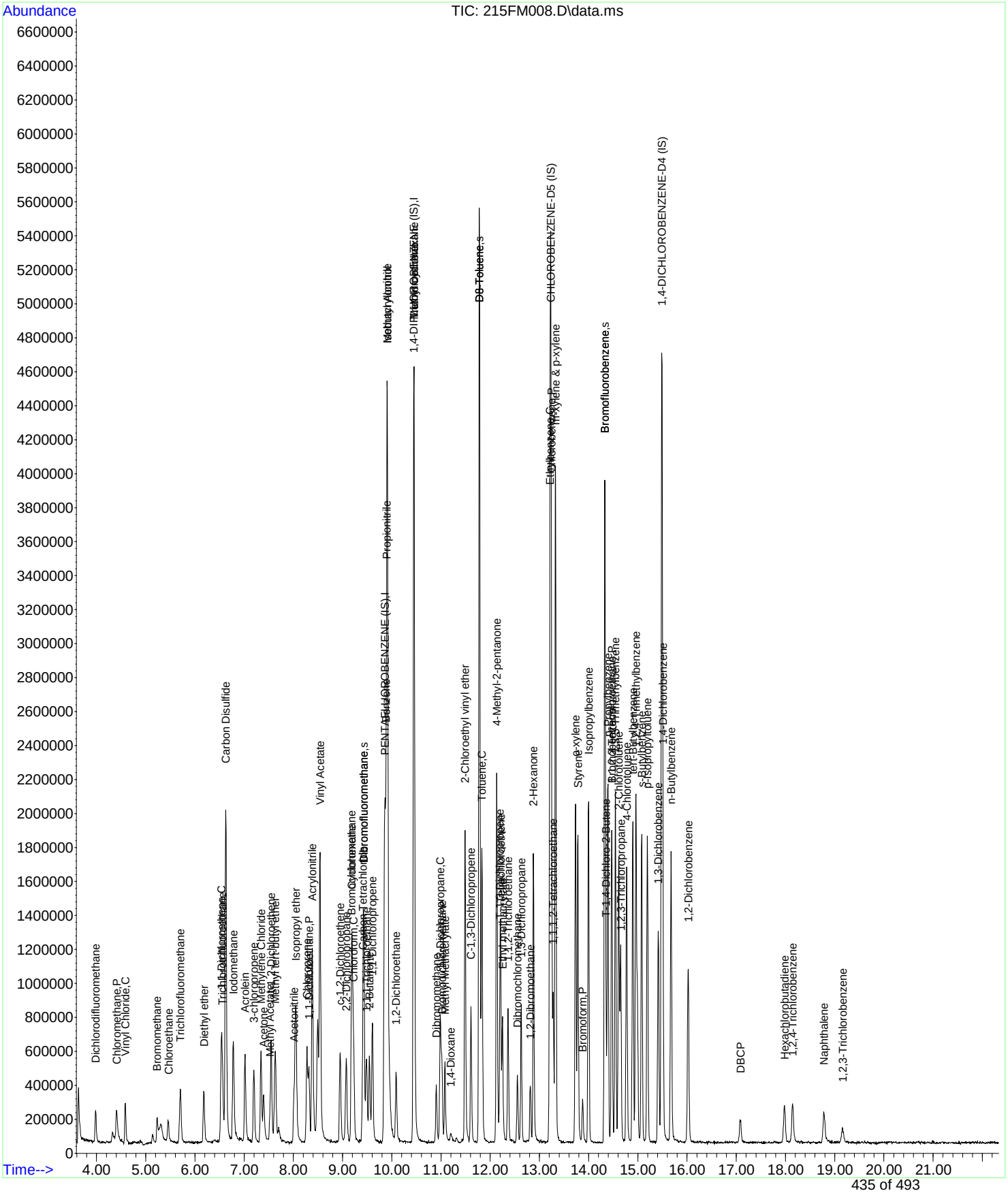
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) D8-Toluene	11.778	98	3846540	63.42 ug/L	95
54) 4-Methyl-2-pentanone	12.131	100	225597	85.61 ug/L	87
56) Toluene	11.831	92	775105	21.95 ug/L	100
57) T-1,3-Dichloropropene	12.195	75	401434	21.61 ug/L	97
58) Tetrachloroethene	12.213	164	174433	18.07 ug/L	94
59) Ethyl methacrylate	12.248	69	404512	18.58 ug/L	98
60) 1,1,2-Trichloroethane	12.360	97	264998	20.82 ug/L	99
61) Dibromochloromethane	12.554	129	214050	19.68 ug/L	96
62) 1,3-Dichloropropane	12.630	76	478862	20.18 ug/L	98
63) 1,2-Dibromoethane	12.812	107	261362	19.92 ug/L	100
64) 2-Hexanone	12.877	43	1090226	96.12 ug/L	98
65) Ethylbenzene	13.212	106	437376	20.55 ug/L	90
66) Chlorobenzene	13.241	112	788116	20.97 ug/L	98
67) 1,1,1,2-Tetrachloroethane	13.276	131	220728	19.47 ug/L	98
68) m-xylene & p-xylene	13.329	106	1185284	44.85 ug/L	95
69) o-xylene	13.735	106	588315	21.78 ug/L	100
70) Styrene	13.782	104	1002210	22.92 ug/L	98
71) Bromoform	13.876	173	115109	18.90 ug/L	97
72) Isopropylbenzene	13.999	105	1501750	22.09 ug/L	98
74) Bromofluorobenzene	14.328	95	1690729	62.94 ug/L #	75
75) n-Propylbenzene	14.393	91	1936701	22.38 ug/L	97
76) 1,1,2,2-Tetrachloroethane	14.469	83	466550	21.19 ug/L	97
77) 1,2,3-Trichloropropane	14.657	61	97684	16.87 ug/L #	79
78) T-1,4-Dichloro-2-Butene	14.351	53	132350	18.34 ug/L #	52
80) Bromobenzene	14.469	156	275454	21.99 ug/L	84
81) 1,2,4-Trimethylbenzene	14.963	105	1290180	24.99 ug/L	99
82) 2-Chlorotoluene	14.610	91	1123138	24.30 ug/L	98
83) 4-Chlorotoluene	14.775	91	1182452	25.62 ug/L	96
84) tert-Butylbenzene	14.898	119	1017327	23.19 ug/L	97
85) 1,3,5-Trimethylbenzene	14.540	105	1306656	25.17 ug/L	96
86) p-Isopropyltoluene	15.192	119	1250358	21.13 ug/L	97
87) s-Butylbenzene	15.080	105	1534533	24.60 ug/L	98
88) 1,3-Dichlorobenzene	15.415	146	566706	21.60 ug/L	93
89) 1,4-Dichlorobenzene	15.509	146	588831	21.79 ug/L #	76
90) n-Butylbenzene	15.673	91	1239760	21.40 ug/L	96
91) 1,2-Dichlorobenzene	16.026	146	515198	21.26 ug/L	93
92) DBCP	17.090	157	44628	15.22 ug/L	86
93) Hexachlorobutadiene	17.983	225	49921	14.50 ug/L	93
94) 1,2,4-Trichlorobenzene	18.141	180	103006	14.53 ug/L	95
95) Naphthalene	18.782	128	267664	14.07 ug/L	97
96) 1,2,3-Trichlorobenzene	19.164	180	39009	11.98 ug/L #	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM008.D
Acq On : 18 Jun 2021 9:56 am
Operator : kkw
Sample : aa66932-cal5
Misc :
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 18 10:34:37 2021
Quant Method : C:\msdchem\1\methods\051221W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Thu May 13 10:05:21 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM009.D
Acq On : 18 Jun 2021 10:24 am
Operator : kkw
Sample : aa66932-cal6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 18 11:10:05 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:10:02 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1101889	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2525815	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1610233	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1271242	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	691769	52.47	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 104.94%				
52) D8-Toluene	11.778	98	3376143	55.48	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 110.96%				
73) Bromofluorobenzene	14.328	95	1488725	54.27	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 108.54%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	566892	50.85	ug/L		99
3) Chloromethane	4.404	50	760761	47.45	ug/L		98
4) Vinyl Chloride	4.586	62	716164	49.26	ug/L		88
5) Bromomethane	5.227	94	193576	31.84	ug/L		99
6) Chloroethane	5.444	64	316881	35.23	ug/L		95
7) Trichlorofluoromethane	5.697	101	846089	51.19	ug/L		100
8) Diethyl ether	6.178	59	555943	48.97	ug/L		98
9) 1,1-Dichloroethene	6.531	96	607719	52.83	ug/L		96
10) Trichlorotrifluoroethane	6.554	151	352293	48.81	ug/L		90
11) Acrolein	7.013	56	1477050	512.15	ug/L		100
12) Iodomethane	6.778	142	2614644	375.79	ug/L		97
13) Carbon Disulfide	6.625	76	8389451	262.62	ug/L		99
14) 3-chloropropene	7.195	41	986635	55.01	ug/L		99
15) Acetone	7.395	43	1078431	267.16	ug/L		100
16) Methylene Chloride	7.342	84	725279	47.73	ug/L		100
17) Methyl Acetate	7.518	43	551906	42.28	ug/L	#	95
18) t-1,2-Dichloroethene	7.547	96	668471	49.88	ug/L		97
19) Methyl tert-butyl ether	7.630	73	1745532	53.48	ug/L		99
20) Acetonitrile	8.006	41	1530457	504.36	ug/L		100
21) Isopropyl ether	8.047	45	2233077	54.63	ug/L		99
22) Chloroprene	8.270	88	624635	60.84	ug/L		96
23) 1,1-Dichloroethane	8.311	63	1268564	49.88	ug/L		100
24) Acrylonitrile	8.382	53	2947243	519.53	ug/L		99
25) Vinyl Acetate	8.534	43	7542136	300.62	ug/L		98
26) c-1,2-Dichloroethene	8.946	96	768544	54.92	ug/L		97
27) 2,2-Dichloropropane	9.075	77	961942	54.88	ug/L		98
28) Bromochloromethane	9.187	128	241159	41.87	ug/L		96
29) Cyclohexane	9.187	56	1378155	56.75	ug/L		96
30) Chloroform	9.222	83	1207625	49.58	ug/L		99
32) Dibromofluoromethane	9.428	113	691769	52.47	ug/L	#	90
33) 2-Butanone	9.539	72	545346	262.38	ug/L		99
34) 1,1,1-Trichloroethane	9.480	97	948191	54.29	ug/L		98
35) 1,1-Dichloropropene	9.604	75	1020890	51.58	ug/L		98
36) Propionitrile	9.892	54	1278807	483.73	ug/L		92
37) Methacrylonitrile	9.909	41	5156465	501.48	ug/L		100
38) Isobutyl Alcohol	9.950	43	1181083	1315.77	ug/L		97
40) Carbon Tetrachloride	9.410	117	719666	51.82	ug/L	#	94
41) Benzene	9.874	78	2915205	47.71	ug/L		99
42) 1,2-Dichloroethane	10.086	62	825333	45.49	ug/L		99
43) Trichloroethene	10.450	130	624288	50.54	ug/L		92
44) Methyl cyclohexane	10.450	83	1353707	36.45	ug/L		96
45) Dibromomethane	10.902	93	434739	49.73	ug/L		92
46) 1,2-Dichloropropane	10.985	63	849636	50.47	ug/L		99
47) Bromodichloromethane	11.014	83	875106	55.15	ug/L		99
48) Methyl Methacrylate	11.079	69	618545	63.20	ug/L		97
49) 1,4-Dioxane	11.202	88	139925	1066.27	ug/L		97
50) 2-Chloroethyl vinyl ether	11.484	63	2289741	306.35	ug/L		96
51) C-1,3-Dichloropropene	11.607	75	1342741	56.74	ug/L		99

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM009.D
Acq On : 18 Jun 2021 10:24 am
Operator : kkw
Sample : aa66932-cal6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 18 11:10:05 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:10:02 2021
Response via : Initial Calibration

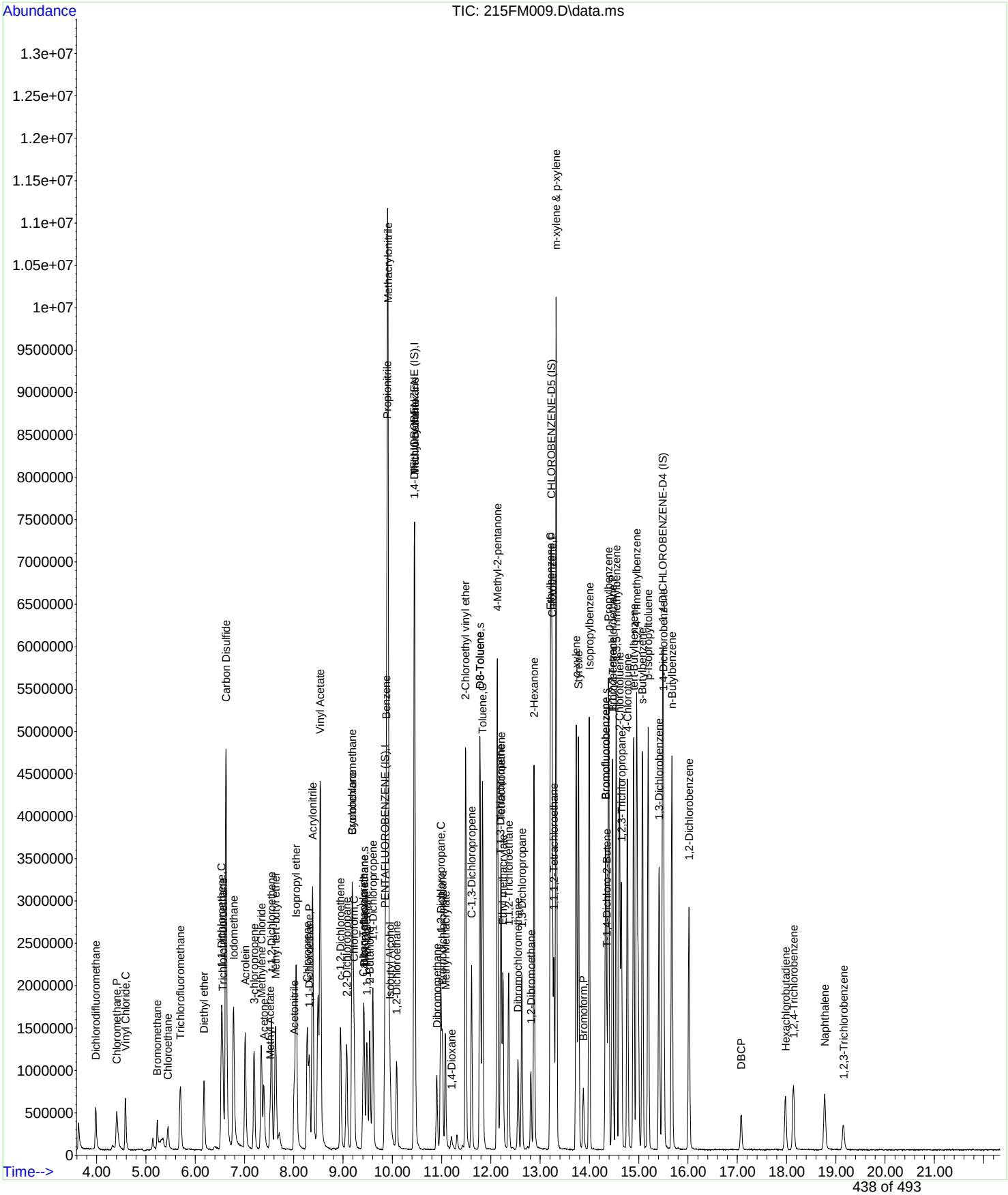
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3376143	55.48	ug/L		96
54) 4-Methyl-2-pentanone	12.130	100	606010	275.54	ug/L		91
56) Toluene	11.831	92	2006031	50.07	ug/L		97
57) T-1,3-Dichloropropene	12.195	75	1052480	54.14	ug/L		99
58) Tetrachloroethene	12.207	164	440848	47.30	ug/L		94
59) Ethyl methacrylate	12.242	69	1112969	66.12	ug/L		100
60) 1,1,2-Trichloroethane	12.360	97	683667	50.59	ug/L		98
61) Dibromochloromethane	12.548	129	579595	61.98	ug/L		99
62) 1,3-Dichloropropane	12.630	76	1280096	52.68	ug/L		98
63) 1,2-Dibromoethane	12.812	107	708335	53.68	ug/L	#	98
64) 2-Hexanone	12.877	43	2942276	299.51	ug/L		99
65) Ethylbenzene	13.206	106	1154029	52.29	ug/L		93
66) Chlorobenzene	13.241	112	1987083	50.12	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	588973	53.81	ug/L		98
68) m-xylene & p-xylene	13.323	106	2897847	99.04	ug/L		95
69) o-xylene	13.729	106	1480227	53.50	ug/L		94
70) Styrene	13.775	104	2515821	61.21	ug/L		98
71) Bromoform	13.875	173	316758	63.73	ug/L		90
72) Isopropylbenzene	13.999	105	3820687	54.01	ug/L		97
74) Bromofluorobenzene	14.328	95	1488725	54.27	ug/L	#	75
75) n-Propylbenzene	14.387	91	4988753	53.59	ug/L		98
76) 1,1,2,2-Tetrachloroethane	14.469	83	1173606	51.05	ug/L		98
77) 1,2,3-Trichloropropane	14.651	61	258789	44.09	ug/L		84
78) T-1,4-Dichloro-2-Butene	14.351	53	339718	52.37	ug/L		89
80) Bromobenzene	14.469	156	704271	52.43	ug/L		80
81) 1,2,4-Trimethylbenzene	14.957	105	3383669	57.85	ug/L		98
82) 2-Chlorotoluene	14.610	91	2945298	54.40	ug/L		97
83) 4-Chlorotoluene	14.768	91	3058188	57.02	ug/L		97
84) tert-Butylbenzene	14.898	119	2702281	56.48	ug/L		96
85) 1,3,5-Trimethylbenzene	14.545	105	3401507	57.23	ug/L		97
86) p-Isopropyltoluene	15.192	119	3319147	58.70	ug/L		97
87) s-Butylbenzene	15.074	105	4096072	57.37	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	1494905	53.19	ug/L		93
89) 1,4-Dichlorobenzene	15.503	146	1488014	49.92	ug/L		91
90) n-Butylbenzene	15.673	91	3375228	60.91	ug/L		97
91) 1,2-Dichlorobenzene	16.020	146	1375072	53.70	ug/L		95
92) DBCP	17.078	157	141044	63.73	ug/L		98
93) Hexachlorobutadiene	17.982	225	142097	61.92	ug/L	#	90
94) 1,2,4-Trichlorobenzene	18.141	180	313560	74.05	ug/L		92
95) Naphthalene	18.776	128	896222	85.25	ug/L		100
96) 1,2,3-Trichlorobenzene	19.158	180	138934	74.50	ug/L	#	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM009.D
Acq On : 18 Jun 2021 10:24 am
Operator : kkw
Sample : aa66932-cal6
Misc :
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 18 11:10:05 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:10:02 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM010.D
Acq On : 18 Jun 2021 10:52 am
Operator : kkw
Sample : aa66932-cal7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 18 11:43:10 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:11:17 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1123435	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2544231	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1714182	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1273276	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	918978	67.81	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 135.62%#				
52) D8-Toluene	11.778	98	4433031	71.03	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 142.06%#				
73) Bromofluorobenzene	14.328	95	2000166	67.53	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 135.06%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	932562	81.81	ug/L		98
3) Chloromethane	4.404	50	1300917	83.08	ug/L		100
4) Vinyl Chloride	4.580	62	1219487	82.47	ug/L		96
5) Bromomethane	5.232	94	362884	62.32	ug/L		96
6) Chloroethane	5.432	64	417887	47.93	ug/L		96
7) Trichlorofluoromethane	5.691	101	1408032	83.22	ug/L		100
8) Diethyl ether	6.178	59	932975	80.89	ug/L		99
9) 1,1-Dichloroethene	6.531	96	963951	81.42	ug/L		99
10) Trichlorotrifluoroethane	6.554	151	553174	75.47	ug/L		99
11) Acrolein	7.013	56	2505933	848.80	ug/L		99
12) Iodomethane	6.778	142	4278069	556.41	ug/L		99
13) Carbon Disulfide	6.619	76	13076901	398.15	ug/L		99
14) 3-chloropropene	7.195	41	1588991	85.47	ug/L		97
15) Acetone	7.389	43	1861072	447.08	ug/L		99
16) Methylene Chloride	7.336	84	1216081	79.10	ug/L		97
17) Methyl Acetate	7.512	43	977153	75.35	ug/L	#	96
18) t-1,2-Dichloroethene	7.542	96	1074638	78.68	ug/L		97
19) Methyl tert-butyl ether	7.630	73	2897495	86.08	ug/L		99
20) Acetonitrile	8.006	41	2616075	844.36	ug/L		99
21) Isopropyl ether	8.047	45	3676890	86.89	ug/L		99
22) Chloroprene	8.270	88	1026205	94.62	ug/L		99
23) 1,1-Dichloroethane	8.311	63	2065602	79.70	ug/L		99
24) Acrylonitrile	8.382	53	5029725	863.99	ug/L		98
25) Vinyl Acetate	8.535	43	12211820	461.83	ug/L		99
26) c-1,2-Dichloroethene	8.946	96	1216730	83.90	ug/L		97
27) 2,2-Dichloropropane	9.069	77	1594058	87.77	ug/L		100
28) Bromochloromethane	9.181	128	379875	66.49	ug/L		99
29) Cyclohexane	9.193	56	2188095	86.42	ug/L		98
30) Chloroform	9.222	83	1956175	78.88	ug/L		98
32) Dibromofluoromethane	9.428	113	918978	67.81	ug/L	#	88
33) 2-Butanone	9.539	72	952951	446.02	ug/L		95
34) 1,1,1-Trichloroethane	9.481	97	1534822	84.98	ug/L		99
35) 1,1-Dichloropropene	9.604	75	1668352	82.24	ug/L		99
36) Propionitrile	9.898	54	2058819	768.01	ug/L		97
37) Methacrylonitrile	9.909	41	8187682	780.62	ug/L		98
38) Isobutyl Alcohol	9.951	43	1979594	2054.90	ug/L		96
40) Carbon Tetrachloride	9.410	117	1365433	97.02	ug/L		86
41) Benzene	9.874	78	4591902	75.18	ug/L		99
42) 1,2-Dichloroethane	10.086	62	1375316	76.41	ug/L		98
43) Trichloroethene	10.450	130	985071	79.02	ug/L		99
44) Methyl cyclohexane	10.450	83	2150686	60.21	ug/L		98
45) Dibromomethane	10.897	93	718501	81.67	ug/L		99
46) 1,2-Dichloropropane	10.985	63	1381434	81.34	ug/L		98
47) Bromodichloromethane	11.014	83	1457563	89.66	ug/L		100
48) Methyl Methacrylate	11.073	69	1042641	101.31	ug/L		100
49) 1,4-Dioxane	11.202	88	245538	1837.24	ug/L		99
50) 2-Chloroethyl vinyl ether	11.490	63	3769965	482.61	ug/L		99
51) C-1,3-Dichloropropene	11.607	75	2205891	90.51	ug/L		99

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM010.D
Acq On : 18 Jun 2021 10:52 am
Operator : kkw
Sample : aa66932-cal7
Misc :
ALS Vial : 8 Sample Multiplier: 1

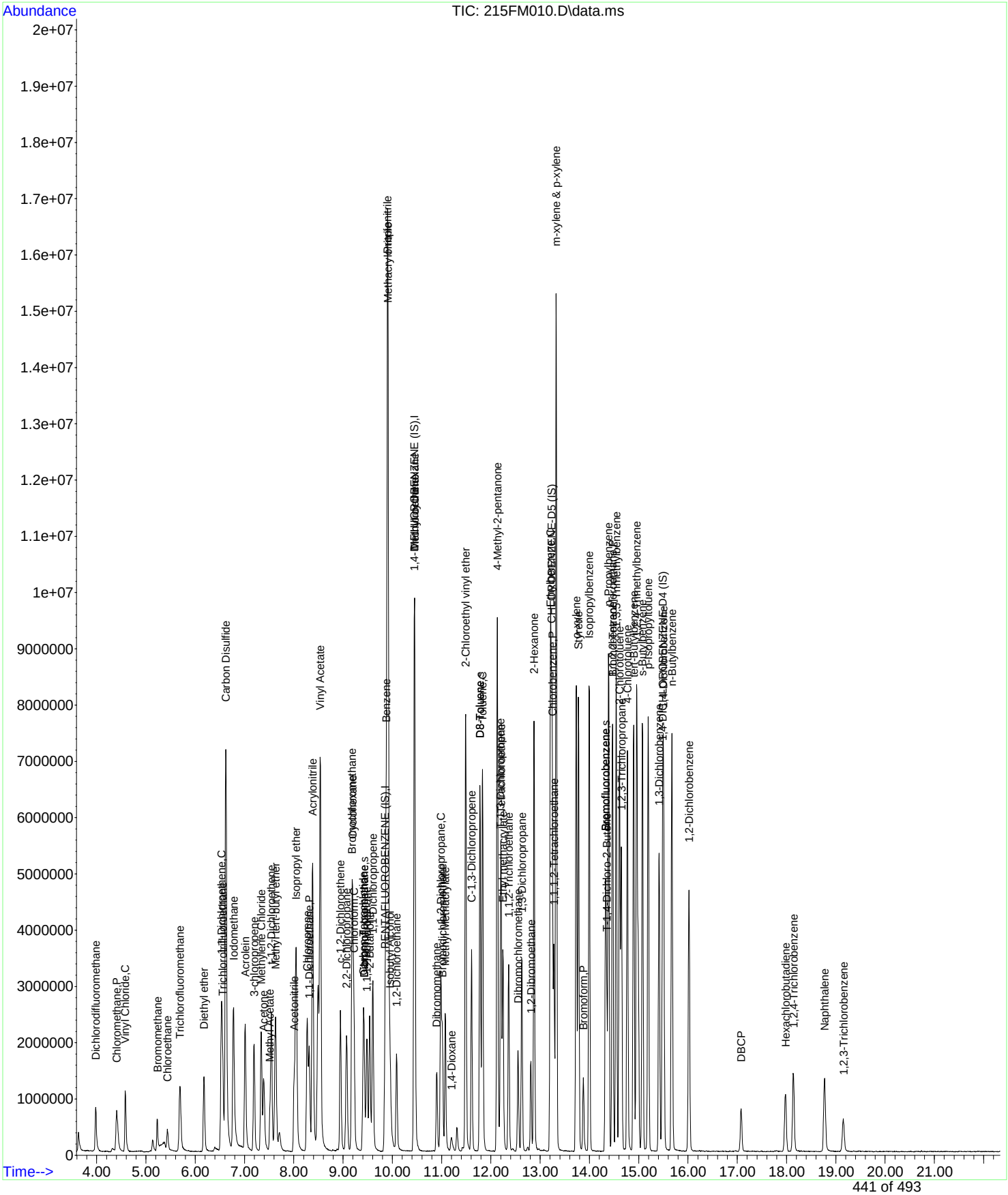
Quant Time: Jun 18 11:43:10 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:11:17 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	4433031	71.03	ug/L		95
54) 4-Methyl-2-pentanone	12.130	100	991775	440.18	ug/L		96
56) Toluene	11.831	92	3174215	74.41	ug/L		100
57) T-1,3-Dichloropropene	12.195	75	1728113	82.37	ug/L		99
58) Tetrachloroethene	12.207	164	701519	71.35	ug/L		98
59) Ethyl methacrylate	12.242	69	1898301	100.53	ug/L		99
60) 1,1,2-Trichloroethane	12.360	97	1142283	79.24	ug/L		98
61) Dibromochloromethane	12.553	129	998555	96.45	ug/L		99
62) 1,3-Dichloropropane	12.630	76	2158658	82.71	ug/L		100
63) 1,2-Dibromoethane	12.812	107	1195729	84.09	ug/L		99
64) 2-Hexanone	12.877	43	4994708	462.34	ug/L		99
65) Ethylbenzene	13.206	106	1871305	79.04	ug/L		96
66) Chlorobenzene	13.247	112	3189012	75.53	ug/L		100
67) 1,1,1,2-Tetrachloroethane	13.282	131	1009037	85.52	ug/L		97
68) m-xylene & p-xylene	13.323	106	4541007	146.02	ug/L		97
69) o-xylene	13.734	106	2417387	81.13	ug/L		99
70) Styrene	13.776	104	4206117	92.66	ug/L		99
71) Bromoform	13.875	173	575403	103.99	ug/L		98
72) Isopropylbenzene	13.993	105	6066459	79.50	ug/L		98
74) Bromofluorobenzene	14.328	95	2000166	67.53	ug/L	#	75
75) n-Propylbenzene	14.387	91	7982408	79.59	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	1985210	80.84	ug/L		98
77) 1,2,3-Trichloropropane	14.651	61	457507	74.69	ug/L		94
78) T-1,4-Dichloro-2-Butene	14.351	53	625157	89.82	ug/L		90
80) Bromobenzene	14.469	156	1148624	84.69	ug/L		100
81) 1,2,4-Trimethylbenzene	14.957	105	5391829	89.68	ug/L		99
82) 2-Chlorotoluene	14.610	91	4808303	87.39	ug/L		99
83) 4-Chlorotoluene	14.769	91	4948469	90.01	ug/L		100
84) tert-Butylbenzene	14.898	119	4242901	86.67	ug/L		98
85) 1,3,5-Trimethylbenzene	14.545	105	5336569	87.53	ug/L		98
86) p-Isopropyltoluene	15.192	119	5201226	89.25	ug/L		99
87) s-Butylbenzene	15.074	105	6457795	88.14	ug/L		100
88) 1,3-Dichlorobenzene	15.415	146	2387561	83.92	ug/L		99
89) 1,4-Dichlorobenzene	15.503	146	2416825	80.97	ug/L		96
90) n-Butylbenzene	15.673	91	5350880	93.02	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	2208490	85.06	ug/L		97
92) DBCP	17.078	157	246775	106.45	ug/L		95
93) Hexachlorobutadiene	17.982	225	250885	104.97	ug/L		96
94) 1,2,4-Trichlorobenzene	18.141	180	577702	126.10	ug/L		97
95) Naphthalene	18.770	128	1722375	146.37	ug/L		100
96) 1,2,3-Trichlorobenzene	19.158	180	265407	131.36	ug/L		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM010.D
Acq On : 18 Jun 2021 10:52 am
Operator : kkw
Sample : aa66932-cal7
Misc :
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 18 11:43:10 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:11:17 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM011.D
Acq On : 18 Jun 2021 11:20 am
Operator : kkw
Sample : aa66932-cal8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 18 11:43:26 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:11:17 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.851	168	1129487	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2502919	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.223	82	1697989	50.00	ug/L	#	0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1266610	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	988078	72.52	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 145.04%#				
52) D8-Toluene	11.778	98	4733786	77.10	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 154.20%#				
73) Bromofluorobenzene	14.328	95	2175091	74.14	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 148.28%#				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	1159014	101.13	ug/L		99
3) Chloromethane	4.404	50	1831210	116.32	ug/L		100
4) Vinyl Chloride	4.580	62	1565349	105.29	ug/L		96
5) Bromomethane	5.227	94	478379	81.72	ug/L		98
6) Chloroethane	5.432	64	388830	44.36	ug/L		97
7) Trichlorofluoromethane	5.685	101	1776302	104.42	ug/L		99
8) Diethyl ether	6.179	59	1207374	104.12	ug/L		99
9) 1,1-Dichloroethene	6.531	96	1251271	105.12	ug/L		99
10) Trichlorotrifluoroethane	6.555	151	706618	95.89	ug/L		98
11) Acrolein	7.013	56	3300114	1111.81	ug/L		100
12) Iodomethane	6.772	142	5419952	701.14	ug/L		99
13) Carbon Disulfide	6.619	76	16040976	485.79	ug/L		99
14) 3-chloropropene	7.189	41	1865214	99.79	ug/L		99
15) Acetone	7.395	43	2495282	596.23	ug/L		100
16) Methylene Chloride	7.336	84	1513458	97.91	ug/L		95
17) Methyl Acetate	7.518	43	1317924	101.09	ug/L		96
18) t-1,2-Dichloroethene	7.542	96	1370279	99.79	ug/L		99
19) Methyl tert-butyl ether	7.630	73	3836963	113.38	ug/L		99
20) Acetonitrile	8.012	41	3525661	1131.84	ug/L		99
21) Isopropyl ether	8.047	45	4718235	110.90	ug/L		99
22) Chloroprene	8.270	88	1332291	122.18	ug/L		99
23) 1,1-Dichloroethane	8.311	63	2603426	99.91	ug/L		100
24) Acrylonitrile	8.382	53	6578133	1123.92	ug/L		100
25) Vinyl Acetate	8.535	43	15529950	584.17	ug/L		98
26) c-1,2-Dichloroethene	8.946	96	1558869	106.91	ug/L		98
27) 2,2-Dichloropropane	9.069	77	2012990	110.25	ug/L		99
28) Bromochloromethane	9.181	128	448159	78.02	ug/L		100
29) Cyclohexane	9.187	56	2739986	107.64	ug/L		98
30) Chloroform	9.216	83	2478369	99.41	ug/L		99
32) Dibromofluoromethane	9.428	113	988078	72.52	ug/L	#	89
33) 2-Butanone	9.539	72	1250560	582.17	ug/L		99
34) 1,1,1-Trichloroethane	9.486	97	1930104	106.29	ug/L		99
35) 1,1-Dichloropropene	9.604	75	2074189	101.70	ug/L		99
36) Propionitrile	9.898	54	2668820	990.22	ug/L		96
37) Methacrylonitrile	9.909	41	10381958	984.52	ug/L		97
38) Isobutyl Alcohol	9.951	43	2662337	2748.81	ug/L		94
40) Carbon Tetrachloride	9.410	117	1460734	105.50	ug/L		88
41) Benzene	9.874	78	5755966	95.80	ug/L		99
42) 1,2-Dichloroethane	10.086	62	1753855	99.05	ug/L		99
43) Trichloroethene	10.450	130	1242836	101.35	ug/L		97
44) Methyl cyclohexane	10.450	83	2682040	76.33	ug/L		99
45) Dibromomethane	10.902	93	902694	104.30	ug/L		100
46) 1,2-Dichloropropane	10.985	63	1779650	106.51	ug/L		99
47) Bromodichloromethane	11.014	83	1859933	116.30	ug/L		100
48) Methyl Methacrylate	11.073	69	1410763	139.34	ug/L		97
49) 1,4-Dioxane	11.196	88	336711	2561.02	ug/L		97
50) 2-Chloroethyl vinyl ether	11.490	63	4851460	631.31	ug/L		99
51) C-1,3-Dichloropropene	11.608	75	2794072	116.53	ug/L		98

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM011.D
Acq On : 18 Jun 2021 11:20 am
Operator : kkw
Sample : aa66932-cal8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 18 11:43:26 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:11:17 2021
Response via : Initial Calibration

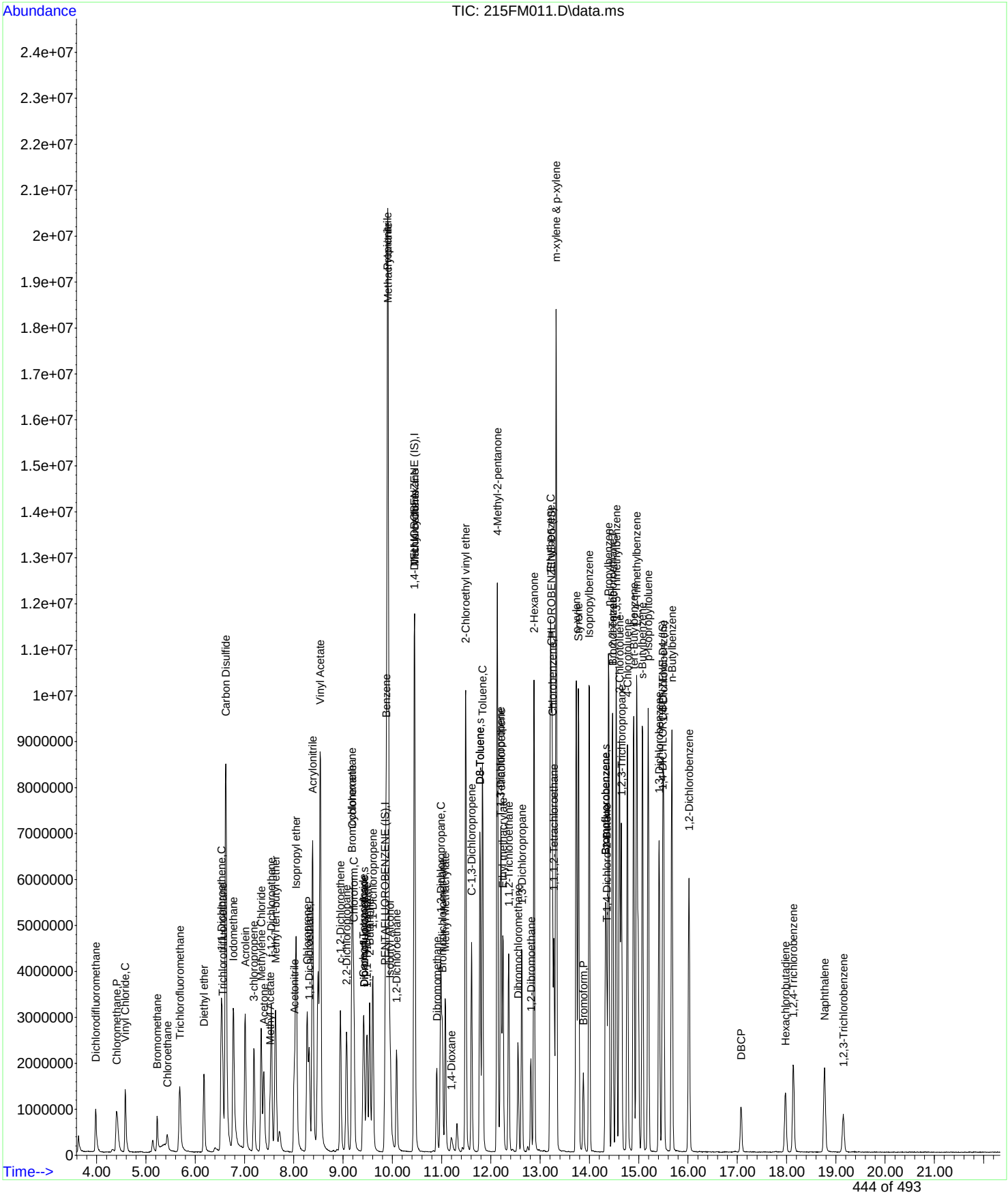
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	4731800	77.06	ug/L		97
54) 4-Methyl-2-pentanone	12.130	100	1330324	600.19	ug/L		99
56) Toluene	11.831	92	3937479	93.18	ug/L		98
57) T-1,3-Dichloropropene	12.195	75	2202638	105.99	ug/L		99
58) Tetrachloroethene	12.207	164	889715	91.35	ug/L		99
59) Ethyl methacrylate	12.242	69	2533929	135.48	ug/L		99
60) 1,1,2-Trichloroethane	12.360	97	1448881	101.47	ug/L		98
61) Dibromochloromethane	12.554	129	1315027	128.23	ug/L		99
62) 1,3-Dichloropropane	12.630	76	2753469	106.50	ug/L		99
63) 1,2-Dibromoethane	12.812	107	1520543	107.96	ug/L		98
64) 2-Hexanone	12.877	43	6710633	627.10	ug/L		100
65) Ethylbenzene	13.212	106	2353358	100.35	ug/L		94
66) Chlorobenzene	13.247	112	3959910	94.69	ug/L		98
67) 1,1,1,2-Tetrachloroethane	13.276	131	1264489	108.19	ug/L		98
68) m-xylene & p-xylene	13.323	106	5509138	178.84	ug/L		95
69) o-xylene	13.735	106	3022266	102.40	ug/L		98
70) Styrene	13.776	104	5266090	117.12	ug/L		98
71) Bromoform	13.876	173	754354	137.63	ug/L		97
72) Isopropylbenzene	13.993	105	7556057	99.96	ug/L		99
74) Bromofluorobenzene	14.328	95	2175091	74.14	ug/L	#	75
75) n-Propylbenzene	14.387	91	9784340	98.49	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	2499500	102.75	ug/L		98
77) 1,2,3-Trichloropropane	14.651	61	569211	93.81	ug/L		98
78) T-1,4-Dichloro-2-Butene	14.351	53	814740	118.18	ug/L		89
80) Bromobenzene	14.469	156	1450425	107.50	ug/L		100
81) 1,2,4-Trimethylbenzene	14.957	105	6619787	110.69	ug/L		100
82) 2-Chlorotoluene	14.610	91	6041910	110.39	ug/L		99
83) 4-Chlorotoluene	14.769	91	6177797	112.96	ug/L		99
84) tert-Butylbenzene	14.898	119	5257735	107.96	ug/L		97
85) 1,3,5-Trimethylbenzene	14.545	105	6695668	110.40	ug/L		99
86) p-Isopropyltoluene	15.192	119	6418293	110.72	ug/L		99
87) s-Butylbenzene	15.074	105	8000918	109.78	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	3008346	106.30	ug/L		98
89) 1,4-Dichlorobenzene	15.503	146	2972784	100.12	ug/L		96
90) n-Butylbenzene	15.673	91	6678774	116.72	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	2797662	108.32	ug/L		97
92) DBCP	17.078	157	347030	150.48	ug/L		96
93) Hexachlorobutadiene	17.977	225	318853	134.11	ug/L		95
94) 1,2,4-Trichlorobenzene	18.135	180	778725	170.88	ug/L		95
95) Naphthalene	18.770	128	2428103	207.43	ug/L		99
96) 1,2,3-Trichlorobenzene	19.152	180	365181	181.70	ug/L		99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM011.D
Acq On : 18 Jun 2021 11:20 am
Operator : kkw
Sample : aa66932-cal8
Misc :
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 18 11:43:26 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Fri Jun 18 11:11:17 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM013.D
Acq On : 18 Jun 2021 12:15 pm
Operator : kkw
Sample : aa66932-scv1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 21 07:55:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Mon Jun 21 07:54:29 2021
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) PENTAFLUOROBENZENE (IS)	9.857	168	1128318	50.00	ug/L		0.00
39) 1,4-DIFLUOROBENZENE (IS)	10.444	114	2499257	50.00	ug/L		0.00
55) CHLOROBENZENE-D5 (IS)	13.229	82	1604968	50.00	ug/L		0.00
79) 1,4-DICHLOROBENZENE-D4...	15.485	152	1259307	50.00	ug/L		0.00
System Monitoring Compounds							
31) Dibromofluoromethane	9.428	113	675508	50.03	ug/L		0.00
Spiked Amount 50.000	Range 72 - 133		Recovery = 100.06%				
52) D8-Toluene	11.778	98	3378392	54.81	ug/L		0.00
Spiked Amount 50.000	Range 85 - 120		Recovery = 109.62%				
73) Bromofluorobenzene	14.328	95	1508083	54.70	ug/L		0.00
Spiked Amount 50.000	Range 75 - 120		Recovery = 109.40%				
Target Compounds							Qvalue
2) Dichlorodifluoromethane	3.981	85	317681	27.37	ug/L		100
3) Chloromethane	4.410	50	382583	22.81	ug/L		98
4) Vinyl Chloride	4.586	62	307174	20.47	ug/L		93
5) Bromomethane	5.232	94	84016	21.54	ug/L	#	96
6) Chloroethane	5.450	64	132898	15.76	ug/L		96
7) Trichlorofluoromethane	5.703	101	347490	20.24	ug/L		99
8) Diethyl ether	6.178	59	634347	54.40	ug/L		100
9) 1,1-Dichloroethene	6.531	96	677949	56.53	ug/L		99
10) Trichlorotrifluoroethane	6.554	151	411529	56.60	ug/L		94
11) Acrolein	7.013	56	629146	207.69	ug/L		99
12) Iodomethane	6.778	142	503465	49.88	ug/L		98
13) Carbon Disulfide	6.625	76	2348205	65.60	ug/L		99
14) 3-chloropropene	7.195	41	1236698	62.45	ug/L		98
15) Acetone	7.389	43	1243457	259.52	ug/L		99
16) Methylene Chloride	7.342	84	787950	51.23	ug/L		94
17) Methyl Acetate	7.518	43	734153	58.35	ug/L		96
18) t-1,2-Dichloroethene	7.547	96	754914	55.16	ug/L		98
19) Methyl tert-butyl ether	7.630	73	1953142	56.30	ug/L		95
20) Acetonitrile	8.018	41	1104090	346.70	ug/L		92
21) Isopropyl ether	8.047	45	2555237	58.69	ug/L		97
22) Chloroprene	8.276	88	718883	54.97	ug/L		98
23) 1,1-Dichloroethane	8.311	63	1463462	56.25	ug/L		99
24) Acrylonitrile	8.388	53	417621	69.65	ug/L		94
25) Vinyl Acetate	8.540	43	1576358	51.05	ug/L		100
26) c-1,2-Dichloroethene	8.946	96	833017	56.36	ug/L		99
27) 2,2-Dichloropropane	9.069	77	1104018	59.05	ug/L		98
28) Bromochloromethane	9.181	128	266462	48.81	ug/L		94
29) Cyclohexane	9.193	56	1561550	60.23	ug/L		99
30) Chloroform	9.222	83	1344676	54.12	ug/L		99
32) Dibromofluoromethane	9.428	113	675508	50.03	ug/L	#	86
33) 2-Butanone	9.539	72	631495	284.35	ug/L		97
34) 1,1,1-Trichloroethane	9.486	97	1061984	57.64	ug/L		99
35) 1,1-Dichloropropene	9.604	75	1126769	55.00	ug/L		100
36) Propionitrile	9.898	54	180773	67.56	ug/L	#	1
37) Methacrylonitrile	9.909	41	863237	82.35	ug/L	#	79
38) Isobutyl Alcohol	9.904	43	695681	543.32	ug/L	#	77
40) Carbon Tetrachloride	9.410	117	785492m	54.98	ug/L		
41) Benzene	9.874	78	3370646	56.91	ug/L		98
42) 1,2-Dichloroethane	10.086	62	925481	52.70	ug/L		100
43) Trichloroethene	10.450	130	679710	55.50	ug/L		97
44) Methyl cyclohexane	10.450	83	1523625	57.08	ug/L		99
45) Dibromomethane	10.902	93	463343	53.19	ug/L		98
46) 1,2-Dichloropropane	10.985	63	935139	55.48	ug/L		99
47) Bromodichloromethane	11.014	83	989499	59.84	ug/L		99
48) Methyl Methacrylate	11.073	69	699733	52.49	ug/L		97
49) 1,4-Dioxane	11.196	88	169592	1185.40	ug/L		94
50) 2-Chloroethyl vinyl ether	11.490	63	2580815	273.44	ug/L		100
51) C-1,3-Dichloropropene	11.607	75	1403408	56.52	ug/L		97

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM013.D
Acq On : 18 Jun 2021 12:15 pm
Operator : kkw
Sample : aa66932-scv1
Misc :
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 21 07:55:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Mon Jun 21 07:54:29 2021
Response via : Initial Calibration

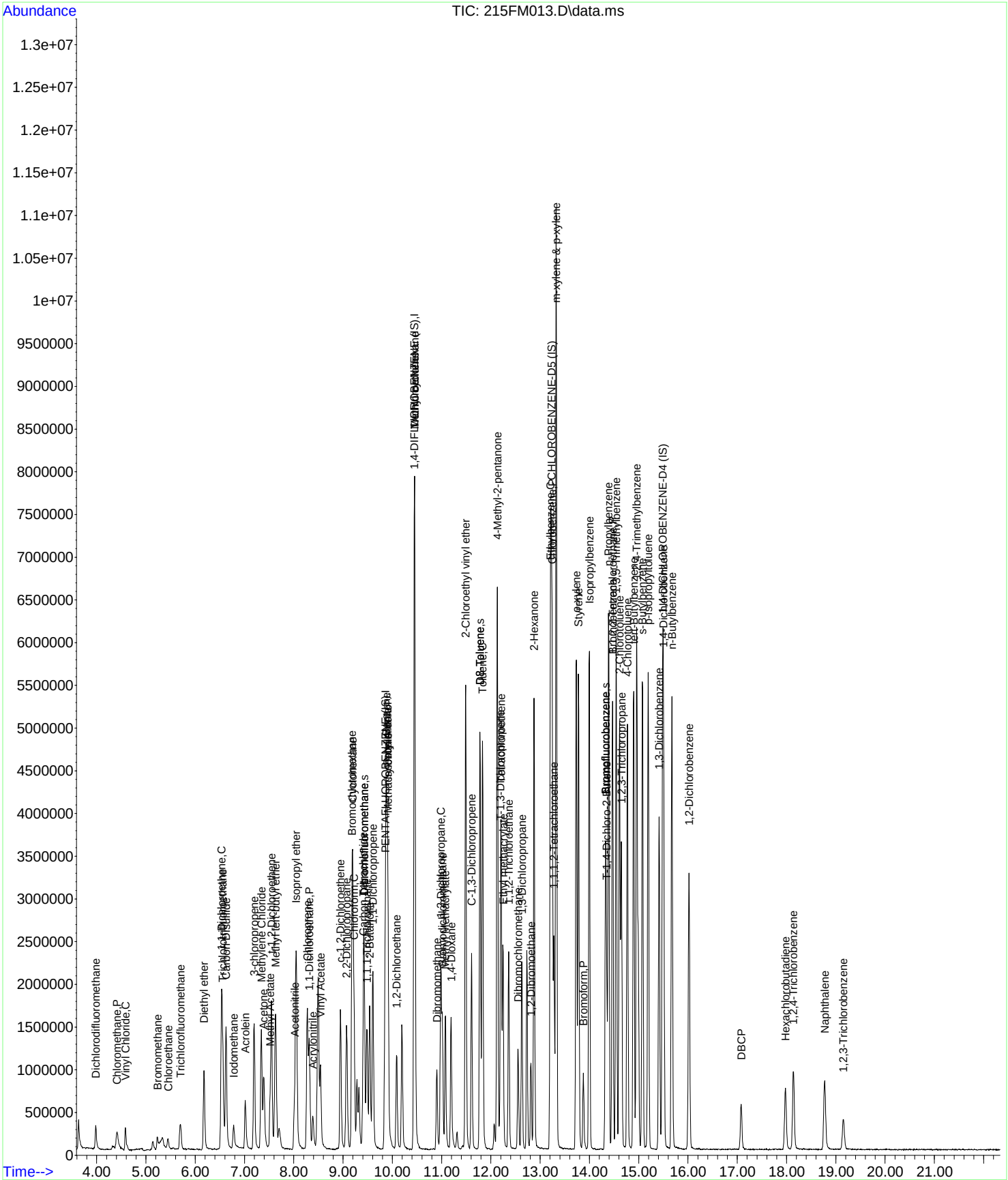
Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
53) D8-Toluene	11.778	98	3378392	54.81	ug/L		97
54) 4-Methyl-2-pentanone	12.130	100	688870	299.97	ug/L		97
56) Toluene	11.831	92	2210166	56.31	ug/L		97
57) T-1,3-Dichloropropene	12.195	75	1206284	60.73	ug/L		99
58) Tetrachloroethene	12.207	164	499288	55.59	ug/L		97
59) Ethyl methacrylate	12.248	69	1298219	56.33	ug/L		98
60) 1,1,2-Trichloroethane	12.360	97	758031	56.13	ug/L		98
61) Dibromochloromethane	12.553	129	658705	54.77	ug/L		99
62) 1,3-Dichloropropane	12.630	76	1377135	55.67	ug/L		98
63) 1,2-Dibromoethane	12.812	107	779275	57.59	ug/L		99
64) 2-Hexanone	12.877	43	3434594	281.62	ug/L		100
65) Ethylbenzene	13.206	106	1325600	59.87	ug/L		94
66) Chlorobenzene	13.241	112	2236687	57.36	ug/L		99
67) 1,1,1,2-Tetrachloroethane	13.276	131	673028	59.79	ug/L		97
68) m-xylene & p-xylene	13.323	106	3160551	111.23	ug/L		99
69) o-xylene	13.734	106	1680946	59.97	ug/L		99
70) Styrene	13.776	104	2944712	59.32	ug/L		98
71) Bromoform	13.875	173	377979	55.12	ug/L		99
72) Isopropylbenzene	13.999	105	4302693	58.22	ug/L		100
74) Bromofluorobenzene	14.328	95	1508083	54.70	ug/L	#	75
75) n-Propylbenzene	14.387	91	5648912	58.42	ug/L		99
76) 1,1,2,2-Tetrachloroethane	14.469	83	1301910	56.35	ug/L		100
77) 1,2,3-Trichloropropane	14.651	61	278456	52.08	ug/L		97
78) T-1,4-Dichloro-2-Butene	14.345	53	414145	61.22	ug/L		97
80) Bromobenzene	14.469	156	792623	58.12	ug/L		98
81) 1,2,4-Trimethylbenzene	14.957	105	3805773	57.25	ug/L		100
82) 2-Chlorotoluene	14.610	91	3324563	59.63	ug/L		99
83) 4-Chlorotoluene	14.769	91	3457410	56.52	ug/L		99
84) tert-Butylbenzene	14.898	119	3023903	57.64	ug/L		99
85) 1,3,5-Trimethylbenzene	14.539	105	3786947	56.99	ug/L		99
86) p-Isopropyltoluene	15.192	119	3793402	59.08	ug/L		100
87) s-Butylbenzene	15.074	105	4663834	58.46	ug/L		99
88) 1,3-Dichlorobenzene	15.415	146	1701572	59.64	ug/L		99
89) 1,4-Dichlorobenzene	15.503	146	1674850	56.64	ug/L		99
90) n-Butylbenzene	15.673	91	3858101	58.23	ug/L		99
91) 1,2-Dichlorobenzene	16.020	146	1570468	57.05	ug/L		99
92) DBCP	17.084	157	166845	58.77	ug/L		92
93) Hexachlorobutadiene	17.977	225	175248	56.84	ug/L		92
94) 1,2,4-Trichlorobenzene	18.135	180	387780	59.56	ug/L		99
95) Naphthalene	18.776	128	1102665	59.02	ug/L		98
96) 1,2,3-Trichlorobenzene	19.146	180	163143	57.21	ug/L		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\061821\
Data File : 215FM013.D
Acq On : 18 Jun 2021 12:15 pm
Operator : kkw
Sample : aa66932-scv1
Misc :
ALS Vial : 11 Sample Multiplier: 1

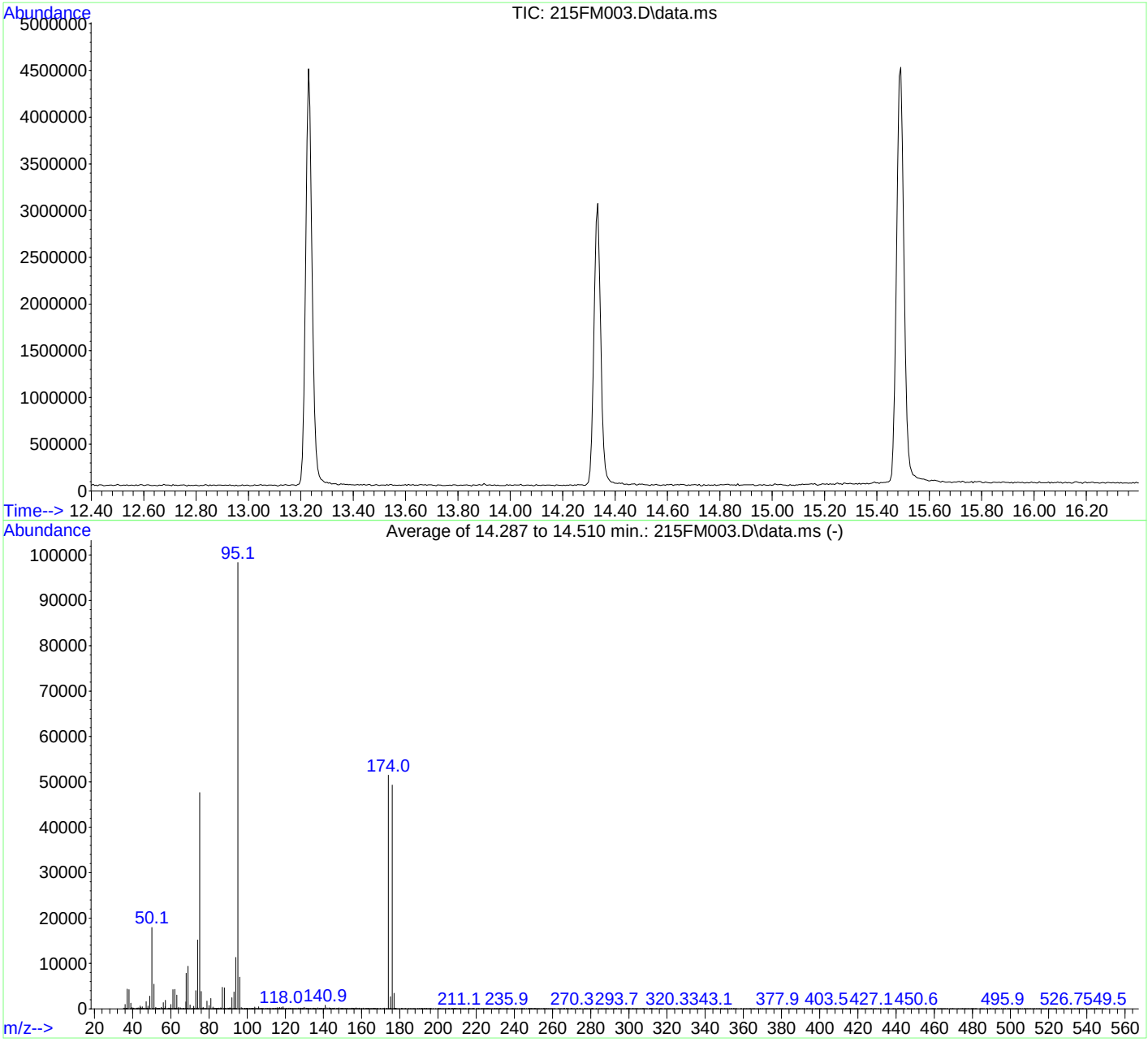
Quant Time: Jun 21 07:55:38 2021
Quant Method : C:\msdchem\1\methods\061821W.M
Quant Title : ENCO SOP VGCMS05; Element Cal 2105058
QLast Update : Mon Jun 21 07:54:29 2021
Response via : Initial Calibration



Data Path : C:\msdchem\1\data\061821\
Data File : 215FM003.D
Acq On : 18 Jun 2021 7:34 am
Operator : kkw
Sample : tun1
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\061821W.M
Title : ENCO SOP VGCMS05; Element Cal 2106098
Last Update : Mon Jun 21 08:16:13 2021



Spectrum Information: Average of 14.287 to 14.510 min.

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
95	174	50	200	191.0	98343	PASS
96	95	5	9	7.1	6939	PASS
173	174	0.00	2	0.2	110	PASS
174	95	50	200	52.3	51480	PASS
175	174	5	9	5.2	2692	PASS
176	174	95	105	95.8	49319	PASS
177	176	5	10	7.0	3428	PASS

ANALYSIS SEQUENCE

AA67203

Instrument: OVGCMS2

Calibration ID: 2107025

Printed: 7/7/2021 2:57:17PM

Lab Number	Analysis	Container	Order	Position	STD ID	ISTD ID	Client	Comments
AA67203-TUN1	QC		1		A1B1157			
AA67203-CAL1	QC		2		A1G0352	A1E0960		
AA67203-CAL2	QC		3		A1G0357	A1E0960		
AA67203-CAL3	QC		4		A1G0358	A1E0960		
AA67203-CAL4	QC		5		A1G0360	A1E0960		
AA67203-CAL5	QC		6		A1G0361	A1E0960		
AA67203-CAL6	QC		7		A1G0362	A1E0960		
AA67203-CAL7	QC		8		A1G0363	A1E0960		
AA67203-CAL8	QC		9		A1G0364	A1E0960		
AA67203-SCV1	QC		10		A1G0391	A1E0960		

Samples Loaded By 7/7/21 Date

Data Processed By 7/8/21 Date

Compound List Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
Total Cpnds : 96

PK#	Compound Name	QIon	Exp_RT	Rel_RT	Cal	#Qual	A/H	ID
1 I	Pentafluorobenzene(IS)	168	11.49	1.000	A	2	A	B
2	Dichlorodifluoromethane	85	5.93	0.516	A	3	A	B
3 **	Chloromethane	50	6.40	0.557	LO	2	A	B
4 *	Vinyl Chloride	62	6.59	0.574	LO	2	A	B
5	Bromomethane	96	7.23	0.629	QO	2	A	B
6	Chloroethane	64	7.46	0.649	LO	2	A	R
7	Trichlorofluoromethane	101	7.73	0.673	A	2	A	B
8	Trichlorotrifluoroethane	101	8.56	0.745	A	1	A	B
9	acrolein	56	8.93	0.777	A	1	A	B
10	Acetone	43	9.28	0.808	A	1	A	B
11 *m	1,1-Dichloroethene	96	8.52	0.742	LO	2	A	B
12	3-Chloropropene	76	9.12	0.793	QO	1	A	B
13	Acetonitrile	41	9.82	0.854	LO	2	A	B
14	Iodomethane	142	8.75	0.761	A	2	A	B
15	Carbon disulfide	76	8.64	0.752	A	1	A	B
16	Methylene Chloride	84	9.24	0.804	A	3	A	B
17	Methyl tert-butyl ether	73	9.55	0.832	A	2	A	B
18	Acrylonitrile	53	10.15	0.883	A	2	A	B
19	T-1,2-Dichloroethene	96	9.46	0.824	A	2	A	B
20	Isopropyl Ether	45	9.93	0.864	A	1	A	B
21	C-1,2-Dichloroethene	96	10.70	0.931	A	2	A	B
22 **	1,1-Dichloroethane	63	10.14	0.883	A	3	A	B
23	Vinyl Acetate	43	10.32	0.899	A	1	A	B
24	Chloroprene	88	10.13	0.881	A	2	A	B
25	2-Butanone	72	11.20	0.975	LO	2	A	B
26	Propionitrile	54	11.48	0.999	A	0	A	B
27	2,2-Dichloropropane	77	10.83	0.942	A	1	A	B
28	Methacrylonitrile	67	11.51	1.002	A	1	A	B
29 *	Chloroform	83	10.92	0.950	A	2	A	B
30 S	Dibromofluoromethane	113	11.09	0.966	A	0	A	B
31	Dibromofluoromethane	113	11.10	0.966	A	0	A	B
32	Bromochloromethane	128	10.90	0.948	A	2	A	B
33	1,1,1-Trichloroethane	97	11.21	0.976	A	2	A	B
34	1,1-Dichloropropene	75	11.31	0.985	A	2	A	B
35	Diethyl Ether	59	8.16	0.710	A	2	A	B
36	Methyl Acetate	74	9.42	0.820	LO	2	A	B
37	Cyclohexane	56	10.98	0.956	A	2	A	B
38 I	1,4-Difluorobenzene(IS)	114	12.04	1.000	A	2	A	B
39	Methyl Cyclohexane	55	12.10	1.005	A	2	A	B
40	Carbon Tetrachloride	117	11.18	0.928	A	2	A	B
41	1,2-Dichloroethane	62	11.70	0.971	A	2	A	B
42 m	Benzene	78	11.55	0.960	A	2	A	B
43	Isobutyl Alcohol	43	11.58	0.961	A	2	A	B
44 m	Trichloroethene	130	12.07	1.002	A	3	A	B
45 *	1,2-Dichloropropane	63	12.51	1.039	A	2	A	B
46	Methyl Methacrylate	100	12.59	1.046	A	1	A	B
47	1,4-Dioxane	88	12.72	1.056	LO	1	A	B
48	Bromodichloromethane	83	12.53	1.040	A	2	A	B
49	Dibromomethane	93	12.44	1.033	A	2	A	B
50	4-Methyl-2-Pentanone	100	13.53	1.124	A	3	A	B
51	2-Chloroethyl vinyl ether	63	12.95	1.075	QO	2	A	B
52	2-Hexanone	43	14.23	1.182	A	3	A	B
53	C-1,3-Dichloropropene	75	13.07	1.086	A	2	A	B
54 S	D8-Toluene	98	13.26	1.101	A	2	A	B
55	D8-Toluene	98	13.27	1.102	A	2	A	B
56 I	Chlorobenzene-d5(IS)	82	14.63	1.000	A	2	A	B
57 m*	Toluene	92	13.31	0.909	A	2	A	B
58	Ethyl Methacrylate	69	13.65	0.932	A	3	A	B
59	T-1,3-Dichloropropene	75	13.60	0.929	A	2	A	B
60	1,1,2-Trichloroethane	97	13.75	0.940	A	3	A	B
61	1,3-Dichloropropane	76	14.01	0.957	A	1	A	B
62	Tetrachloroethene	164	13.68	0.935	A	3	A	B
63	Dibromochloromethane	129	13.95	0.953	A	2	A	B
64	1,2-Dibromoethane	107	14.20	0.971	A	2	A	B
65 **m	Chlorobenzene	112	14.65	1.001	A	2	A	B

66		1,1,1,2-Tetrachloroethane	131	14.68	1.003	A	2	A	B
67	*	Ethylbenzene	106	14.61	0.999	A	1	A	B
68		m-xylene & p-xylene	106	14.73	1.006	A	1	A	B
69		O-Xylene	106	15.14	1.035	A	1	A	B
70	**	Bromoform	173	15.27	1.043	A	3	A	B
71		Styrene	104	15.18	1.037	A	2	A	B
72		Isopropylbenzene	105	15.41	1.053	A	1	A	B
73		1,2,3-Trichloropropane	75	16.04	1.096	A	1	A	B
74	**	1,1,2,2-Tetrachloroethane	83	15.85	1.083	A	3	A	B
75	S	Bromofluorobenzene	95	15.75	1.076	A	2	A	B
76		Bromofluorobenzene	95	15.71	1.074	A	2	A	B
77		T-1,4-dichloro-2-butene	53	16.02	1.095	LO	2	A	B
78		N-Propylbenzene	91	15.82	1.081	A	1	A	B
79	I	1,4-Dichlorobenzene-d4(IS)	152	17.00	1.000	A	2	A	B
80		Bromobenzene	156	15.91	0.936	A	2	A	B
81		1,3,5-Trimethylbenzene	105	15.97	0.939	A	1	A	B
82		2-Chlorotoluene	91	16.06	0.945	A	1	A	B
83		4-Chlorotoluene	91	16.22	0.954	A	1	A	B
84		1,2,4-Trimethylbenzene	105	16.42	0.966	A	1	A	B
85		s-Butylbenzene	105	16.55	0.973	A	1	A	B
86		tert-Butylbenzene	119	16.36	0.962	A	2	A	B
87		p-Isopropyltoluene	119	16.67	0.980	A	2	A	B
88		1,3-Dichlorobenzene	146	16.92	0.995	A	2	A	B
89		1,4-Dichlorobenzene	146	17.02	1.001	A	2	A	B
90		1,2-Dichlorobenzene	146	17.59	1.034	A	2	A	B
91		N-Butylbenzene	91	17.19	1.011	A	2	A	B
92		DBCP	75	18.70	1.100	LO	2	A	B
93		Naphthalene	128	20.70	1.218	A	0	A	B
94		1,2,4-Trichlorobenzene	180	19.98	1.175	A	2	A	B
95		Hexachlorobutadiene	225	19.85	1.167	A	2	A	B
96		1,2,3-Trichlorobenzene	180	21.15	1.244	A	2	A	B

Cal A = Average L = Linear LO = Linear w/origin Q = Quad QO = Quad w/origin
#Qual = number of qualifiers
A/H = Area or Height
ID R = R.T. B = R.T. & Q Q = Qvalue L = Largest A = All

070721.M Wed Jul 07 13:19:42 2021

Compound Name Duplication Report

Quant Method: C:\HPCHEM\1\METHODS\070721.M
Number of Compounds: 96

30 Dibromofluoromethane = 31 Dibromofluoromethane
54 D8-Toluene = 55 D8-Toluene
75 Bromofluorobenzene = 76 Bromofluorobenzene

3 Duplicate Names Detected!!!

Response Factor Report OVGCMS2

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration

Calibration Files
1 =212GB002.D 5 =212GB004.D 20 =212GB006.D
50 =212GB007.D 100 =212GB009.D 10 =212GB005.D

		Compound	1	5	20	50	100	10	Avg	%RSD
1)	i	Pentafluorobenzene(IS	----------			ISTD	----------			
2)		Dichlorodifluoromet	0.981	0.714	0.778	0.852	0.843	0.848	0.814	11.51
3)	**	Chloromethane	1.633	0.904	0.929	0.993	1.021	1.013	1.040	23.74
4)	*	Vinyl Chloride	1.133	0.704	0.722	0.788	0.798	0.803	0.804	17.22
5)		Bromomethane	0.781	0.558	0.365	0.257		0.454	0.483	37.08
6)		Chloroethane	0.723	0.375	0.354	0.372	0.354	0.426	0.416	30.40
7)		Trichlorofluorometh	0.878	0.656	0.707	0.763	0.750	0.775	0.733	10.87
8)		Trichlorotrifluoroe	0.449	0.460	0.433	0.489	0.472	0.495	0.474	7.00
9)		acrolein	0.107	0.117	0.124	0.133	0.138	0.128	0.123	10.28
10)		Acetone	0.190	0.174	0.164	0.168	0.171	0.155	0.168	6.61
11)	*m	1,1-Dichloroethene	0.612	0.461	0.422	0.462	0.454	0.502	0.493	14.98
12)		3-Chloropropene	0.556	0.299	0.244	0.252	0.259	0.248	0.302	34.89
13)		Acetonitrile	0.035	0.063	0.067	0.075	0.081	0.059	0.063#	24.32
14)		Iodomethane	0.554	0.527	0.577	0.616	0.630	0.533	0.560	11.62
15)		Carbon disulfide	1.407	1.074	1.021	1.061	1.067	1.004	1.083	12.40
16)		Methylene Chloride	0.636	0.593	0.505	0.549	0.544	0.602	0.581	11.78
17)		Methyl tert-butyl e	1.354	1.475	1.291	1.417	1.387	1.536	1.438	9.86
18)		Acrylonitrile	0.264	0.274	0.302	0.314	0.320	0.299	0.291	8.55
19)		T-1,2-Dichloroethen	0.592	0.541	0.472	0.517	0.510	0.548	0.539	10.82
20)		Isopropyl Ether	2.166	2.442	2.128	2.344	2.293	2.504	2.365	10.35
21)		C-1,2-Dichloroethen	0.615	0.602	0.505	0.557	0.562	0.612	0.581	9.19
22)	**	1,1-Dichloroethane	0.875	1.022	0.869	0.954	0.923	1.058	0.979	13.26
23)		Vinyl Acetate	1.669	1.516	1.496	1.486	1.533	1.416	1.490	6.61
24)		Chloroprene	0.393	0.400	0.408	0.437	0.443	0.399	0.405	8.54
25)		2-Butanone	0.094	0.061	0.056	0.058	0.060	0.054	0.059#	28.23
26)		Propionitrile	0.093	0.078	0.076	0.082	0.086	0.077	0.080#	9.19
27)		2,2-Dichloropropane	0.834	0.723	0.635	0.720	0.705	0.789	0.744	11.20
28)		Methacrylonitrile	0.273	0.230	0.219	0.223	0.225	0.214	0.226	8.88
29)	*	Chloroform	0.939	0.911	0.820	0.900	0.886	0.979	0.923	9.64
30)	s	Dibromofluoromethan	0.492	0.523	0.540	0.511	0.511	0.501	0.511	2.95
31)		Dibromofluoromethan	0.492	0.523	0.540	0.511	0.511	0.501	0.511	2.95
32)		Bromochloromethane	0.369	0.337	0.295	0.316	0.308	0.331	0.334	13.25
33)		1,1,1-Trichloroetha	0.705	0.707	0.625	0.702	0.690	0.729	0.705	8.45
34)		1,1-Dichloropropene	0.677	0.722	0.639	0.708	0.698	0.752	0.716	10.20
35)		Diethyl Ether	0.635	0.543	0.451	0.509	0.512	0.535	0.536	12.43
36)		Methyl Acetate	0.102	0.117	0.094	0.104	0.101	0.113	0.109	15.35
37)		Cyclohexane	0.839	0.802	0.768	0.848	0.820	0.900	0.836	6.70
38)	i	1,4-Difluorobenzene(I	----------			ISTD	----------			
39)		Methyl Cyclohexane	0.310	0.348	0.343	0.366	0.348	0.389	0.356	8.50
40)		Carbon Tetrachlorid	0.397	0.438	0.389	0.433	0.423	0.465	0.433	9.60
41)		1,2-Dichloroethane	0.411	0.426	0.371	0.391	0.390	0.432	0.417	13.40
42)	m	Benzene	1.211	1.169	1.039	1.084	1.046	1.225	1.146	11.46
43)		Isobutyl Alcohol	0.029	0.027	0.026	0.027	0.027	0.029	0.028#	6.58
44)	m	Trichloroethene	0.313	0.334	0.304	0.329	0.330	0.355	0.331	6.80
45)	*	1,2-Dichloropropane	0.450	0.352	0.315	0.338	0.333	0.379	0.360	13.04
46)		Methyl Methacrylate	0.112	0.091	0.093	0.101	0.102	0.094	0.096#	10.91
47)		1,4-Dioxane	0.002	0.003	0.003	0.003	0.003	0.002	0.003#	15.29
48)		Bromodichloromethan	0.370	0.442	0.383	0.407	0.403	0.456	0.421	12.39
49)		Dibromomethane	0.206	0.225	0.195	0.214	0.213	0.225	0.219	10.61
50)		4-Methyl-2-Pentanon	0.060	0.050	0.045	0.047	0.048	0.047	0.049#	9.77
51)		2-Chloroethyl vinyl	0.018	0.014	0.020	0.031	0.034	0.017	0.022#	41.28
52)		2-Hexanone	0.271	0.240	0.242	0.249	0.252	0.231	0.242	7.19
53)		C-1,3-Dichloroprope	0.573	0.604	0.529	0.577	0.566	0.620	0.588	8.83
54)	s	D8-Toluene	0.892	0.934	0.969	0.930	0.909	0.923	0.924	2.43
55)		D8-Toluene	0.892	0.934	0.969	0.930	0.909	0.923	0.924	2.43
56)	i	Chlorobenzene-d5(IS)	----------			ISTD	----------			

(#) = Out of Range ### Number of calibration levels exceeded format ###

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration

Calibration Files
1 =212GB002.D 5 =212GB004.D 20 =212GB006.D
50 =212GB007.D 100 =212GB009.D 10 =212GB005.D

		Compound	1	5	20	50	100	10	Avg	%RSD
57)	m*	Toluene	1.420	1.575	1.372	1.515	1.460	1.613	1.524	10.00
58)		Ethyl Methacrylate	1.043	0.900	0.915	0.960	0.970	0.883	0.934	6.27
59)		T-1,3-Dichloroprope	1.048	1.091	0.953	1.024	0.979	1.132	1.055	10.44
60)		1,1,2-Trichloroetha	0.638	0.619	0.539	0.559	0.560	0.629	0.601	11.97
61)		1,3-Dichloropropane	1.178	1.206	1.066	1.141	1.109	1.273	1.175	9.31
62)		Tetrachloroethene	0.456	0.556	0.471	0.547	0.485	0.580	0.517	9.63
63)		Dibromochloromethan	0.782	0.836	0.731	0.801	0.788	0.859	0.818	10.62
64)		1,2-Dibromoethane	0.619	0.719	0.640	0.709	0.687	0.744	0.698	9.13
65)	**m	Chlorobenzene	1.625	1.734	1.531	1.639	1.587	1.765	1.671	8.81
66)		1,1,1,2-Tetrachloro	0.648	0.696	0.597	0.646	0.623	0.705	0.661	9.63
67)	*	Ethylbenzene	0.735	0.853	0.766	0.838	0.820	0.886	0.836	10.32
68)		m-xylene & p-xylene	0.936	1.094	0.955	1.019	0.976	1.112	1.035	10.52
69)		O-Xylene	0.930	1.072	0.942	1.031	1.011	1.110	1.032	8.93
70)	**	Bromoform	0.394	0.463	0.421	0.465	0.460	0.478	0.454	7.99
71)		Styrene	1.340	1.658	1.538	1.729	1.717	1.747	1.655	9.78
72)		Isopropylbenzene	2.313	2.513	2.290	2.495	2.419	2.670	2.486	8.21
73)		1,2,3-Trichloroprop	1.030	0.882	0.811	0.889	0.868	0.904	0.915	10.55
74)	**	1,1,2,2-Tetrachloro	0.839	0.797	0.713	0.757	0.745	0.828	0.793	10.09
75)	s	Bromofluorobenzene	0.760	0.813	0.821	0.792	0.771	0.772	0.787	2.70
76)		Bromofluorobenzene	0.760	0.813	0.821	0.792	0.771	0.772	0.787	2.70
77)		T-1,4-dichloro-2-bu	0.216	0.221	0.201	0.214	0.214	0.195	0.225	19.60
78)		N-Propylbenzene	2.720	3.042	2.569	2.871	2.792	3.005	2.895	9.96
79)	i	1,4-Dichlorobenzene-d	----------ISTD----------							
80)		Bromobenzene	0.787	0.917	0.780	0.831	0.810	0.911	0.852	9.43
81)		1,3,5-Trimethylbenz	2.238	2.502	2.143	2.311	2.251	2.524	2.361	8.87
82)		2-Chlorotoluene	2.256	2.189	1.912	2.060	2.011	2.261	2.163	11.76
83)		4-Chlorotoluene	2.076	2.266	2.013	2.147	2.126	2.280	2.216	11.54
84)		1,2,4-Trimethylbenz	2.267	2.491	2.193	2.360	2.270	2.550	2.398	9.66
85)		s-Butylbenzene	2.694	2.885	2.550	2.764	2.672	2.963	2.804	8.94
86)		tert-Butylbenzene	2.041	2.199	1.894	2.079	2.011	2.234	2.111	9.68
87)		p-Isopropyltoluene	2.263	2.451	2.197	2.385	2.358	2.571	2.408	7.80
88)		1,3-Dichlorobenzene	1.391	1.469	1.307	1.435	1.418	1.494	1.445	7.68
89)		1,4-Dichlorobenzene	1.391	1.538	1.353	1.456	1.454	1.518	1.479	8.64
90)		1,2-Dichlorobenzene	1.313	1.374	1.243	1.369	1.369	1.419	1.368	6.59
91)		N-Butylbenzene	2.121	2.090	1.880	2.083	2.062	2.155	2.098	7.37
92)		DBCP	0.249	0.153	0.117	0.129	0.129	0.145	0.160	32.92
93)		Naphthalene	1.496	1.116	1.137	1.265	1.405	1.195	1.280	10.23
94)		1,2,4-Trichlorobenz	0.679	0.598	0.584	0.645	0.674	0.641	0.643	5.68
95)		Hexachlorobutadiene	0.251	0.275	0.257	0.282	0.290	0.291	0.279	7.32
96)		1,2,3-Trichlorobenz	0.551	0.411	0.417	0.456	0.496	0.467	0.468	9.50

(#) = Out of Range ### Number of calibration levels exceeded format ###

Sequence Name: C:\HPchem\1\SEQUENCE\212GB.S
Comment:
Operator: KG
Data Path: C:\HPchem\1\DATA\070721\
Pre-Seq Cmd:
Post-Seq Cmd:

Method Sections To Run
(X) Full Method
( ) Reprocessing Only

On A Barcode Mismatch
(X) Inject Anyway
( ) Don't Inject

Line	Type	Vial	DataFile	Method	Sample Name
1	Sample	1	212GB001	8260S	TUNE1
2	Sample	2	212GB002	8260S	AA67203-CAL1
3	Sample	3	212GB003	8260S	AA67203-CAL2
4	Sample	4	212GB004	8260S	AA67203-CAL3
5	Sample	5	212GB005	8260S	AA67203-CAL4
6	Sample	6	212GB006	8260S	AA67203-CAL5
7	Sample	7	212GB007	8260S	AA67203-CAL6
8	Sample	8	212GB008	8260S	AA67203-CAL7
9	Sample	9	212GB009	8260S	AA67203-CAL8
10	Sample	10	212GB010	8260S	RINSE
11	Sample	11	212GB011	8260S	RINSE
12	Sample	12	212GB012	8260S	AA67203-SCV1
13	Sample	13	212GB013	8260S	1G07014-BS1
14	Sample	14	212GB014	8260S	1G07014-MS1
15	Sample	14	212GB015	8260S	1G07014-MSD1
16	Sample	15	212GB016	8260S	1G07014-BLK1
17	Sample	16	212GB017	8260S	AE05109-03
18	Sample	17	212GB018	8260S	AE05109-01
19	Sample	18	212GB019	8260S	AE05109-02
20	Sample	19	212GB020	8260S	AE05109-04
21	Sample	20	212GB021	8260S	AE05109-05
22	Sample	21	212GB022	8260S	AA67227-LCV1

Manual Integration Review Form

ENVIRONMENTAL CONSERVATION LABORATORIES, INC. ☐ Cary ☐ Jacksonville ☑ Orlando

I hereby attest that the manual integrations contained in this package have been thoroughly reviewed and are in agreement with the associated hardcopy data.

The electronic files listed below have been reviewed for accuracy, completeness and comply with ENCO labs QA-11 Manual Integration Policy including:

- "Before" and "After" chromatograms are provided
- Manual integrations are indicated on expanded scale "after" chromatograms at a scale large enough to see the manual integration performed.
- Reintegration technique marked if available on the data system
- Technical justification for manual integration
- Appropriate flags indicating which analytes were manually integrated are included in the raw data
- Analyst's initials and date.

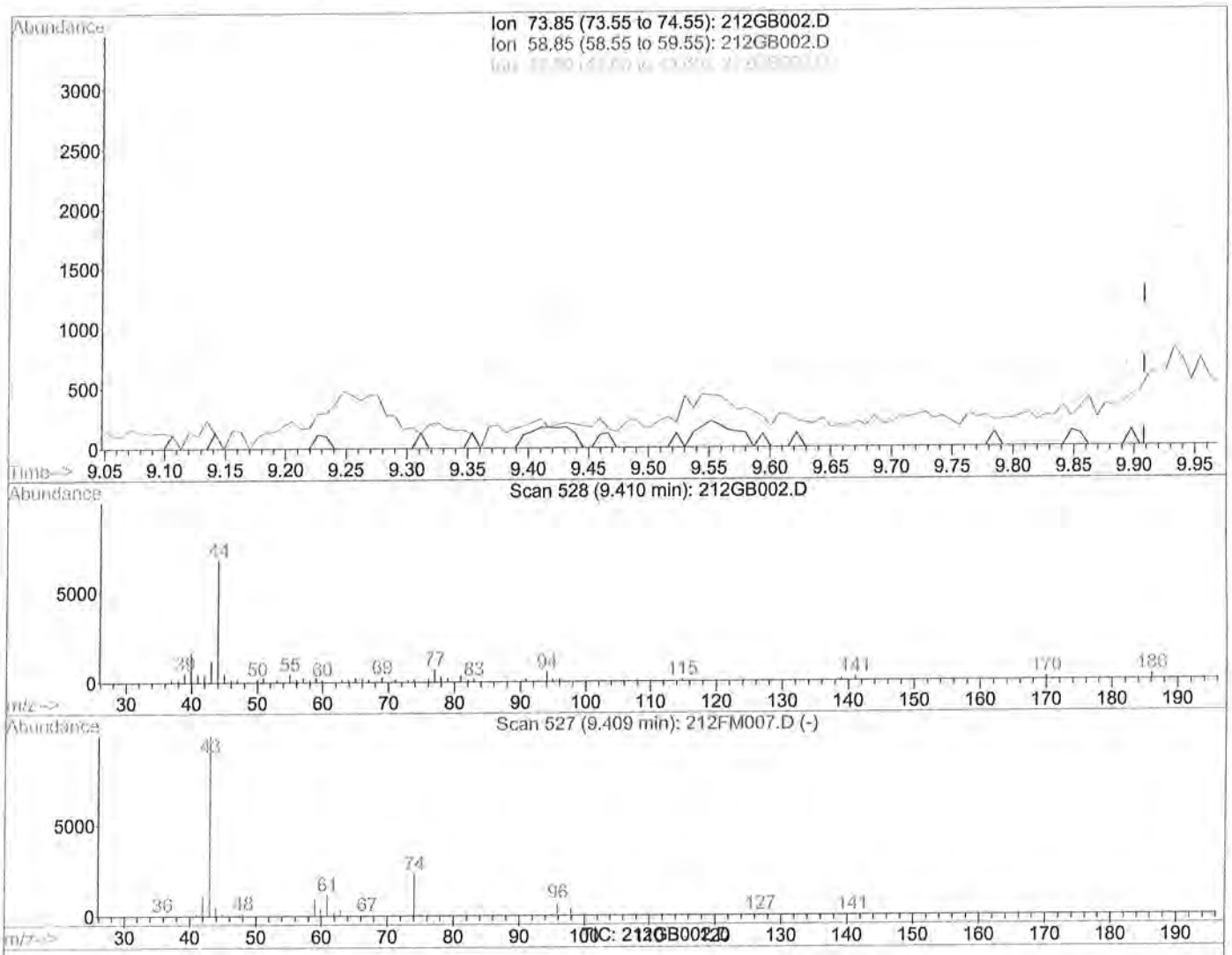
Instrument ID:	OVGCMS2
Sequence/Batch ID:	AA67203
Data File Prefix:	212BB
Date and Time Range of MIs:	7/7/21 9:05-9:05 7/8/21 8:05
Reviewer Print Name:	Karen Watson
Reviewer Signature:	
Date of Review:	07/08/21

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\070721\212GB002.D
Acq On : 7 Jul 2021 8:38 am
Sample : AA67203-CAL1
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:00 2021

Vial: 2
Operator: KG
Inst : OVGCMS2
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Multiple Level Calibration



(36) Methyl Acetate

9.41min 0.00ug/kg

response 0

Ion	Exp%	Act%
73.85	100	0.00
58.85	71.40	0.00#
42.90	526.20	0.00#
0.00	0.00	0.00

Select One:

[✓] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[✓] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date KH 7/7/21

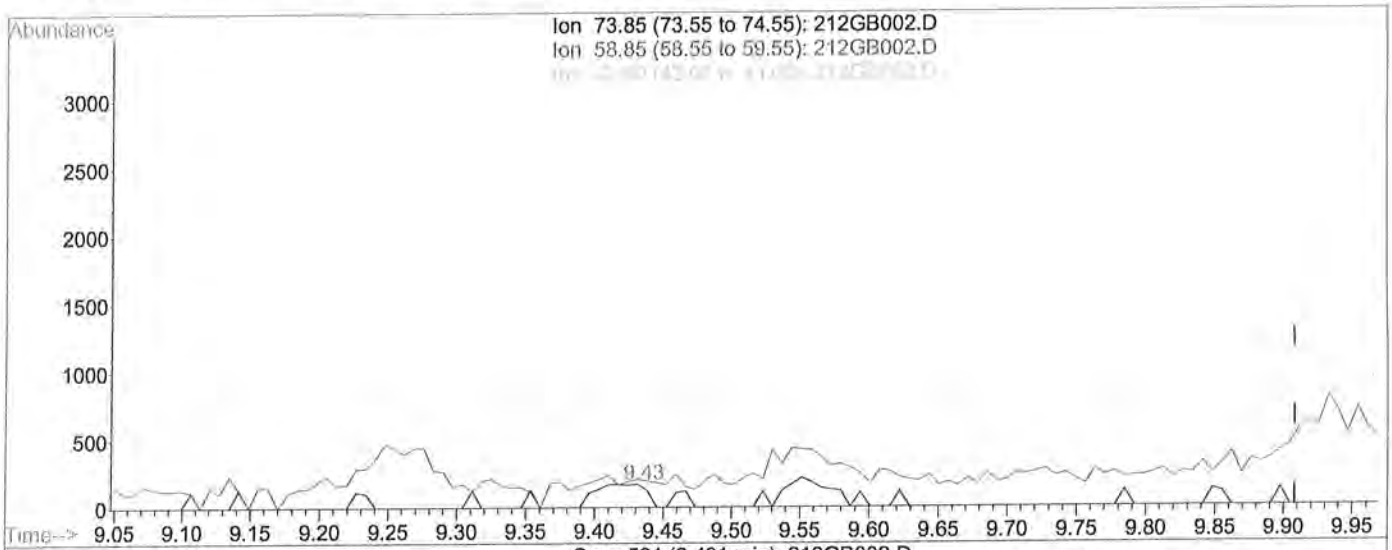
Review by/Date:

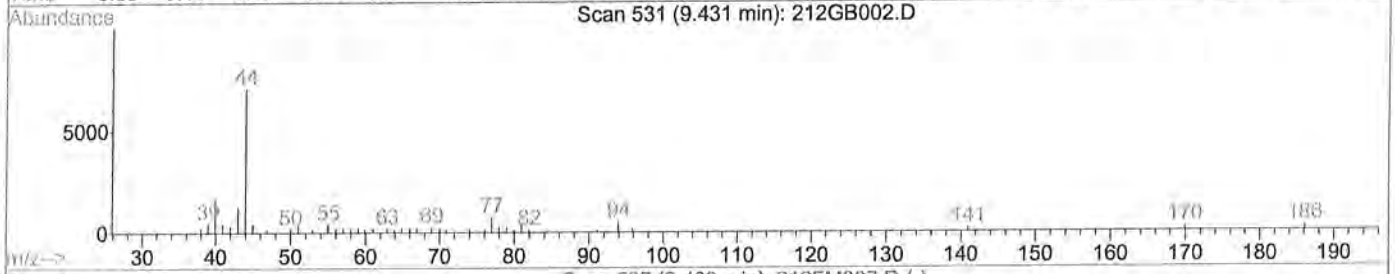
Quantitation Report (Qedit)

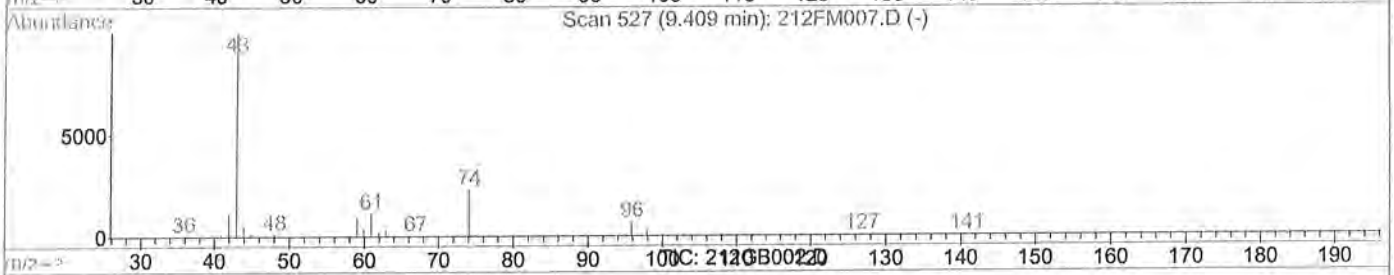
Data File : C:\HPCHEM\1\DATA\070721\212GB002.D
Acq On : 7 Jul 2021 8:38 am
Sample : AA67203-CAL1
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:05 2021

Vial: 2
Operator: KG
Inst : OVGCMS2
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Multiple Level Calibration







(36) Methyl Acetate

9.43min 1.10ug/kg m

response 440

Ion	Exp%	Act%
73.85	100	100
58.85	71.40	0.00#
42.90	526.20	0.00#
0.00	0.00	0.00

Select One:

[ ] Original Integration [X] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

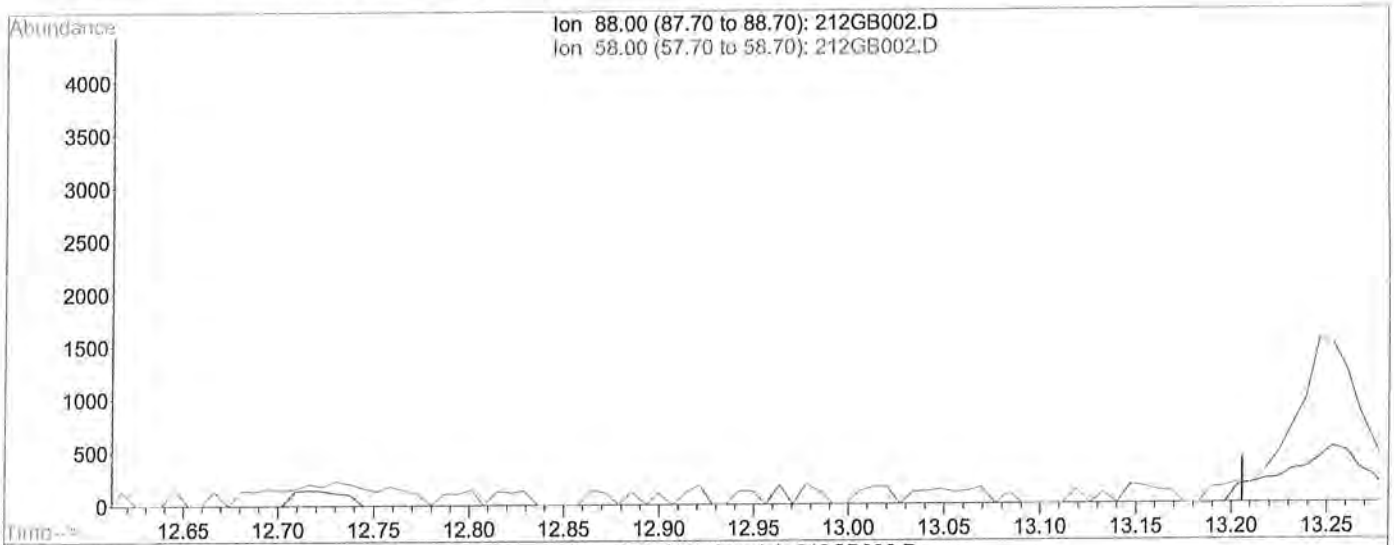
Review by/Date KS 7/7/21

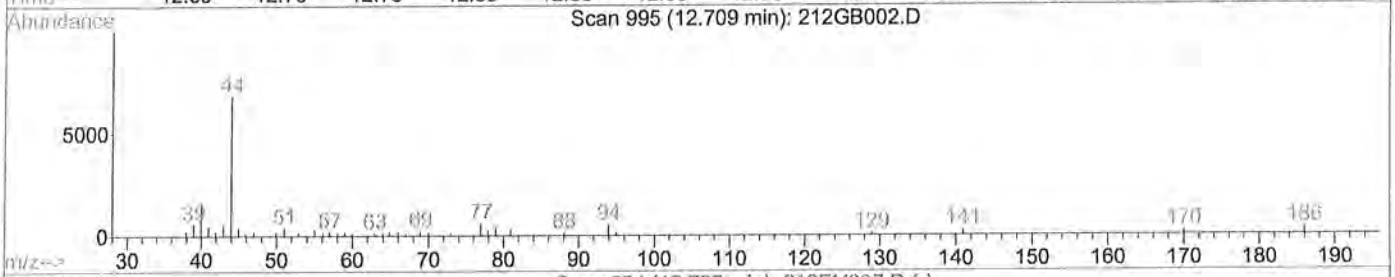
Review by/Date:

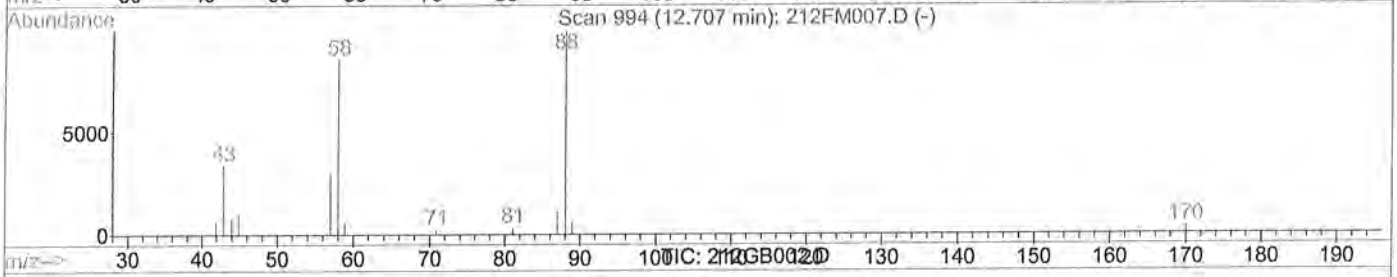
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\070721\212GB002.D Vial: 2
Acq On : 7 Jul 2021 8:38 am Operator: KG
Sample : AA67203-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:05 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Multiple Level Calibration







(47) 1,4-Dioxane

12.71min 0.00ug/kg

response 0

Ion	Exp%	Act%
88.00	100	0.00
58.00	78.50	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[X] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

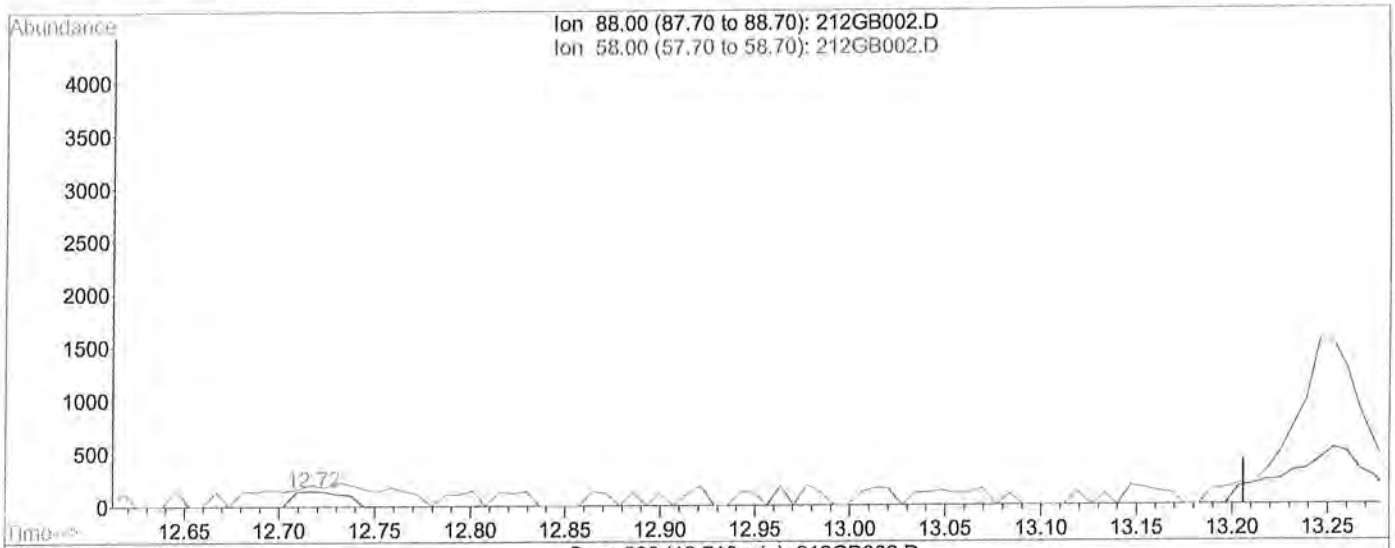
Review by/Date KP 7/7/21

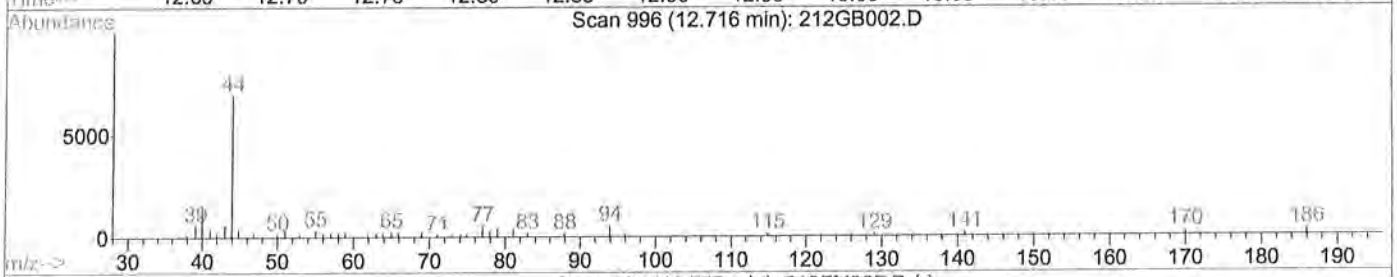
Review by/Date:

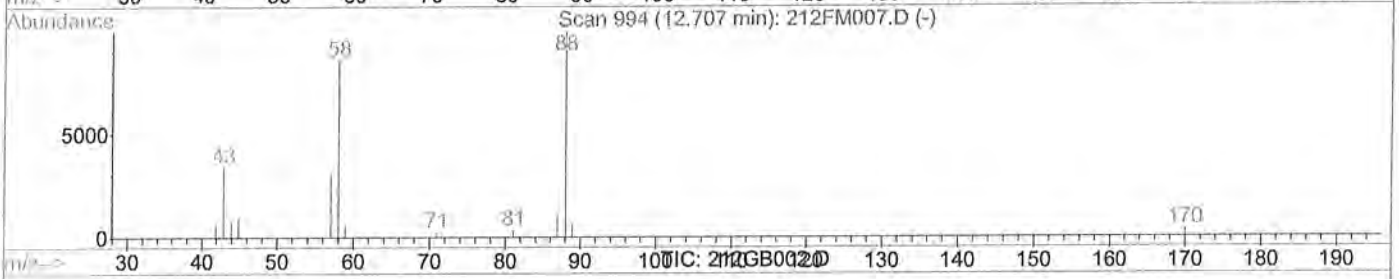
Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\070721\212GB002.D Vial: 2
Acq On : 7 Jul 2021 8:38 am Operator: KG
Sample : AA67203-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:05 2021 Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Multiple Level Calibration







(47) 1,4-Dioxane

12.72min 14.56ug/kg m

response 269

Ion	Exp%	Act%
88.00	100	100
58.00	78.50	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[ ] Poor integration (peak tailing, baseline selection)

[✓] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date KS 7/7/21

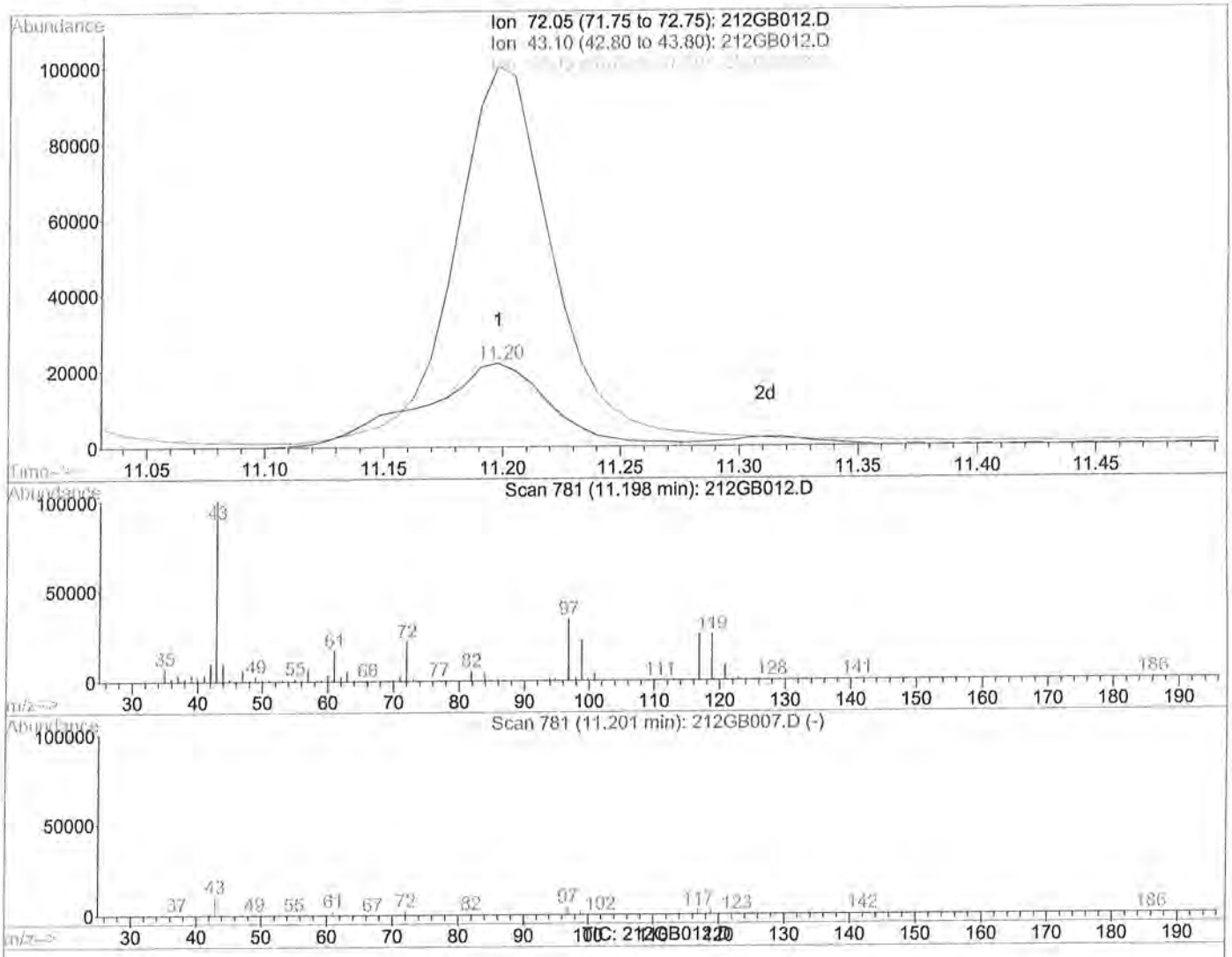
Review by/Date:

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\070721\212GB012.D
Acq On : 7 Jul 2021 1:51 pm
Sample : AA67203-SCV1
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 7 14:13 2021

Vial: 12
Operator: KG
Inst : OVGCMS2
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Multiple Level Calibration



(25) 2-Butanone

11.20min 358.03ug/kg

response 82388

Ion	Exp%	Act%
72.05	100	100
43.10	499.90	353.72
57.00	33.40	22.89#
0.00	0.00	0.00

Select One:

[X] Original Integration [ ] Manual Integration

Select reason for manual integration:

[X] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

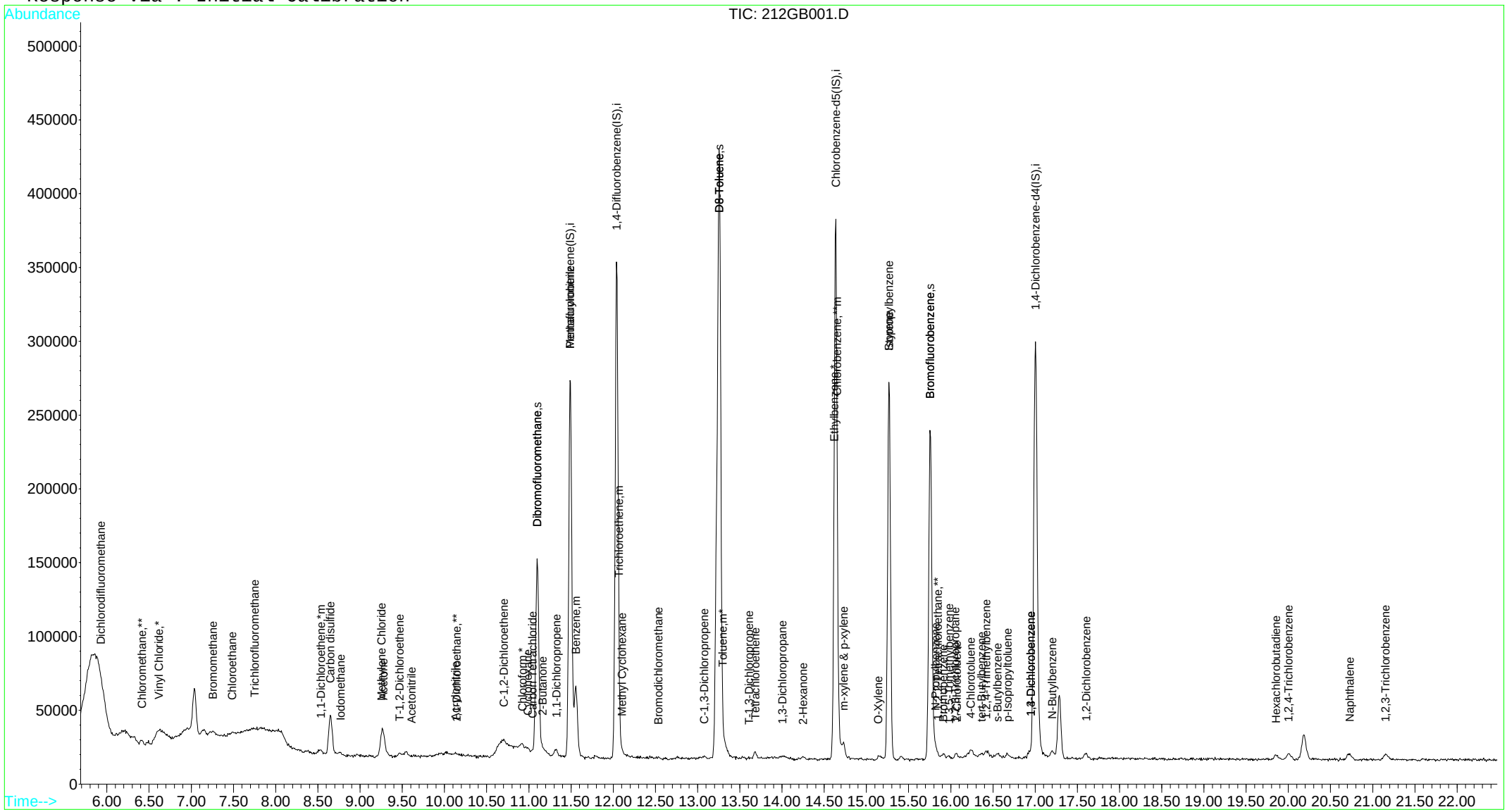
Review by/Date KEP 7/8/21

Review by/Date:

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB001.D Vial: 1
Acq On : 7 Jul 2021 7:58 am Operator: KG
Sample : TUNE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 8:36 2021 Quant Results File: 061821.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB001.D Vial: 1
Acq On : 7 Jul 2021 7:58 am Operator: KG
Sample : TUNE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 8:36 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	217793	50.00	ug/kg	0.02
38) 1,4-Difluorobenzene(IS)	12.04	114	356237	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	166110	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	131805	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	108604	52.23	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.46%			
54) D8-Toluene	13.26	98	326614	48.79	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 146		Recovery = 97.58%			
75) Bromofluorobenzene	15.75	95	128661	50.81	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 101.62%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	1960	0.63	ug/kg#	24
3) Chloromethane	6.42	50	12975	3.62	ug/kg	94
4) Vinyl Chloride	6.61	62	2766	0.96	ug/kg#	88
5) Bromomethane	7.26	96	1606	0.89	ug/kg#	59
6) Chloroethane	7.48	64	1902	1.15	ug/kg#	44
7) Trichlorofluoromethane	7.76	101	871	0.23	ug/kg#	26
8) Trichlorotrifluoroethane	0.00	101	0	N.D.		
9) acrolein	0.00	56	0	N.D.		
10) Acetone	9.28	43	19012	24.33	ug/kg	80
11) 1,1-Dichloroethene	8.53	96	2202	1.06	ug/kg#	59
12) 3-Chloropropene	0.00	76	0	N.D.		
13) Acetonitrile	9.60	41	657	2.54	ug/kg#	44
14) Iodomethane	8.77	142	4662	1.47	ug/kg#	86
15) Carbon disulfide	8.65	76	61754	9.80	ug/kg	100
16) Methylene Chloride	9.25	84	1496	0.59	ug/kg#	66
17) Methyl tert-butyl ether	0.00	73	0	N.D.		
18) Acrylonitrile	10.14	53	984	0.83	ug/kg#	25
19) T-1,2-Dichloroethene	9.47	96	1746	0.80	ug/kg	78
20) Isopropyl Ether	0.00	45	0	N.D.		
21) C-1,2-Dichloroethene	10.71	96	1636	0.69	ug/kg	84
22) 1,1-Dichloroethane	10.15	63	634	0.14	ug/kg#	1
23) Vinyl Acetate	0.00	43	0	N.D.		
24) Chloroprene	0.00	88	0	N.D.		
25) 2-Butanone	11.17	72	1905	8.32	ug/kg#	1
26) Propionitrile	0.00	54	0	N.D.		
27) 2,2-Dichloropropane	0.00	77	0	N.D.		
28) Methacrylonitrile	11.49	67	1389	1.58	ug/kg#	24
29) Chloroform	10.92	83	841	0.18	ug/kg#	1
31) Dibromofluoromethane	11.10	113	108604	52.23	ug/kg	100
32) Bromochloromethane	0.00	128	0	N.D.		
33) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
34) 1,1-Dichloropropene	11.32	75	2723	0.81	ug/kg	91
35) Diethyl Ether	0.00	59	0	N.D.		
36) Methyl Acetate	0.00	74	0	N.D.		
37) Cyclohexane	10.98	56	967	0.28	ug/kg#	76
39) Methyl Cyclohexane	12.11	55	974	0.32	ug/kg#	72
40) Carbon Tetrachloride	11.04	117	645	0.17	ug/kg#	12
41) 1,2-Dichloroethane	0.00	62	0	N.D.		
42) Benzene	11.56	78	53779	5.97	ug/kg#	50
43) Isobutyl Alcohol	0.00	43	0	N.D.		
44) Trichloroethene	12.07	130	1564	0.62	ug/kg#	1
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Methyl Methacrylate	0.00	100	0	N.D.		
47) 1,4-Dioxane	0.00	88	0	N.D.		
48) Bromodichloromethane	12.53	83	949	0.27	ug/kg#	24
49) Dibromomethane	0.00	93	0	N.D.		
50) 4-Methyl-2-Pentanone	0.00	100	0	N.D.		
51) 2-Chloroethyl vinyl ether	0.00	63	0	N.D.		
52) 2-Hexanone	14.24	43	1497	0.90	ug/kg#	53

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\070721\212GB001.D Vial: 1
Acq On : 7 Jul 2021 7:58 am Operator: KG
Sample : TUNE1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 8:36 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.08	75	1158	0.26 ug/kg#	75
55) D8-Toluene	13.26	98	326614	48.79 ug/kg	92
57) Toluene	13.30	92	2186	0.49 ug/kg#	84
58) Ethyl Methacrylate	0.00	69	0	N.D.	
59) T-1,3-Dichloropropene	13.60	75	1034	0.31 ug/kg#	30
60) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
61) 1,3-Dichloropropane	14.01	76	1027	0.29 ug/kg#	43
62) Tetrachloroethene	13.68	164	1102	0.68 ug/kg#	76
63) Dibromochloromethane	0.00	129	0	N.D.	
64) 1,2-Dibromoethane	0.00	107	0	N.D.	
65) Chlorobenzene	14.66	112	4922	1.02 ug/kg#	68
66) 1,1,1,2-Tetrachloroethane	0.00	131	0	N.D.	
67) Ethylbenzene	14.61	106	1155	0.48 ug/kg#	63
68) m-xylene & p-xylene	14.73	106	3318	1.11 ug/kg	97
69) O-Xylene	15.15	106	965	0.33 ug/kg	78
70) Bromoform	0.00	173	0	N.D.	
71) Styrene	15.26	104	2260	0.44 ug/kg#	1
72) Isopropylbenzene	15.27	105	1741	0.24 ug/kg#	77
73) 1,2,3-Trichloropropane	16.04	75	925	0.34 ug/kg#	12
74) 1,1,2,2-Tetrachloroethane	15.85	83	1005	0.45 ug/kg#	31
76) Bromofluorobenzene	15.75	95	128661	50.81 ug/kg#	82
77) T-1,4-dichloro-2-butene	0.00	53	0	N.D.	
78) N-Propylbenzene	15.82	91	6545	0.73 ug/kg	92
80) Bromobenzene	15.92	156	909	0.41 ug/kg	82
81) 1,3,5-Trimethylbenzene	15.98	105	1961	0.34 ug/kg	89
82) 2-Chlorotoluene	16.06	91	3167	0.59 ug/kg	89
83) 4-Chlorotoluene	16.23	91	4231	0.76 ug/kg	92
84) 1,2,4-Trimethylbenzene	16.43	105	3380	0.60 ug/kg	97
85) s-Butylbenzene	16.55	105	3035	0.47 ug/kg	95
86) tert-Butylbenzene	16.36	119	1565	0.31 ug/kg	76
87) p-Isopropyltoluene	16.68	119	3001	0.52 ug/kg	85
88) 1,3-Dichlorobenzene	16.94	146	2926	0.81 ug/kg	93
89) 1,4-Dichlorobenzene	16.94	146	2926	0.78 ug/kg	95
90) 1,2-Dichlorobenzene	17.60	146	2344	0.69 ug/kg	94
91) N-Butylbenzene	17.20	91	4089	0.82 ug/kg	88
92) DBCP	0.00	75	0	N.D.	
93) Naphthalene	20.72	128	6818	1.89 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	2568	1.39 ug/kg	98
95) Hexachlorobutadiene	19.86	225	1140	1.13 ug/kg	90
96) 1,2,3-Trichlorobenzene	21.15	180	2770	1.93 ug/kg#	80

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB002.D Vial: 2
Acq On : 7 Jul 2021 8:38 am Operator: KG
Sample : AA67203-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:05 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	215175	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	353915	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	163131	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	128103	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	105960	51.58	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 103.16%			
54) D8-Toluene	13.25	98	315861	47.49	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 94.98%			
75) Bromofluorobenzene	15.75	95	123939	49.84	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 99.68%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	4223	1.38	ug/kg#	81
3) Chloromethane	6.41	50	7027	1.98	ug/kg	98
4) Vinyl Chloride	6.61	62	4875	1.71	ug/kg#	94
5) Bromomethane	7.26	96	3360	1.89	ug/kg#	91
6) Chloroethane	7.49	64	3110	1.90	ug/kg	76
7) Trichlorofluoromethane	7.74	101	3779	1.03	ug/kg	92
8) Trichlorotrifluoroethane	8.56	101	1933	0.89	ug/kg	83
9) acrolein	8.94	56	4616	10.48	ug/kg	91
10) Acetone	9.28	43	4098	5.31	ug/kg	60
11) 1,1-Dichloroethene	8.53	96	2635	1.28	ug/kg#	61
12) 3-Chloropropene	9.13	76	2394	1.92	ug/kg#	35
13) Acetonitrile	9.93	41	1526	5.96	ug/kg	75
14) Iodomethane	8.75	142	11921	3.82	ug/kg	97
15) Carbon disulfide	8.64	76	30283	4.86	ug/kg	99
16) Methylene Chloride	9.23	84	2735	1.10	ug/kg	94
17) Methyl tert-butyl ether	9.56	73	5826	0.90	ug/kg	94
18) Acrylonitrile	10.17	53	11356	9.70	ug/kg	94
19) T-1,2-Dichloroethene	9.47	96	2548	1.19	ug/kg	83
20) Isopropyl Ether	9.93	45	9322	0.96	ug/kg	96
21) C-1,2-Dichloroethene	10.70	96	2647	1.12	ug/kg	94
22) 1,1-Dichloroethane	10.14	63	3767	0.86	ug/kg	79
23) Vinyl Acetate	10.34	43	35904	5.82	ug/kg	100
24) Chloroprene	10.12	88	1692	0.90	ug/kg#	95
25) 2-Butanone	11.21	72	2026	8.96	ug/kg#	42
26) Propionitrile	11.49	54	4007	14.30	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	3587	0.92	ug/kg#	1
28) Methacrylonitrile	11.52	67	11759	13.53	ug/kg	81
29) Chloroform	10.91	83	4039	0.89	ug/kg	91
31) Dibromofluoromethane	11.09	113	105960	51.58	ug/kg	100
32) Bromochloromethane	10.90	128	1587	1.22	ug/kg	86
33) 1,1,1-Trichloroethane	11.20	97	3033	0.83	ug/kg	94
34) 1,1-Dichloropropene	11.31	75	2915	0.88	ug/kg	91
35) Diethyl Ether	8.16	59	2732	1.24	ug/kg	90
36) Methyl Acetate	9.43	74	440m	1.10	ug/kg	
37) Cyclohexane	10.98	56	3611	1.06	ug/kg	96
39) Methyl Cyclohexane	12.10	55	2195	0.74	ug/kg#	87
40) Carbon Tetrachloride	11.17	117	2811	0.75	ug/kg	97
41) 1,2-Dichloroethane	11.70	62	2912	0.75	ug/kg#	64
42) Benzene	11.55	78	8569	0.96	ug/kg	97
43) Isobutyl Alcohol	11.58	43	4097	20.76	ug/kg	98
44) Trichloroethene	12.06	130	2213	0.89	ug/kg#	1
45) 1,2-Dichloropropane	12.52	63	3186	1.24	ug/kg	85
46) Methyl Methacrylate	12.59	100	794	1.13	ug/kg	84
47) 1,4-Dioxane	12.72	88	269m	14.56	ug/kg	
48) Bromodichloromethane	12.53	83	2621	0.75	ug/kg#	80
49) Dibromomethane	12.44	93	1455	0.87	ug/kg	83
50) 4-Methyl-2-Pentanone	13.53	100	2141	6.77	ug/kg	79
51) 2-Chloroethyl vinyl ether	12.69	63	641	1.56	ug/kg#	46
52) 2-Hexanone	14.23	43	9583	5.81	ug/kg#	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB002.D Vial: 2
Acq On : 7 Jul 2021 8:38 am Operator: KG
Sample : AA67203-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:05 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

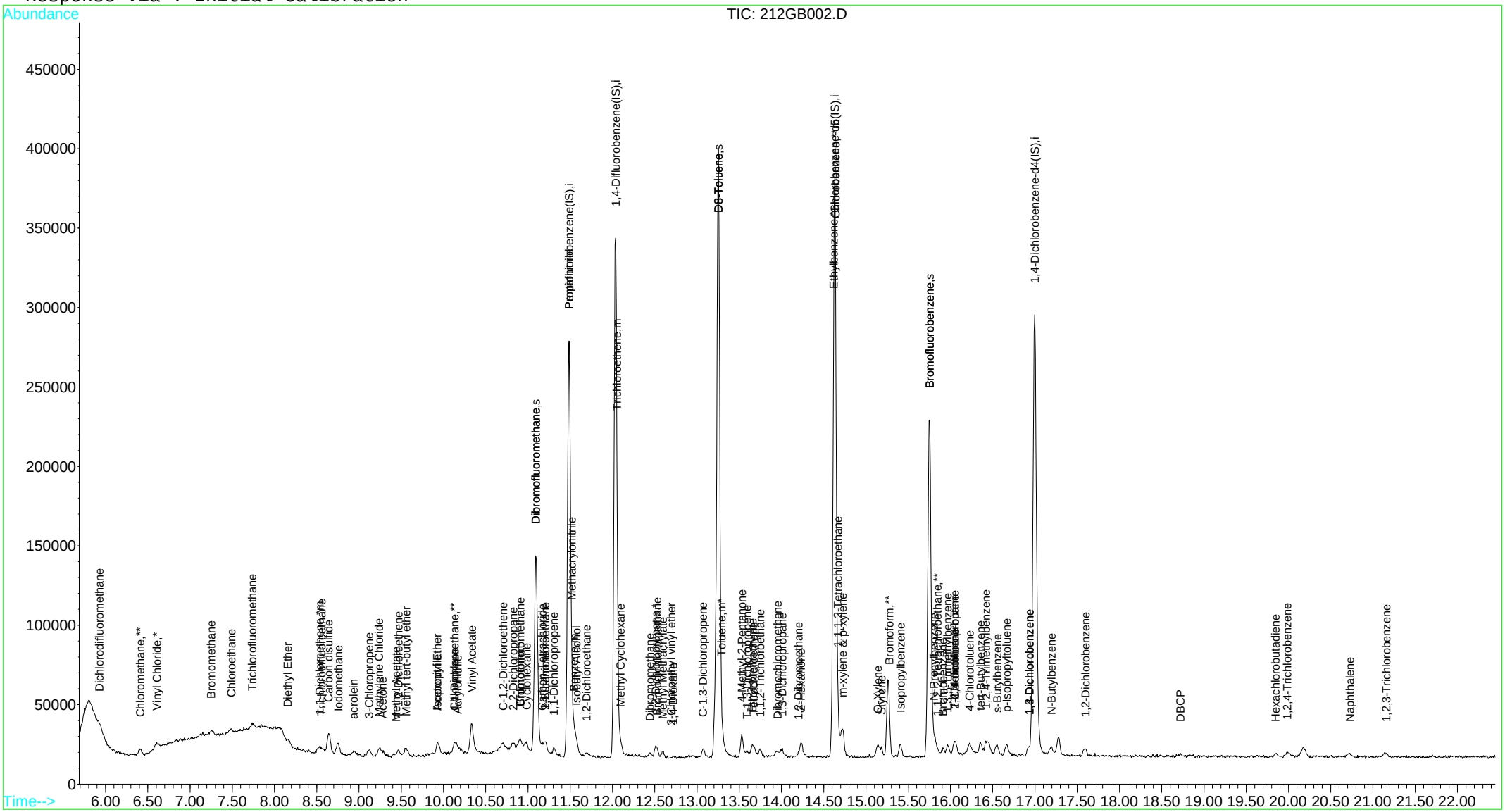
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	4059	0.90	ug/kg	89
55) D8-Toluene	13.25	98	315861	47.49	ug/kg	91
57) Toluene	13.30	92	4632	1.05	ug/kg	94
58) Ethyl Methacrylate	13.65	69	3404	1.32	ug/kg#	94
59) T-1,3-Dichloropropene	13.59	75	3418	1.05	ug/kg	83
60) 1,1,2-Trichloroethane	13.75	97	2083	1.25	ug/kg	87
61) 1,3-Dichloropropane	14.00	76	3843	1.09	ug/kg	100
62) Tetrachloroethene	13.68	164	1489	0.93	ug/kg	89
63) Dibromochloromethane	13.95	129	2552	1.11	ug/kg#	86
64) 1,2-Dibromoethane	14.20	107	2019	1.02	ug/kg#	81
65) Chlorobenzene	14.64	112	5302	1.12	ug/kg#	64
66) 1,1,1,2-Tetrachloroethane	14.67	131	2113	1.08	ug/kg#	1
67) Ethylbenzene	14.61	106	2397	1.02	ug/kg	90
68) m-xylene & p-xylene	14.72	106	6106	2.09	ug/kg	93
69) O-Xylene	15.14	106	3033	1.07	ug/kg	95
70) Bromoform	15.28	173	1286	0.93	ug/kg#	96
71) Styrene	15.18	104	4372	0.86	ug/kg	95
72) Isopropylbenzene	15.41	105	7546	1.05	ug/kg	97
73) 1,2,3-Trichloropropane	16.04	75	3360	1.27	ug/kg	95
74) 1,1,2,2-Tetrachloroethane	15.85	83	2737	1.25	ug/kg#	88
76) Bromofluorobenzene	15.75	95	123939	49.84	ug/kg#	81
77) T-1,4-dichloro-2-butene	16.05	53	704	1.12	ug/kg#	72
78) N-Propylbenzene	15.81	91	8875	1.01	ug/kg	98
80) Bromobenzene	15.92	156	2016	0.94	ug/kg	79
81) 1,3,5-Trimethylbenzene	15.97	105	5733	1.04	ug/kg	99
82) 2-Chlorotoluene	16.06	91	5781	1.11	ug/kg	99
83) 4-Chlorotoluene	16.23	91	5318	0.98	ug/kg	94
84) 1,2,4-Trimethylbenzene	16.42	105	5807	1.05	ug/kg	100
85) s-Butylbenzene	16.55	105	6901	1.10	ug/kg	94
86) tert-Butylbenzene	16.35	119	5229	1.07	ug/kg	87
87) p-Isopropyltoluene	16.67	119	5797	1.04	ug/kg	89
88) 1,3-Dichlorobenzene	16.93	146	3563	1.01	ug/kg	94
89) 1,4-Dichlorobenzene	16.93	146	3563	0.98	ug/kg	96
90) 1,2-Dichlorobenzene	17.60	146	3363	1.02	ug/kg	96
91) N-Butylbenzene	17.19	91	5435	1.12	ug/kg	96
92) DBCP	18.71	75	639	1.86	ug/kg#	1
93) Naphthalene	20.72	128	3834	1.09	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	1739	0.97	ug/kg#	82
95) Hexachlorobutadiene	19.84	225	642	0.65	ug/kg#	19
96) 1,2,3-Trichlorobenzene	21.16	180	1411	1.01	ug/kg#	82

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB002.D Vial: 2
Acq On : 7 Jul 2021 8:38 am Operator: KG
Sample : AA67203-CAL1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:05 2021 Quant Results File: 061821.RES

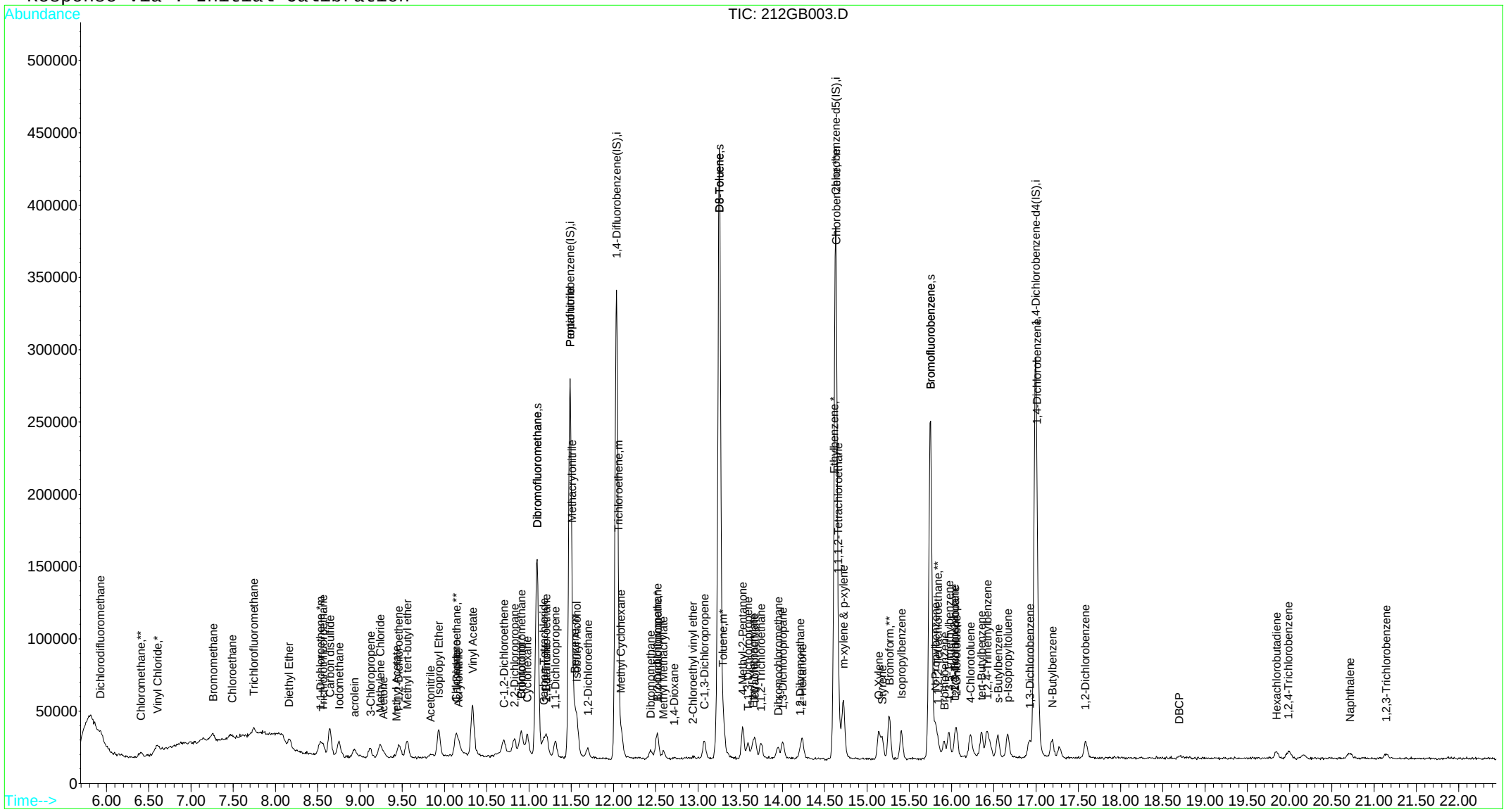
Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB003.D Vial: 3
Acq On : 7 Jul 2021 9:12 am Operator: KG
Sample : AA67203-CAL2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:34 2021 Quant Results File: 061821.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB003.D Vial: 3
Acq On : 7 Jul 2021 9:12 am Operator: KG
Sample : AA67203-CAL2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:34 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	211652	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	347121	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	158805	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	127077	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	115951	57.38	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 114.76%			
54) D8-Toluene	13.25	98	353456	54.18	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 108.36%			
75) Bromofluorobenzene	15.74	95	137065	56.62	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 113.24%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	5733	1.91	ug/kg#	95
3) Chloromethane	6.41	50	7155	2.05	ug/kg	89
4) Vinyl Chloride	6.60	62	6094	2.18	ug/kg	86
5) Bromomethane	7.26	96	4075	2.33	ug/kg#	78
6) Chloroethane	7.49	64	3164	1.97	ug/kg	95
7) Trichlorofluoromethane	7.74	101	5213	1.45	ug/kg	95
8) Trichlorotrifluoroethane	8.57	101	4560	2.13	ug/kg	81
9) acrolein	8.93	56	8781	20.28	ug/kg	95
10) Acetone	9.28	43	6629	8.73	ug/kg	77
11) 1,1-Dichloroethene	8.53	96	5092	2.51	ug/kg	72
12) 3-Chloropropene	9.13	76	2611	2.13	ug/kg	69
13) Acetonitrile	9.84	41	4179	16.60	ug/kg	73
14) Iodomethane	8.75	142	18261	5.94	ug/kg	97
15) Carbon disulfide	8.64	76	42108	6.87	ug/kg	98
16) Methylene Chloride	9.24	84	6006	2.45	ug/kg	94
17) Methyl tert-butyl ether	9.56	73	14626	2.28	ug/kg	98
18) Acrylonitrile	10.17	53	21257	18.46	ug/kg	94
19) T-1,2-Dichloroethene	9.46	96	5488	2.60	ug/kg	88
20) Isopropyl Ether	9.93	45	24297	2.54	ug/kg	96
21) C-1,2-Dichloroethene	10.70	96	5669	2.45	ug/kg	96
22) 1,1-Dichloroethane	10.14	63	10591	2.47	ug/kg	92
23) Vinyl Acetate	10.33	43	56030	9.23	ug/kg	99
24) Chloroprene	10.13	88	2814	1.52	ug/kg	73
25) 2-Butanone	11.21	72	1388	6.24	ug/kg#	1
26) Propionitrile	11.49	54	5785	20.99	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	7443	1.93	ug/kg	61
28) Methacrylonitrile	11.51	67	17580	20.56	ug/kg	89
29) Chloroform	10.91	83	9352	2.09	ug/kg	96
31) Dibromofluoromethane	11.10	113	115951	57.38	ug/kg	100
32) Bromochloromethane	10.90	128	3594	2.80	ug/kg	87
33) 1,1,1-Trichloroethane	11.21	97	7020	1.96	ug/kg	96
34) 1,1-Dichloropropene	11.32	75	7406	2.28	ug/kg	94
35) Diethyl Ether	8.16	59	5343	2.47	ug/kg	93
36) Methyl Acetate	9.42	74	1227	3.12	ug/kg#	52
37) Cyclohexane	10.98	56	7868	2.35	ug/kg	97
39) Methyl Cyclohexane	12.09	55	5639	1.93	ug/kg	97
40) Carbon Tetrachloride	11.17	117	7162	1.94	ug/kg	96
41) 1,2-Dichloroethane	11.70	62	7527	1.98	ug/kg	93
42) Benzene	11.55	78	19383	2.21	ug/kg	86
43) Isobutyl Alcohol	11.57	43	8568	44.26	ug/kg#	63
44) Trichloroethene	12.06	130	5123	2.10	ug/kg#	29
45) 1,2-Dichloropropane	12.51	63	5572	2.22	ug/kg	93
46) Methyl Methacrylate	12.59	100	1053	1.53	ug/kg	83
47) 1,4-Dioxane	12.72	88	658	36.32	ug/kg#	35
48) Bromodichloromethane	12.52	83	7298	2.13	ug/kg	93
49) Dibromomethane	12.44	93	3745	2.28	ug/kg	93
50) 4-Methyl-2-Pentanone	13.53	100	3373	10.88	ug/kg	68
51) 2-Chloroethyl vinyl ether	12.94	63	730	1.82	ug/kg#	46
52) 2-Hexanone	14.23	43	14581	9.01	ug/kg	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB003.D Vial: 3
Acq On : 7 Jul 2021 9:12 am Operator: KG
Sample : AA67203-CAL2 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 9:34 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

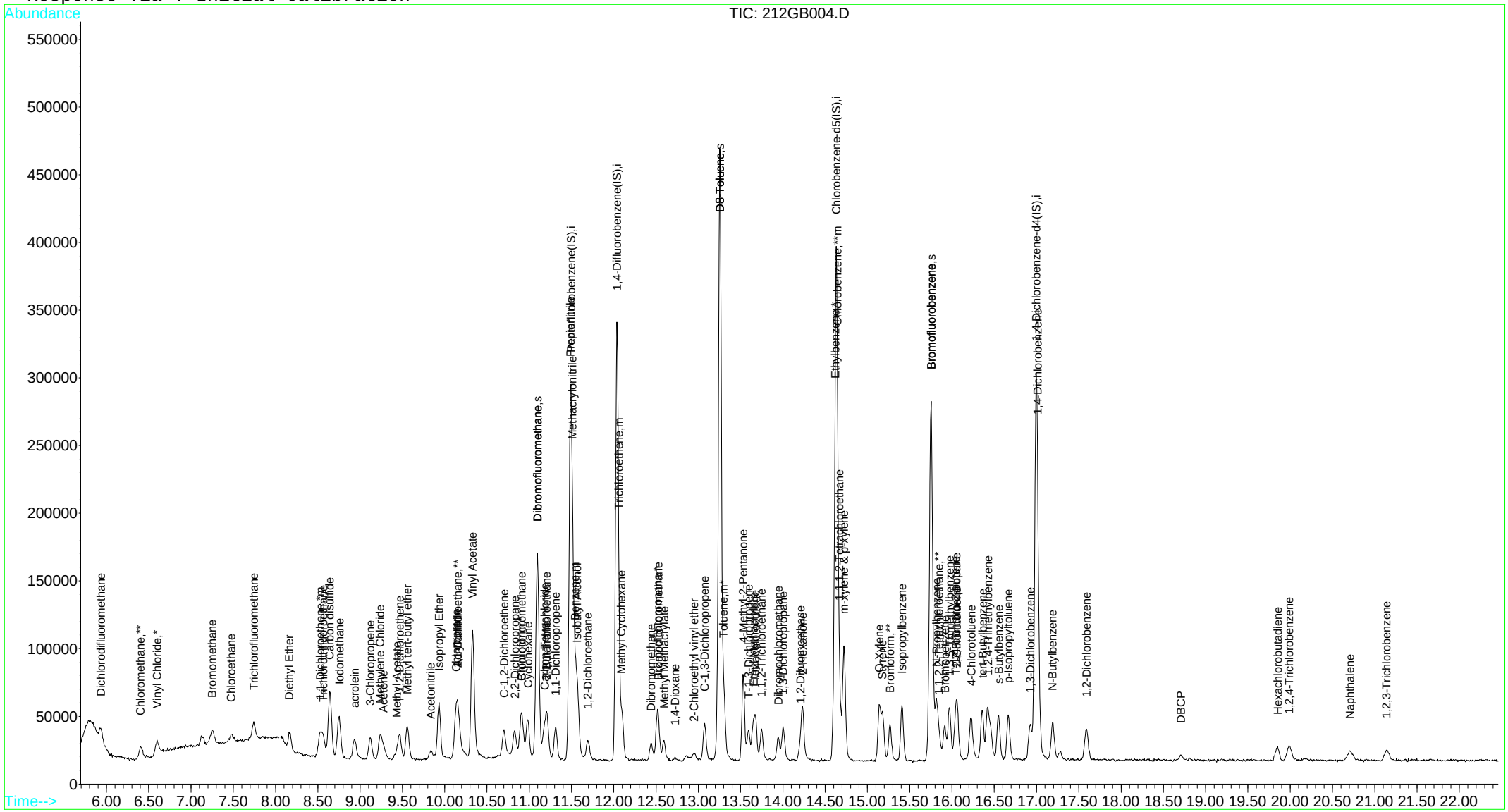
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	9615	2.18	ug/kg	89
55) D8-Toluene	13.25	98	353456	54.18	ug/kg	93
57) Toluene	13.30	92	11670	2.71	ug/kg	96
58) Ethyl Methacrylate	13.65	69	5449	2.17	ug/kg#	97
59) T-1,3-Dichloropropene	13.60	75	8090	2.56	ug/kg	95
60) 1,1,2-Trichloroethane	13.75	97	4711	2.90	ug/kg	92
61) 1,3-Dichloropropane	14.01	76	8732	2.55	ug/kg	89
62) Tetrachloroethene	13.67	164	3599	2.32	ug/kg	91
63) Dibromochloromethane	13.94	129	6380	2.86	ug/kg#	86
64) 1,2-Dibromoethane	14.20	107	5177	2.69	ug/kg#	98
65) Chlorobenzene	14.64	112	12485	2.71	ug/kg	92
66) 1,1,1,2-Tetrachloroethane	14.66	131	4958	2.61	ug/kg#	1
67) Ethylbenzene	14.60	106	6417	2.81	ug/kg	87
68) m-xylene & p-xylene	14.72	106	15845	5.57	ug/kg	81
69) O-Xylene	15.14	106	7606	2.75	ug/kg	91
70) Bromoform	15.27	173	3252	2.42	ug/kg#	96
71) Styrene	15.18	104	11958	2.41	ug/kg	88
72) Isopropylbenzene	15.41	105	18270	2.61	ug/kg	98
73) 1,2,3-Trichloropropane	16.03	75	6953	2.70	ug/kg	96
74) 1,1,2,2-Tetrachloroethane	15.84	83	6042	2.84	ug/kg#	95
76) Bromofluorobenzene	15.74	95	137065	56.62	ug/kg#	81
77) T-1,4-dichloro-2-butene	16.03	53	2111	3.44	ug/kg#	57
78) N-Propylbenzene	15.82	91	22150	2.60	ug/kg	98
80) Bromobenzene	15.91	156	5069	2.39	ug/kg	98
81) 1,3,5-Trimethylbenzene	15.96	105	13958	2.55	ug/kg	98
82) 2-Chlorotoluene	16.06	91	13684	2.66	ug/kg	97
83) 4-Chlorotoluene	16.23	91	14227	2.63	ug/kg	99
84) 1,2,4-Trimethylbenzene	16.42	105	14581	2.66	ug/kg	98
85) s-Butylbenzene	16.54	105	16876	2.70	ug/kg	97
86) tert-Butylbenzene	16.35	119	12813	2.65	ug/kg	90
87) p-Isopropyltoluene	16.66	119	14076	2.54	ug/kg	96
88) 1,3-Dichlorobenzene	16.92	146	8532	2.45	ug/kg	96
89) 1,4-Dichlorobenzene	17.02	146	8888	2.47	ug/kg	84
90) 1,2-Dichlorobenzene	17.58	146	7869	2.40	ug/kg	96
91) N-Butylbenzene	17.19	91	12270	2.55	ug/kg	98
92) DBCP	18.70	75	1200	3.52	ug/kg	72
93) Naphthalene	20.71	128	6779	1.95	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	3474	1.94	ug/kg	95
95) Hexachlorobutadiene	19.83	225	1603	1.64	ug/kg	97
96) 1,2,3-Trichlorobenzene	21.15	180	2449	1.77	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB004.D Vial: 4
Acq On : 7 Jul 2021 9:45 am Operator: KG
Sample : AA67203-CAL3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 10:08 2021 Quant Results File: 061821.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB004.D Vial: 4
Acq On : 7 Jul 2021 9:45 am Operator: KG
Sample : AA67203-CAL3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 10:08 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	203927	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	341315	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	156499	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	125355	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	127927	65.71	ug/kg	0.02
Spiked Amount 50.000	Range 53 - 146		Recovery = 131.42%			
54) D8-Toluene	13.25	98	382470	59.63	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 119.26%			
75) Bromofluorobenzene	15.75	95	152652	63.99	ug/kg	0.02
Spiked Amount 50.000	Range 41 - 142		Recovery = 127.98%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	14559	5.02	ug/kg	96
3) Chloromethane	6.41	50	18439	5.49	ug/kg	95
4) Vinyl Chloride	6.60	62	14357	5.32	ug/kg	93
5) Bromomethane	7.25	96	11384	6.92	ug/kg	88
6) Chloroethane	7.48	64	7649	4.93	ug/kg	98
7) Trichlorofluoromethane	7.74	101	13373	3.85	ug/kg	96
8) Trichlorotrifluoroethane	8.57	101	9377	4.54	ug/kg	87
9) acrolein	8.94	56	23764	56.95	ug/kg	95
10) Acetone	9.28	43	17746	24.25	ug/kg	97
11) 1,1-Dichloroethene	8.52	96	9395	4.81	ug/kg	87
12) 3-Chloropropene	9.12	76	6096	5.17	ug/kg	80
13) Acetonitrile	9.83	41	12915	53.23	ug/kg	97
14) Iodomethane	8.75	142	53767	18.16	ug/kg	98
15) Carbon disulfide	8.64	76	109519	18.55	ug/kg	100
16) Methylene Chloride	9.24	84	12097	5.12	ug/kg	97
17) Methyl tert-butyl ether	9.56	73	30079	4.88	ug/kg	96
18) Acrylonitrile	10.16	53	55933	50.43	ug/kg	95
19) T-1,2-Dichloroethene	9.47	96	11039	5.43	ug/kg	91
20) Isopropyl Ether	9.93	45	49795	5.41	ug/kg	99
21) C-1,2-Dichloroethene	10.70	96	12275	5.50	ug/kg	93
22) 1,1-Dichloroethane	10.14	63	20847	5.05	ug/kg#	66
23) Vinyl Acetate	10.34	43	154601	26.43	ug/kg	99
24) Chloroprene	10.13	88	8166	4.57	ug/kg	94
25) 2-Butanone	11.20	72	6266	29.24	ug/kg	80
26) Propionitrile	11.48	54	15969	60.14	ug/kg	100
27) 2,2-Dichloropropane	10.83	77	14738	3.97	ug/kg#	1
28) Methacrylonitrile	11.51	67	46816	56.82	ug/kg	91
29) Chloroform	10.91	83	18580	4.31	ug/kg	95
31) Dibromofluoromethane	11.10	113	127927	65.71	ug/kg	100
32) Bromochloromethane	10.90	128	6880	5.56	ug/kg	96
33) 1,1,1-Trichloroethane	11.21	97	14411	4.17	ug/kg	96
34) 1,1-Dichloropropene	11.32	75	14733	4.70	ug/kg	92
35) Diethyl Ether	8.17	59	11077	5.32	ug/kg	96
36) Methyl Acetate	9.42	74	2385	6.29	ug/kg#	73
37) Cyclohexane	10.98	56	16353	5.06	ug/kg	96
39) Methyl Cyclohexane	12.09	55	11871	4.13	ug/kg	99
40) Carbon Tetrachloride	11.18	117	14945	4.12	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	14546	3.90	ug/kg	93
42) Benzene	11.55	78	39901	4.62	ug/kg	98
43) Isobutyl Alcohol	11.57	43	18177	95.50	ug/kg	99
44) Trichloroethene	12.07	130	11404	4.75	ug/kg#	72
45) 1,2-Dichloropropane	12.52	63	12004	4.85	ug/kg	88
46) Methyl Methacrylate	12.59	100	3119	4.62	ug/kg	93
47) 1,4-Dioxane	12.72	88	2179	122.31	ug/kg	87
48) Bromodichloromethane	12.53	83	15077	4.49	ug/kg	97
49) Dibromomethane	12.45	93	7672	4.75	ug/kg	98
50) 4-Methyl-2-Pentanone	13.53	100	8492	27.86	ug/kg	86
51) 2-Chloroethyl vinyl ether	12.94	63	2333	5.90	ug/kg#	61
52) 2-Hexanone	14.23	43	40979	25.74	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\070721\212GB004.D Vial: 4
Acq On : 7 Jul 2021 9:45 am Operator: KG
Sample : AA67203-CAL3 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 10:08 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.08	75	20606	4.76	ug/kg	93
55) D8-Toluene	13.25	98	382470	59.63	ug/kg	92
57) Toluene	13.30	92	24648	5.82	ug/kg	97
58) Ethyl Methacrylate	13.65	69	14088	5.69	ug/kg#	98
59) T-1,3-Dichloropropene	13.59	75	17067	5.49	ug/kg	97
60) 1,1,2-Trichloroethane	13.75	97	9685	6.06	ug/kg	94
61) 1,3-Dichloropropane	14.00	76	18875	5.59	ug/kg	96
62) Tetrachloroethene	13.68	164	8695	5.68	ug/kg	95
63) Dibromochloromethane	13.94	129	13077	5.95	ug/kg#	96
64) 1,2-Dibromoethane	14.20	107	11247	5.92	ug/kg#	95
65) Chlorobenzene	14.65	112	27140	5.97	ug/kg	99
66) 1,1,1,2-Tetrachloroethane	14.67	131	10887	5.82	ug/kg#	1
67) Ethylbenzene	14.61	106	13347	5.93	ug/kg	91
68) m-xylene & p-xylene	14.72	106	34228	12.20	ug/kg	82
69) O-Xylene	15.14	106	16773	6.15	ug/kg	87
70) Bromoform	15.27	173	7245	5.48	ug/kg	96
71) Styrene	15.18	104	25940	5.32	ug/kg	92
72) Isopropylbenzene	15.41	105	39327	5.70	ug/kg	99
73) 1,2,3-Trichloropropane	16.04	75	13808	5.44	ug/kg	93
74) 1,1,2,2-Tetrachloroethane	15.85	83	12473	5.94	ug/kg	97
76) Bromofluorobenzene	15.75	95	152652	63.99	ug/kg#	82
77) T-1,4-dichloro-2-butene	16.04	53	3463	5.73	ug/kg	89
78) N-Propylbenzene	15.82	91	47603	5.66	ug/kg	98
80) Bromobenzene	15.92	156	11498	5.50	ug/kg	95
81) 1,3,5-Trimethylbenzene	15.97	105	31359	5.80	ug/kg	97
82) 2-Chlorotoluene	16.06	91	27445	5.41	ug/kg	96
83) 4-Chlorotoluene	16.23	91	28408	5.33	ug/kg	95
84) 1,2,4-Trimethylbenzene	16.42	105	31223	5.78	ug/kg	97
85) s-Butylbenzene	16.55	105	36161	5.87	ug/kg	98
86) tert-Butylbenzene	16.36	119	27562	5.77	ug/kg	92
87) p-Isopropyltoluene	16.66	119	30724	5.62	ug/kg	98
88) 1,3-Dichlorobenzene	16.93	146	18414	5.35	ug/kg	97
89) 1,4-Dichlorobenzene	17.02	146	19285	5.43	ug/kg	95
90) 1,2-Dichlorobenzene	17.59	146	17229	5.33	ug/kg	98
91) N-Butylbenzene	17.19	91	26193	5.52	ug/kg	99
92) DBCP	18.71	75	1915	5.70	ug/kg	92
93) Naphthalene	20.71	128	13994	4.08	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	7499	4.25	ug/kg	97
95) Hexachlorobutadiene	19.84	225	3442	3.58	ug/kg	97
96) 1,2,3-Trichlorobenzene	21.14	180	5158	3.79	ug/kg	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB005.D Vial: 5
Acq On : 7 Jul 2021 10:20 am Operator: KG
Sample : AA67203-CAL4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 10:42 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	201361	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	332358	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	153847	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	125049	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	100795	52.43	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 104.86%			
54) D8-Toluene	13.25	98	306601	49.09	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 98.18%			
75) Bromofluorobenzene	15.75	95	118800	50.66	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 101.32%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.94	85	34131	11.93	ug/kg	100
3) Chloromethane	6.41	50	40801	12.31	ug/kg	99
4) Vinyl Chloride	6.60	62	32326	12.14	ug/kg	98
5) Bromomethane	7.24	96	18269	11.50	ug/kg	92
6) Chloroethane	7.47	64	17164	11.21	ug/kg	100
7) Trichlorofluoromethane	7.74	101	31210	9.11	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	19921	9.77	ug/kg	90
9) acrolein	8.92	56	51742	125.58	ug/kg	97
10) Acetone	9.28	43	31248	43.24	ug/kg	83
11) 1,1-Dichloroethene	8.52	96	20224	10.48	ug/kg	84
12) 3-Chloropropene	9.12	76	9989	8.57	ug/kg	97
13) Acetonitrile	9.82	41	23675	98.83	ug/kg	92
14) Iodomethane	8.75	142	107254	36.70	ug/kg	98
15) Carbon disulfide	8.64	76	202082	34.67	ug/kg	99
16) Methylene Chloride	9.24	84	24231	10.39	ug/kg	96
17) Methyl tert-butyl ether	9.55	73	61846	10.16	ug/kg	94
18) Acrylonitrile	10.15	53	120318	109.85	ug/kg	96
19) T-1,2-Dichloroethene	9.46	96	22070	11.00	ug/kg	94
20) Isopropyl Ether	9.93	45	100831	11.09	ug/kg	98
21) C-1,2-Dichloroethene	10.70	96	24656	11.19	ug/kg	90
22) 1,1-Dichloroethane	10.13	63	42607	10.45	ug/kg	99
23) Vinyl Acetate	10.32	43	285127	49.36	ug/kg	100
24) Chloroprene	10.13	88	16065	9.11	ug/kg	75
25) 2-Butanone	11.20	72	10947	51.74	ug/kg	96
26) Propionitrile	11.47	54	30815	117.52	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	31782	8.66	ug/kg#	35
28) Methacrylonitrile	11.51	67	86171	105.92	ug/kg	93
29) Chloroform	10.91	83	39438	9.27	ug/kg	98
31) Dibromofluoromethane	11.09	113	100795	52.43	ug/kg	100
32) Bromochloromethane	10.90	128	13331	10.92	ug/kg	94
33) 1,1,1-Trichloroethane	11.21	97	29354	8.60	ug/kg	95
34) 1,1-Dichloropropene	11.31	75	30274	9.78	ug/kg	94
35) Diethyl Ether	8.17	59	21559	10.49	ug/kg	98
36) Methyl Acetate	9.43	74	4556	12.17	ug/kg	73
37) Cyclohexane	10.98	56	36250	11.36	ug/kg	99
39) Methyl Cyclohexane	12.09	55	25862	9.24	ug/kg	96
40) Carbon Tetrachloride	11.17	117	30884	8.74	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	28738	7.91	ug/kg	98
42) Benzene	11.55	78	81435	9.68	ug/kg	92
43) Isobutyl Alcohol	11.57	43	38283	206.55	ug/kg#	79
44) Trichloroethene	12.06	130	23609	10.09	ug/kg	89
45) 1,2-Dichloropropane	12.51	63	25196	10.46	ug/kg	92
46) Methyl Methacrylate	12.58	100	6256	9.51	ug/kg	92
47) 1,4-Dioxane	12.72	88	3311	190.86	ug/kg#	71
48) Bromodichloromethane	12.53	83	30305	9.26	ug/kg	99
49) Dibromomethane	12.44	93	14930	9.50	ug/kg	95
50) 4-Methyl-2-Pentanone	13.52	100	15556	52.40	ug/kg	87
51) 2-Chloroethyl vinyl ether	12.94	63	5506	14.30	ug/kg	95
52) 2-Hexanone	14.23	43	76764	49.52	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\070721\212GB005.D Vial: 5
Acq On : 7 Jul 2021 10:20 am Operator: KG
Sample : AA67203-CAL4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 10:42 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

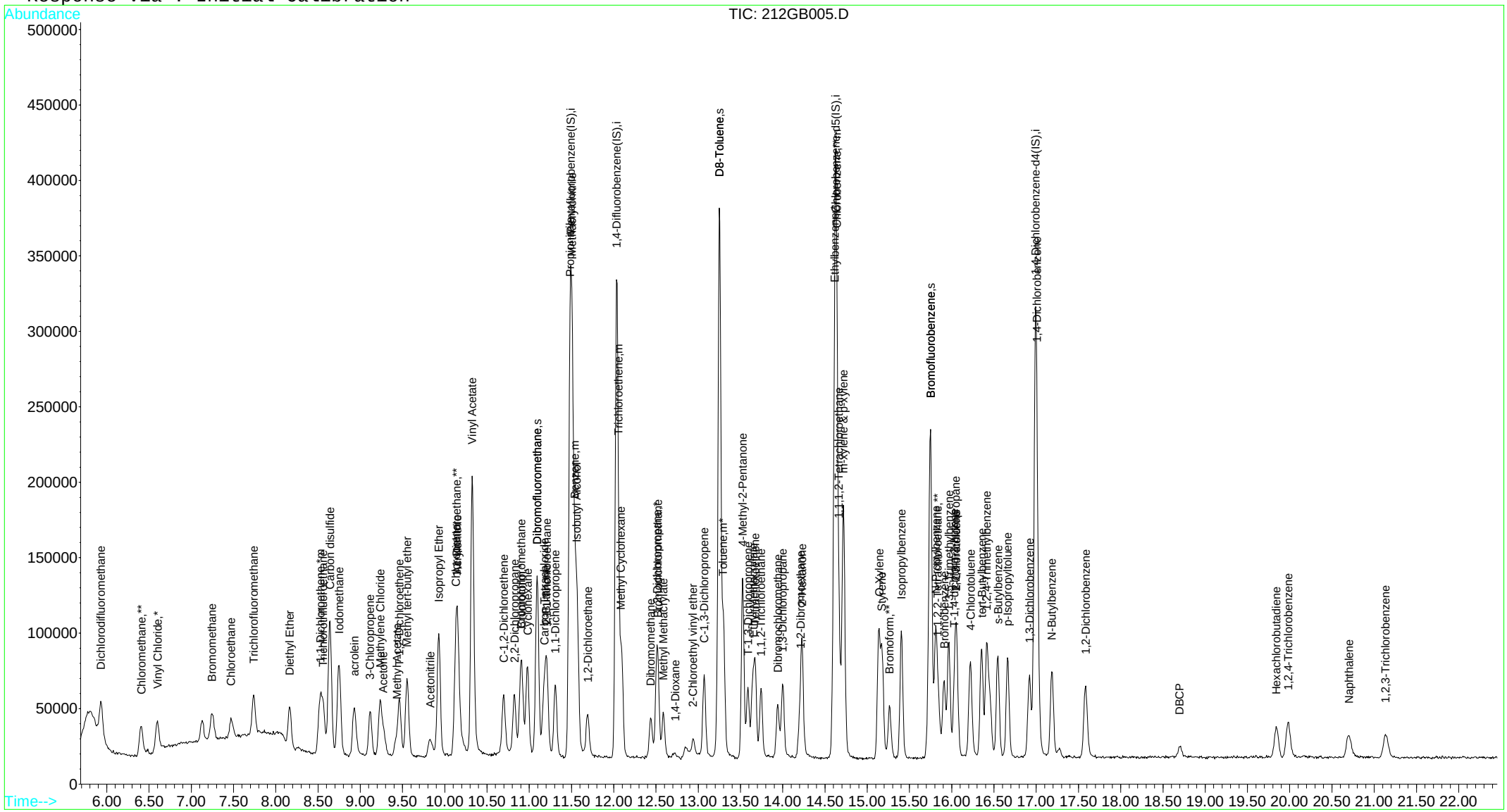
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	41233	9.78	ug/kg	93
55) D8-Toluene	13.25	98	306601	49.09	ug/kg	92
57) Toluene	13.30	92	49633	11.91	ug/kg	98
58) Ethyl Methacrylate	13.64	69	27154	11.15	ug/kg	98
59) T-1,3-Dichloropropene	13.59	75	34824	11.39	ug/kg	95
60) 1,1,2-Trichloroethane	13.74	97	19368	12.33	ug/kg	95
61) 1,3-Dichloropropane	14.00	76	39175	11.79	ug/kg	99
62) Tetrachloroethene	13.67	164	17836	11.85	ug/kg	94
63) Dibromochloromethane	13.94	129	26435	12.23	ug/kg#	97
64) 1,2-Dibromoethane	14.20	107	22898	12.26	ug/kg	100
65) Chlorobenzene	14.65	112	54294	12.14	ug/kg	94
66) 1,1,1,2-Tetrachloroethane	14.67	131	21702	11.79	ug/kg#	1
67) Ethylbenzene	14.60	106	27256	12.32	ug/kg	87
68) m-xylene & p-xylene	14.72	106	68417	24.81	ug/kg	84
69) O-Xylene	15.13	106	34169	12.75	ug/kg	86
70) Bromoform	15.27	173	14720	11.32	ug/kg	98
71) Styrene	15.18	104	53755	11.21	ug/kg	91
72) Isopropylbenzene	15.40	105	82146	12.11	ug/kg	99
73) 1,2,3-Trichloropropane	16.04	75	27816	11.15	ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.84	83	25482	12.35	ug/kg	99
76) Bromofluorobenzene	15.75	95	118800	50.66	ug/kg#	82
77) T-1,4-dichloro-2-butene	16.02	53	6009	10.12	ug/kg#	76
78) N-Propylbenzene	15.81	91	92474	11.19	ug/kg	97
80) Bromobenzene	15.91	156	22775	10.93	ug/kg	82
81) 1,3,5-Trimethylbenzene	15.97	105	63127	11.71	ug/kg	96
82) 2-Chlorotoluene	16.05	91	56553	11.17	ug/kg	96
83) 4-Chlorotoluene	16.22	91	57016	10.73	ug/kg	93
84) 1,2,4-Trimethylbenzene	16.41	105	63769	11.84	ug/kg	97
85) s-Butylbenzene	16.55	105	74094	12.06	ug/kg	100
86) tert-Butylbenzene	16.36	119	55864	11.72	ug/kg	95
87) p-Isopropyltoluene	16.66	119	64302	11.78	ug/kg	98
88) 1,3-Dichlorobenzene	16.92	146	37373	10.89	ug/kg	98
89) 1,4-Dichlorobenzene	17.01	146	37968	10.71	ug/kg	95
90) 1,2-Dichlorobenzene	17.59	146	35495	11.00	ug/kg	98
91) N-Butylbenzene	17.18	91	53889	11.38	ug/kg	99
92) DBCP	18.69	75	3624	10.81	ug/kg	94
93) Naphthalene	20.70	128	29879	8.73	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	16034	9.12	ug/kg	99
95) Hexachlorobutadiene	19.84	225	7266	7.57	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.12	180	11681	8.60	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB005.D Vial: 5
Acq On : 7 Jul 2021 10:20 am Operator: KG
Sample : AA67203-CAL4 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 10:42 2021 Quant Results File: 061821.RES

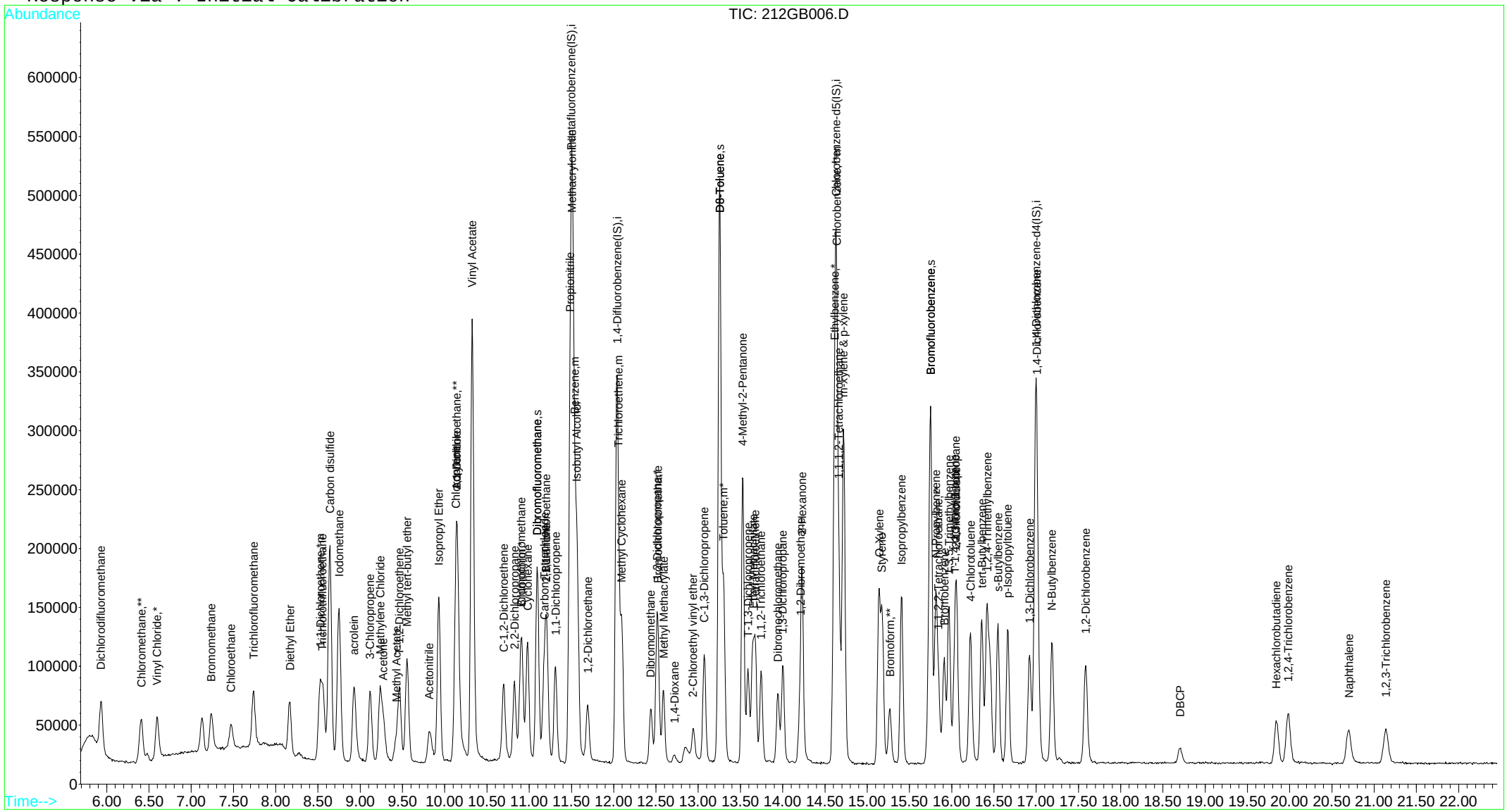
Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB006.D Vial: 6
Acq On : 7 Jul 2021 10:49 am Operator: KG
Sample : AA67203-CAL5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 11:11 2021 Quant Results File: 061821.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB006.D Vial: 6
Acq On : 7 Jul 2021 10:49 am Operator: KG
Sample : AA67203-CAL5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 11:11 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	200029	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.03	114	331857	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	153677	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	125353	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	140322	73.48	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 146.96%#			
54) D8-Toluene	13.26	98	418220	67.06	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 134.12%			
75) Bromofluorobenzene	15.75	95	164103	70.05	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 140.10%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	62267	21.91	ug/kg	99
3) Chloromethane	6.40	50	74304	22.56	ug/kg	98
4) Vinyl Chloride	6.59	62	57789	21.85	ug/kg	99
5) Bromomethane	7.24	96	29168	19.21	ug/kg	95
6) Chloroethane	7.48	64	28338	18.63	ug/kg	97
7) Trichlorofluoromethane	7.74	101	56582	16.62	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	34673	17.12	ug/kg	92
9) acrolein	8.93	56	99570	243.27	ug/kg	99
10) Acetone	9.28	43	65770	91.62	ug/kg	93
11) 1,1-Dichloroethene	8.52	96	33791	17.63	ug/kg	87
12) 3-Chloropropene	9.12	76	19546	16.89	ug/kg	98
13) Acetonitrile	9.82	41	53706	225.68	ug/kg	99
14) Iodomethane	8.75	142	230792	79.49	ug/kg	97
15) Carbon disulfide	8.64	76	408552	70.57	ug/kg	100
16) Methylene Chloride	9.24	84	40372	17.43	ug/kg	95
17) Methyl tert-butyl ether	9.55	73	103297	17.07	ug/kg	95
18) Acrylonitrile	10.15	53	241977	222.40	ug/kg	98
19) T-1,2-Dichloroethene	9.46	96	37787	18.97	ug/kg	92
20) Isopropyl Ether	9.93	45	170266	18.86	ug/kg	98
21) C-1,2-Dichloroethene	10.70	96	40430	18.47	ug/kg	94
22) 1,1-Dichloroethane	10.13	63	69535	17.17	ug/kg	99
23) Vinyl Acetate	10.32	43	598293	104.27	ug/kg	99
24) Chloroprene	10.13	88	32606	18.62	ug/kg	77
25) 2-Butanone	11.20	72	22344	106.30	ug/kg	97
26) Propionitrile	11.48	54	61018	234.26	ug/kg	100
27) 2,2-Dichloropropane	10.83	77	50843	13.95	ug/kg	93
28) Methacrylonitrile	11.51	67	175388	217.02	ug/kg	93
29) Chloroform	10.92	83	65587	15.51	ug/kg	97
31) Dibromofluoromethane	11.09	113	140322	73.48	ug/kg	100
32) Bromochloromethane	10.90	128	23615	19.47	ug/kg	94
33) 1,1,1-Trichloroethane	11.21	97	49985	14.74	ug/kg	96
34) 1,1-Dichloropropene	11.31	75	51121	16.63	ug/kg	95
35) Diethyl Ether	8.16	59	36065	17.67	ug/kg	98
36) Methyl Acetate	9.42	74	7525	20.23	ug/kg	95
37) Cyclohexane	10.98	56	61439	19.38	ug/kg	96
39) Methyl Cyclohexane	12.10	55	45560	16.30	ug/kg	97
40) Carbon Tetrachloride	11.17	117	51698	14.65	ug/kg	98
41) 1,2-Dichloroethane	11.69	62	49209	13.56	ug/kg	95
42) Benzene	11.55	78	137921	16.42	ug/kg	99
43) Isobutyl Alcohol	11.57	43	68661	371.01	ug/kg	99
44) Trichloroethene	12.06	130	40327	17.26	ug/kg	95
45) 1,2-Dichloropropane	12.51	63	41791	17.38	ug/kg	91
46) Methyl Methacrylate	12.59	100	12322	18.76	ug/kg	98
47) 1,4-Dioxane	12.71	88	6959	401.74	ug/kg	89
48) Bromodichloromethane	12.53	83	50800	15.54	ug/kg	96
49) Dibromomethane	12.44	93	25915	16.51	ug/kg	96
50) 4-Methyl-2-Pentanone	13.53	100	30197	101.88	ug/kg	95
51) 2-Chloroethyl vinyl ether	12.94	63	13295	34.58	ug/kg	94
52) 2-Hexanone	14.23	43	160864	103.93	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\070721\212GB006.D Vial: 6
Acq On : 7 Jul 2021 10:49 am Operator: KG
Sample : AA67203-CAL5 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 11:11 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

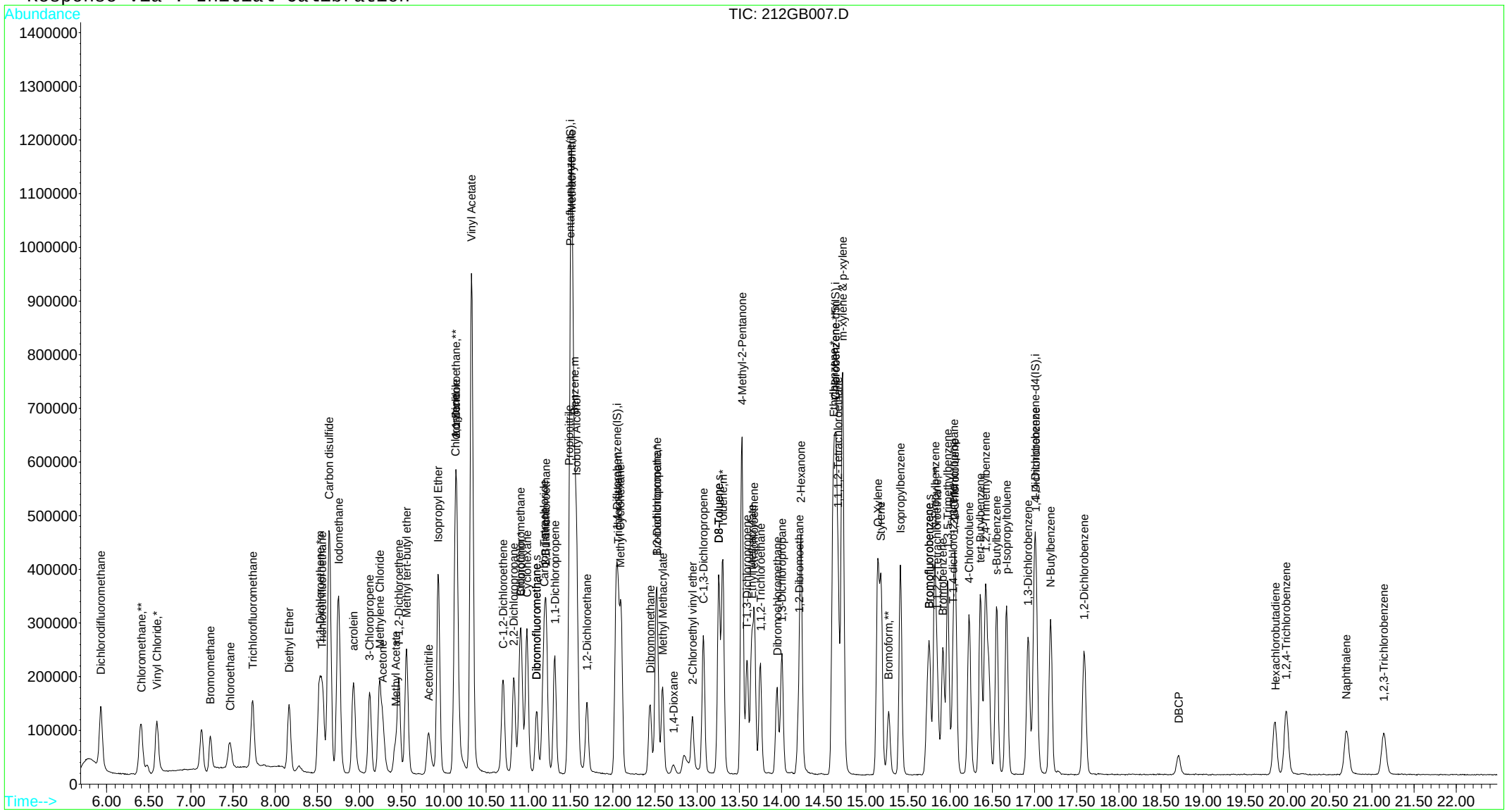
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	70212	16.67 ug/kg	93
55) D8-Toluene	13.26	98	418220	67.06 ug/kg	92
57) Toluene	13.30	92	84364	20.27 ug/kg	98
58) Ethyl Methacrylate	13.64	69	56244	23.13 ug/kg	97
59) T-1,3-Dichloropropene	13.59	75	58559	19.17 ug/kg	95
60) 1,1,2-Trichloroethane	13.74	97	33115	21.10 ug/kg	93
61) 1,3-Dichloropropane	14.00	76	65529	19.75 ug/kg	99
62) Tetrachloroethene	13.68	164	28929	19.24 ug/kg	97
63) Dibromochloromethane	13.94	129	44909	20.79 ug/kg	99
64) 1,2-Dibromoethane	14.20	107	39333	21.08 ug/kg	98
65) Chlorobenzene	14.65	112	94102	21.07 ug/kg	93
66) 1,1,1,2-Tetrachloroethane	14.67	131	36680	19.96 ug/kg#	1
67) Ethylbenzene	14.60	106	47059	21.30 ug/kg	86
68) m-xylene & p-xylene	14.72	106	117391	42.61 ug/kg	85
69) O-Xylene	15.14	106	57884	21.62 ug/kg	87
70) Bromoform	15.27	173	25874	19.92 ug/kg	99
71) Styrene	15.18	104	94535	19.73 ug/kg	93
72) Isopropylbenzene	15.41	105	140770	20.77 ug/kg	99
73) 1,2,3-Trichloropropane	16.04	75	49838	20.00 ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.85	83	43846	21.28 ug/kg	99
76) Bromofluorobenzene	15.75	95	164103	70.05 ug/kg#	81
77) T-1,4-dichloro-2-butene	16.03	53	12381	20.87 ug/kg	94
78) N-Propylbenzene	15.81	91	157917	19.14 ug/kg	98
80) Bromobenzene	15.91	156	39114	18.72 ug/kg	96
81) 1,3,5-Trimethylbenzene	15.97	105	107459	19.88 ug/kg	95
82) 2-Chlorotoluene	16.06	91	95879	18.88 ug/kg	94
83) 4-Chlorotoluene	16.22	91	100939	18.95 ug/kg	95
84) 1,2,4-Trimethylbenzene	16.42	105	109982	20.37 ug/kg	98
85) s-Butylbenzene	16.55	105	127863	20.76 ug/kg	100
86) tert-Butylbenzene	16.36	119	94992	19.88 ug/kg	94
87) p-Isopropyltoluene	16.66	119	110177	20.14 ug/kg	96
88) 1,3-Dichlorobenzene	16.92	146	65554	19.06 ug/kg	99
89) 1,4-Dichlorobenzene	17.01	146	67856	19.10 ug/kg	97
90) 1,2-Dichlorobenzene	17.59	146	62326	19.27 ug/kg	97
91) N-Butylbenzene	17.18	91	94264	19.85 ug/kg	98
92) DBCP	18.70	75	5891	17.52 ug/kg	92
93) Naphthalene	20.70	128	57032	16.61 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	29306	16.62 ug/kg	100
95) Hexachlorobutadiene	19.85	225	12900	13.42 ug/kg	98
96) 1,2,3-Trichlorobenzene	21.14	180	20923	15.36 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB007.D Vial: 7
Acq On : 7 Jul 2021 11:23 am Operator: KG
Sample : AA67203-CAL6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 11:46 2021 Quant Results File: 061821.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB007.D Vial: 7
Acq On : 7 Jul 2021 11:23 am Operator: KG
Sample : AA67203-CAL6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 11:46 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	193062	50.00	ug/kg	0.01
38) 1,4-Difluorobenzene(IS)	12.04	114	330090	50.00	ug/kg	0.01
56) Chlorobenzene-d5(IS)	14.63	82	152465	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	126714	50.00	ug/kg	0.02
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	98661	53.53	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 107.06%			
54) D8-Toluene	13.26	98	306954	49.48	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 146		Recovery = 98.96%			
75) Bromofluorobenzene	15.75	95	120819	51.98	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 103.96%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	164429	59.94	ug/kg	100
3) Chloromethane	6.40	50	191667	60.30	ug/kg	98
4) Vinyl Chloride	6.59	62	152067	59.57	ug/kg	99
5) Bromomethane	7.23	96	49674	37.40	ug/kg	96
6) Chloroethane	7.46	64	71845	48.94	ug/kg	99
7) Trichlorofluoromethane	7.73	101	147225	44.80	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	94383	48.29	ug/kg	90
9) acrolein	8.93	56	257659	652.22	ug/kg	98
10) Acetone	9.28	43	162120	234.00	ug/kg	89
11) 1,1-Dichloroethene	8.52	96	89219	48.23	ug/kg	88
12) 3-Chloropropene	9.12	76	48643	43.54	ug/kg	97
13) Acetonitrile	9.82	41	144572	629.43	ug/kg	99
14) Iodomethane	8.75	142	594568	212.18	ug/kg	97
15) Carbon disulfide	8.64	76	1024451	183.33	ug/kg	100
16) Methylene Chloride	9.24	84	105946	47.40	ug/kg	97
17) Methyl tert-butyl ether	9.55	73	273538	46.85	ug/kg	95
18) Acrylonitrile	10.15	53	606279	577.34	ug/kg	98
19) T-1,2-Dichloroethene	9.46	96	99804	51.90	ug/kg	92
20) Isopropyl Ether	9.93	45	452517	51.93	ug/kg	98
21) C-1,2-Dichloroethene	10.70	96	107576	50.93	ug/kg	94
22) 1,1-Dichloroethane	10.14	63	184267	47.15	ug/kg	98
23) Vinyl Acetate	10.32	43	1434601	259.05	ug/kg	99
24) Chloroprene	10.13	88	84287	49.87	ug/kg	84
25) 2-Butanone	11.20	72	56229	277.16	ug/kg	99
26) Propionitrile	11.48	54	158454	630.29	ug/kg	100
27) 2,2-Dichloropropane	10.83	77	138917	39.50	ug/kg	92
28) Methacrylonitrile	11.51	67	431472	553.16	ug/kg	94
29) Chloroform	10.92	83	173815	42.59	ug/kg	98
31) Dibromofluoromethane	11.09	113	98661	53.53	ug/kg	100
32) Bromochloromethane	10.90	128	61043	52.15	ug/kg	99
33) 1,1,1-Trichloroethane	11.21	97	135478	41.38	ug/kg	95
34) 1,1-Dichloropropene	11.31	75	136608	46.03	ug/kg	95
35) Diethyl Ether	8.16	59	98314	49.91	ug/kg	99
36) Methyl Acetate	9.42	74	20068	55.89	ug/kg	94
37) Cyclohexane	10.98	56	163660	53.49	ug/kg	97
39) Methyl Cyclohexane	12.10	55	120765	43.42	ug/kg	98
40) Carbon Tetrachloride	11.18	117	143026	40.76	ug/kg	100
41) 1,2-Dichloroethane	11.70	62	129052	35.75	ug/kg	97
42) Benzene	11.55	78	357727	42.83	ug/kg	98
43) Isobutyl Alcohol	11.58	43	177321	963.30	ug/kg#	93
44) Trichloroethene	12.07	130	108749	46.79	ug/kg	97
45) 1,2-Dichloropropane	12.51	63	111585	46.65	ug/kg	90
46) Methyl Methacrylate	12.59	100	33491	51.26	ug/kg	92
47) 1,4-Dioxane	12.72	88	18406	1068.27	ug/kg	96
48) Bromodichloromethane	12.53	83	134376	41.33	ug/kg	97
49) Dibromomethane	12.44	93	70665	45.25	ug/kg	97
50) 4-Methyl-2-Pentanone	13.53	100	78296	265.57	ug/kg	92
51) 2-Chloroethyl vinyl ether	12.95	63	51288	134.12	ug/kg	96
52) 2-Hexanone	14.23	43	410551	266.67	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB007.D Vial: 7
Acq On : 7 Jul 2021 11:23 am Operator: KG
Sample : AA67203-CAL6 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 11:46 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	190607	45.51	ug/kg	92
55) D8-Toluene	13.26	98	306954	49.48	ug/kg	93
57) Toluene	13.31	92	230961	55.95	ug/kg	97
58) Ethyl Methacrylate	13.65	69	146420	60.68	ug/kg	97
59) T-1,3-Dichloropropene	13.60	75	156048	51.50	ug/kg	99
60) 1,1,2-Trichloroethane	13.75	97	85158	54.69	ug/kg	96
61) 1,3-Dichloropropane	14.01	76	173919	52.84	ug/kg	97
62) Tetrachloroethene	13.68	164	83398	55.90	ug/kg	98
63) Dibromochloromethane	13.95	129	122089	56.98	ug/kg	100
64) 1,2-Dibromoethane	14.20	107	108061	58.39	ug/kg	98
65) Chlorobenzene	14.65	112	249945	56.41	ug/kg	91
66) 1,1,1,2-Tetrachloroethane	14.68	131	98436	53.98	ug/kg#	68
67) Ethylbenzene	14.61	106	127740	58.27	ug/kg	86
68) m-xylene & p-xylene	14.73	106	310635	113.66	ug/kg	86
69) O-Xylene	15.14	106	157148	59.15	ug/kg	86
70) Bromoform	15.27	173	70972	55.08	ug/kg	99
71) Styrene	15.18	104	263554	55.44	ug/kg	92
72) Isopropylbenzene	15.41	105	380463	56.59	ug/kg	99
73) 1,2,3-Trichloropropane	16.04	75	135479	54.79	ug/kg	100
74) 1,1,2,2-Tetrachloroethane	15.85	83	115373	56.44	ug/kg	99
76) Bromofluorobenzene	15.75	95	120819	51.98	ug/kg#	69
77) T-1,4-dichloro-2-butene	16.03	53	32552	55.31	ug/kg	97
78) N-Propylbenzene	15.82	91	437677	53.46	ug/kg	98
80) Bromobenzene	15.91	156	105244	49.83	ug/kg	96
81) 1,3,5-Trimethylbenzene	15.97	105	292823	53.58	ug/kg	95
82) 2-Chlorotoluene	16.06	91	261060	50.86	ug/kg	95
83) 4-Chlorotoluene	16.22	91	272031	50.53	ug/kg	94
84) 1,2,4-Trimethylbenzene	16.42	105	299023	54.79	ug/kg	97
85) s-Butylbenzene	16.55	105	350221	56.25	ug/kg	99
86) tert-Butylbenzene	16.36	119	263376	54.53	ug/kg	92
87) p-Isopropyltoluene	16.67	119	302275	54.66	ug/kg	97
88) 1,3-Dichlorobenzene	16.92	146	181867	52.31	ug/kg	98
89) 1,4-Dichlorobenzene	17.02	146	184537	51.39	ug/kg	99
90) 1,2-Dichlorobenzene	17.59	146	173477	53.05	ug/kg	99
91) N-Butylbenzene	17.19	91	263939	54.99	ug/kg	97
92) DBCP	18.70	75	16301	47.97	ug/kg	91
93) Naphthalene	20.70	128	160274	46.19	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	81681	45.82	ug/kg	98
95) Hexachlorobutadiene	19.85	225	35695	36.72	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.15	180	57828	42.00	ug/kg	99

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB008.D Vial: 8
Acq On : 7 Jul 2021 11:52 am Operator: KG
Sample : AA67203-CAL7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 12:14 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	193020	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	331667	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	154870	50.00	ug/kg	0.02
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	128039	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	137455	74.59	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 149.18%#			
54) D8-Toluene	13.25	98	423845	68.00	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 136.00%			
75) Bromofluorobenzene	15.75	95	169090	71.62	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 143.24%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	254110	92.65	ug/kg	99
3) Chloromethane	6.40	50	303732	95.58	ug/kg	98
4) Vinyl Chloride	6.59	62	235005	92.08	ug/kg	99
5) Bromomethane	7.22	96	50538	38.24	ug/kg	95
6) Chloroethane	7.44	64	107648	73.34	ug/kg	99
7) Trichlorofluoromethane	7.72	101	222718	67.78	ug/kg	99
8) Trichlorotrifluoroethane	8.55	101	140108	71.69	ug/kg	91
9) acrolein	8.92	56	407910	1032.78	ug/kg	99
10) Acetone	9.27	43	254744	367.77	ug/kg	92
11) 1,1-Dichloroethene	8.51	96	133488	72.18	ug/kg	88
12) 3-Chloropropene	9.11	76	77683	69.56	ug/kg	100
13) Acetonitrile	9.81	41	239266	1041.93	ug/kg	98
14) Iodomethane	8.74	142	948481	338.55	ug/kg	97
15) Carbon disulfide	8.63	76	1598382	286.10	ug/kg	100
16) Methylene Chloride	9.23	84	158599	70.98	ug/kg	97
17) Methyl tert-butyl ether	9.55	73	407075	69.73	ug/kg	95
18) Acrylonitrile	10.14	53	941200	896.48	ug/kg	98
19) T-1,2-Dichloroethene	9.46	96	148980	77.49	ug/kg	93
20) Isopropyl Ether	9.92	45	670380	76.94	ug/kg	99
21) C-1,2-Dichloroethene	10.69	96	162847	77.11	ug/kg	94
22) 1,1-Dichloroethane	10.13	63	272329	69.70	ug/kg	98
23) Vinyl Acetate	10.32	43	2282225	412.19	ug/kg	99
24) Chloroprene	10.12	88	131639	77.91	ug/kg	85
25) 2-Butanone	11.19	72	88836	437.98	ug/kg	99
26) Propionitrile	11.47	54	253774	1009.67	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	206004	58.59	ug/kg	99
28) Methacrylonitrile	11.51	67	676194	867.08	ug/kg	93
29) Chloroform	10.91	83	260569	63.86	ug/kg	98
31) Dibromofluoromethane	11.09	113	137455	74.59	ug/kg	100
32) Bromochloromethane	10.89	128	90057	76.96	ug/kg	99
33) 1,1,1-Trichloroethane	11.21	97	203225	62.08	ug/kg	95
34) 1,1-Dichloropropene	11.31	75	204278	68.85	ug/kg	95
35) Diethyl Ether	8.16	59	146802	74.54	ug/kg	99
36) Methyl Acetate	9.42	74	29150	81.21	ug/kg	97
37) Cyclohexane	10.98	56	241541	78.96	ug/kg	97
39) Methyl Cyclohexane	12.09	55	179815	64.35	ug/kg	97
40) Carbon Tetrachloride	11.17	117	213650	60.59	ug/kg	99
41) 1,2-Dichloroethane	11.68	62	196135	54.08	ug/kg	97
42) Benzene	11.54	78	529551	63.10	ug/kg	98
43) Isobutyl Alcohol	11.56	43	273087	1476.49	ug/kg	96
44) Trichloroethene	12.06	130	164709	70.53	ug/kg	96
45) 1,2-Dichloropropane	12.50	63	167623	69.74	ug/kg	91
46) Methyl Methacrylate	12.58	100	51601	78.60	ug/kg	96
47) 1,4-Dioxane	12.71	88	30326	1751.72	ug/kg	97
48) Bromodichloromethane	12.52	83	200491	61.38	ug/kg	96
49) Dibromomethane	12.43	93	106729	68.02	ug/kg	97
50) 4-Methyl-2-Pentanone	13.53	100	122425	413.27	ug/kg	92
51) 2-Chloroethyl vinyl ether	12.93	63	85832	223.39	ug/kg	98
52) 2-Hexanone	14.23	43	649226	419.70	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB008.D Vial: 8
Acq On : 7 Jul 2021 11:52 am Operator: KG
Sample : AA67203-CAL7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 12:14 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

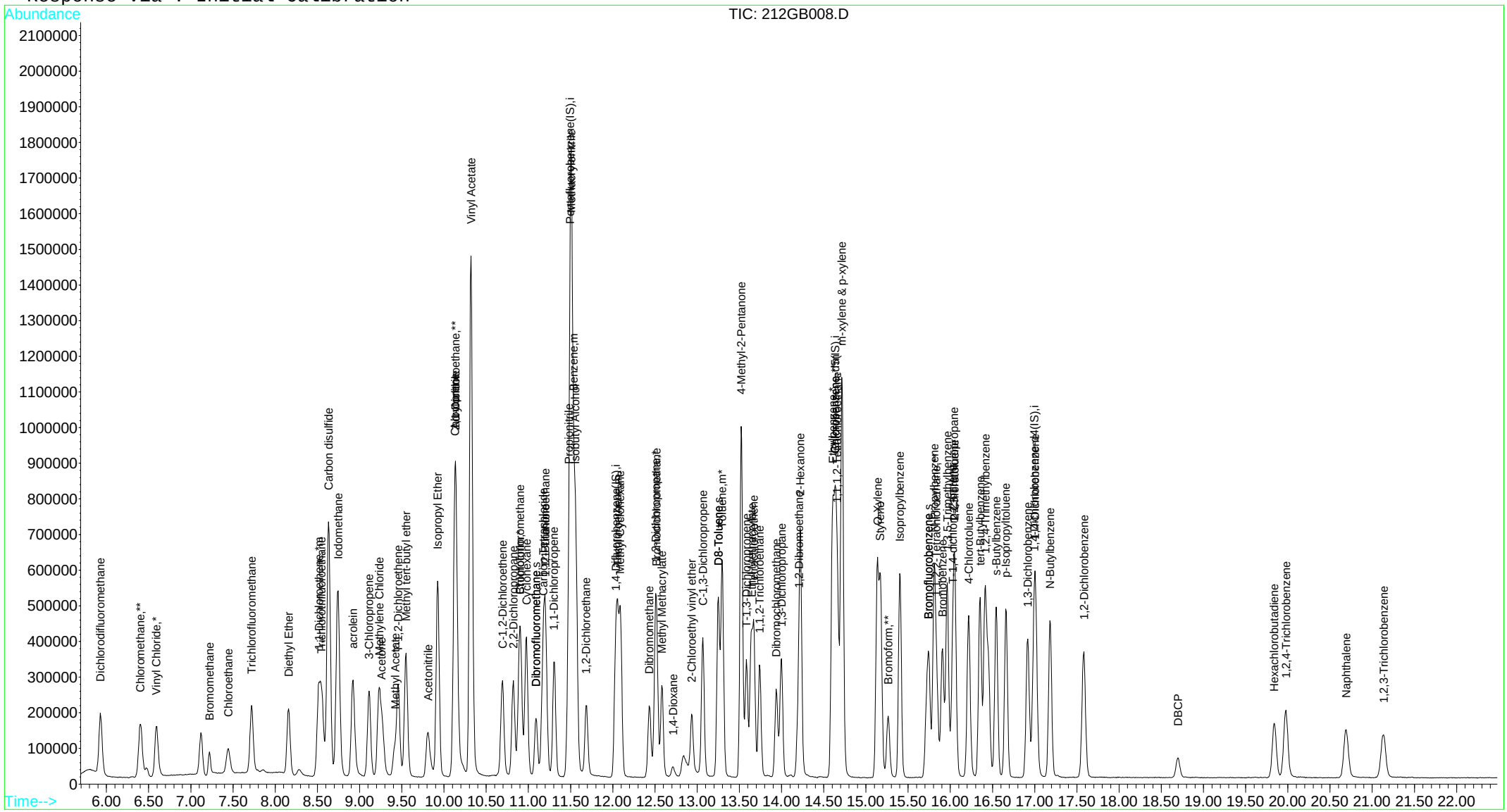
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.07	75	286263	68.02	ug/kg	93
55) D8-Toluene	13.25	98	423845	68.00	ug/kg	92
57) Toluene	13.29	92	346488	82.63	ug/kg	97
58) Ethyl Methacrylate	13.64	69	234298	95.59	ug/kg	96
59) T-1,3-Dichloropropene	13.58	75	233461	75.86	ug/kg	99
60) 1,1,2-Trichloroethane	13.74	97	128953	81.54	ug/kg	97
61) 1,3-Dichloropropane	14.00	76	260026	77.77	ug/kg	96
62) Tetrachloroethene	13.67	164	117704	77.67	ug/kg	96
63) Dibromochloromethane	13.94	129	183666	84.39	ug/kg	99
64) 1,2-Dibromoethane	14.20	107	161110	85.70	ug/kg	100
65) Chlorobenzene	14.64	112	376871	83.74	ug/kg	91
66) 1,1,1,2-Tetrachloroethane	14.66	131	146388	79.03	ug/kg	86
67) Ethylbenzene	14.60	106	192614	86.50	ug/kg	87
68) m-xylene & p-xylene	14.71	106	467047	168.24	ug/kg	85
69) O-Xylene	15.13	106	237758	88.10	ug/kg	87
70) Bromoform	15.26	173	108096	82.59	ug/kg	99
71) Styrene	15.17	104	402856	83.42	ug/kg	92
72) Isopropylbenzene	15.40	105	571816	83.73	ug/kg	98
73) 1,2,3-Trichloropropane	16.03	75	209369	83.36	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	176705	85.09	ug/kg	100
76) Bromofluorobenzene	15.75	95	169090	71.62	ug/kg#	66
77) T-1,4-dichloro-2-butene	16.02	53	51353	85.90	ug/kg	94
78) N-Propylbenzene	15.81	91	661913	79.60	ug/kg	98
80) Bromobenzene	15.91	156	160428	75.18	ug/kg	95
81) 1,3,5-Trimethylbenzene	15.96	105	445092	80.60	ug/kg	96
82) 2-Chlorotoluene	16.06	91	394020	75.98	ug/kg	94
83) 4-Chlorotoluene	16.22	91	414202	76.14	ug/kg	95
84) 1,2,4-Trimethylbenzene	16.41	105	447451	81.14	ug/kg	96
85) s-Butylbenzene	16.54	105	530185	84.27	ug/kg	100
86) tert-Butylbenzene	16.35	119	391942	80.31	ug/kg	94
87) p-Isopropyltoluene	16.66	119	464517	83.14	ug/kg	96
88) 1,3-Dichlorobenzene	16.92	146	280222	79.76	ug/kg	99
89) 1,4-Dichlorobenzene	17.01	146	280653	77.34	ug/kg	99
90) 1,2-Dichlorobenzene	17.58	146	268644	81.30	ug/kg	99
91) N-Butylbenzene	17.18	91	405034	83.52	ug/kg	98
92) DBCP	18.70	75	24604	71.66	ug/kg	86
93) Naphthalene	20.69	128	264591	75.46	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.98	180	130487	72.45	ug/kg	99
95) Hexachlorobutadiene	19.84	225	55946	56.96	ug/kg	99
96) 1,2,3-Trichlorobenzene	21.13	180	94100	67.63	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB008.D Vial: 8
Acq On : 7 Jul 2021 11:52 am Operator: KG
Sample : AA67203-CAL7 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 12:14 2021 Quant Results File: 061821.RES

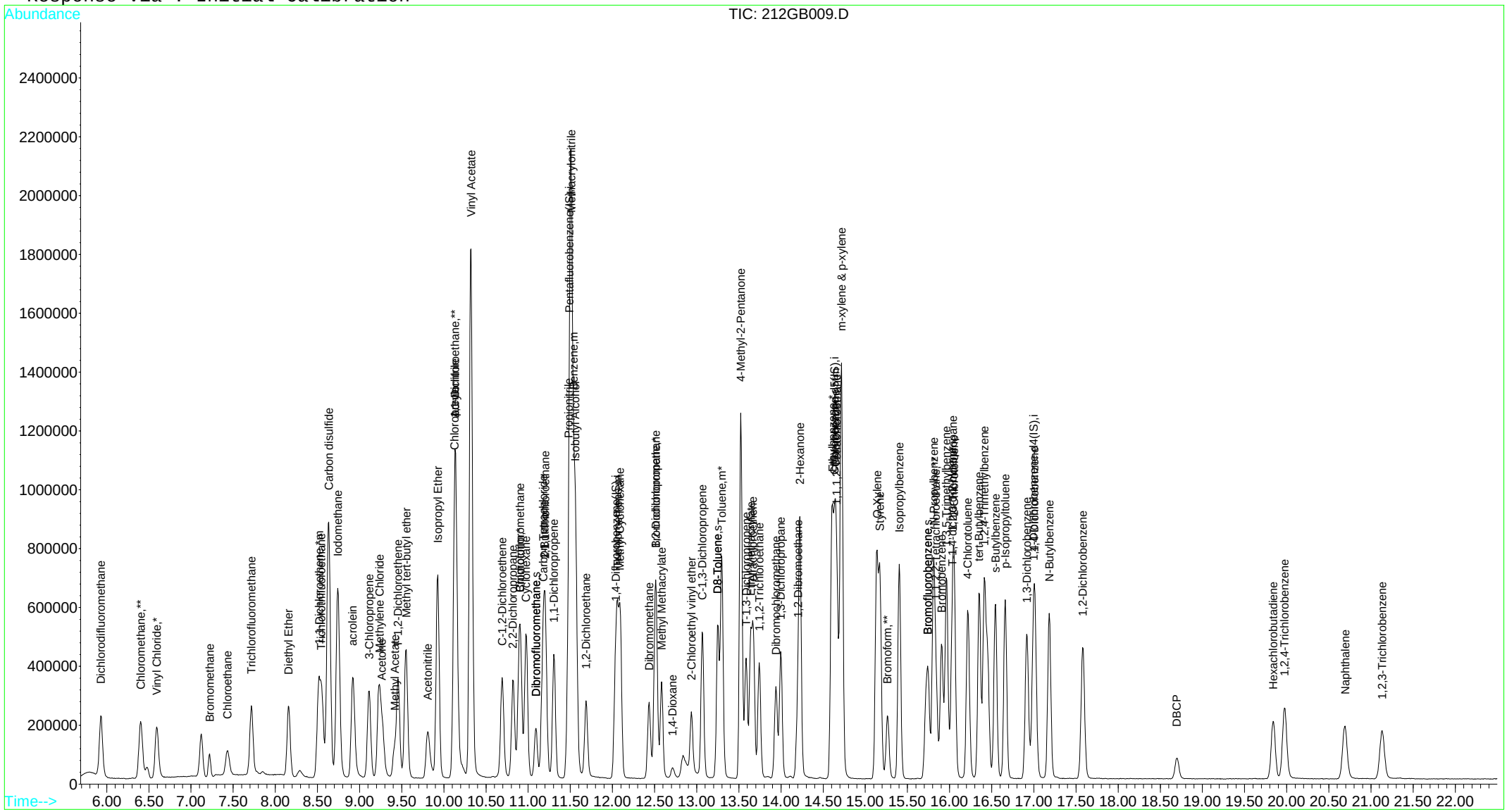
Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB009.D Vial: 9
Acq On : 7 Jul 2021 12:20 pm Operator: KG
Sample : AA67203-CAL8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 12:43 2021 Quant Results File: 061821.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB009.D Vial: 9
Acq On : 7 Jul 2021 12:20 pm Operator: KG
Sample : AA67203-CAL8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 12:43 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.48	168	186248	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.03	114	321571	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	149062	50.00	ug/kg	0.01
79) 1,4-Dichlorobenzene-d4(IS)	16.99	152	124574	50.00	ug/kg	0.01
System Monitoring Compounds						
30) Dibromofluoromethane	11.09	113	142796	80.31	ug/kg	0.01
Spiked Amount 50.000	Range 53 - 146		Recovery = 160.62%#			
54) D8-Toluene	13.25	98	438475	72.56	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 145.12%			
75) Bromofluorobenzene	15.75	95	172349	75.85	ug/kg	0.01
Spiked Amount 50.000	Range 41 - 142		Recovery = 151.70%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	314035	118.66	ug/kg	100
3) Chloromethane	6.40	50	380451	124.08	ug/kg	99
4) Vinyl Chloride	6.59	62	297222	120.70	ug/kg	98
5) Bromomethane	7.22	96	54194	43.93	ug/kg	97
6) Chloroethane	7.43	64	131680	92.98	ug/kg	98
7) Trichlorofluoromethane	7.72	101	279254	88.08	ug/kg	100
8) Trichlorotrifluoroethane	8.55	101	175970	93.32	ug/kg	91
9) acrolein	8.92	56	515190	1351.83	ug/kg	99
10) Acetone	9.27	43	317600	475.19	ug/kg	90
11) 1,1-Dichloroethene	8.51	96	169271	94.86	ug/kg	88
12) 3-Chloropropene	9.11	76	96441	89.49	ug/kg	96
13) Acetonitrile	9.81	41	303453	1369.50	ug/kg	98
14) Iodomethane	8.74	142	1173564	434.12	ug/kg	97
15) Carbon disulfide	8.63	76	1987425	368.67	ug/kg	100
16) Methylene Chloride	9.23	84	202769	94.04	ug/kg	97
17) Methyl tert-butyl ether	9.55	73	516723	91.73	ug/kg	96
18) Acrylonitrile	10.14	53	1190356	1175.02	ug/kg	99
19) T-1,2-Dichloroethene	9.46	96	189967	102.41	ug/kg	93
20) Isopropyl Ether	9.93	45	854284	101.61	ug/kg	99
21) C-1,2-Dichloroethene	10.69	96	209385	102.75	ug/kg	94
22) 1,1-Dichloroethane	10.13	63	343873	91.22	ug/kg	98
23) Vinyl Acetate	10.32	43	2855211	534.43	ug/kg	99
24) Chloroprene	10.12	88	164994	101.20	ug/kg	83
25) 2-Butanone	11.19	72	112395	574.28	ug/kg	98
26) Propionitrile	11.47	54	320582	1321.85	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	262576	77.39	ug/kg	99
28) Methacrylonitrile	11.51	67	839582	1115.74	ug/kg	93
29) Chloroform	10.91	83	330070	83.84	ug/kg	99
31) Dibromofluoromethane	11.09	113	142796	80.31	ug/kg	100
32) Bromochloromethane	10.90	128	114827	101.69	ug/kg	99
33) 1,1,1-Trichloroethane	11.21	97	256844	81.32	ug/kg	95
34) 1,1-Dichloropropene	11.30	75	259822	90.76	ug/kg	96
35) Diethyl Ether	8.15	59	190721	100.36	ug/kg	99
36) Methyl Acetate	9.41	74	37460	108.15	ug/kg	95
37) Cyclohexane	10.97	56	305307	103.44	ug/kg	97
39) Methyl Cyclohexane	12.10	55	223538	82.51	ug/kg	97
40) Carbon Tetrachloride	11.17	117	271912	79.54	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	250571	71.26	ug/kg	97
42) Benzene	11.55	78	672522	82.65	ug/kg	98
43) Isobutyl Alcohol	11.57	43	341223	1902.80	ug/kg	95
44) Trichloroethene	12.06	130	212083	93.66	ug/kg	94
45) 1,2-Dichloropropane	12.51	63	213919	91.80	ug/kg	90
46) Methyl Methacrylate	12.58	100	65311	102.60	ug/kg	94
47) 1,4-Dioxane	12.72	88	38714	2306.45	ug/kg	97
48) Bromodichloromethane	12.52	83	259264	81.86	ug/kg	97
49) Dibromomethane	12.44	93	136933	90.01	ug/kg	97
50) 4-Methyl-2-Pentanone	13.52	100	154939	539.45	ug/kg	90
51) 2-Chloroethyl vinyl ether	12.94	63	108643	291.64	ug/kg	99
52) 2-Hexanone	14.22	43	810033	540.10	ug/kg	96

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\070721\212GB009.D Vial: 9
Acq On : 7 Jul 2021 12:20 pm Operator: KG
Sample : AA67203-CAL8 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 7 12:43 2021 Quant Results File: 061821.RES

Quant Method : C:\HPCHEM\1\METHODS\061821.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Fri Jun 18 11:00:50 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

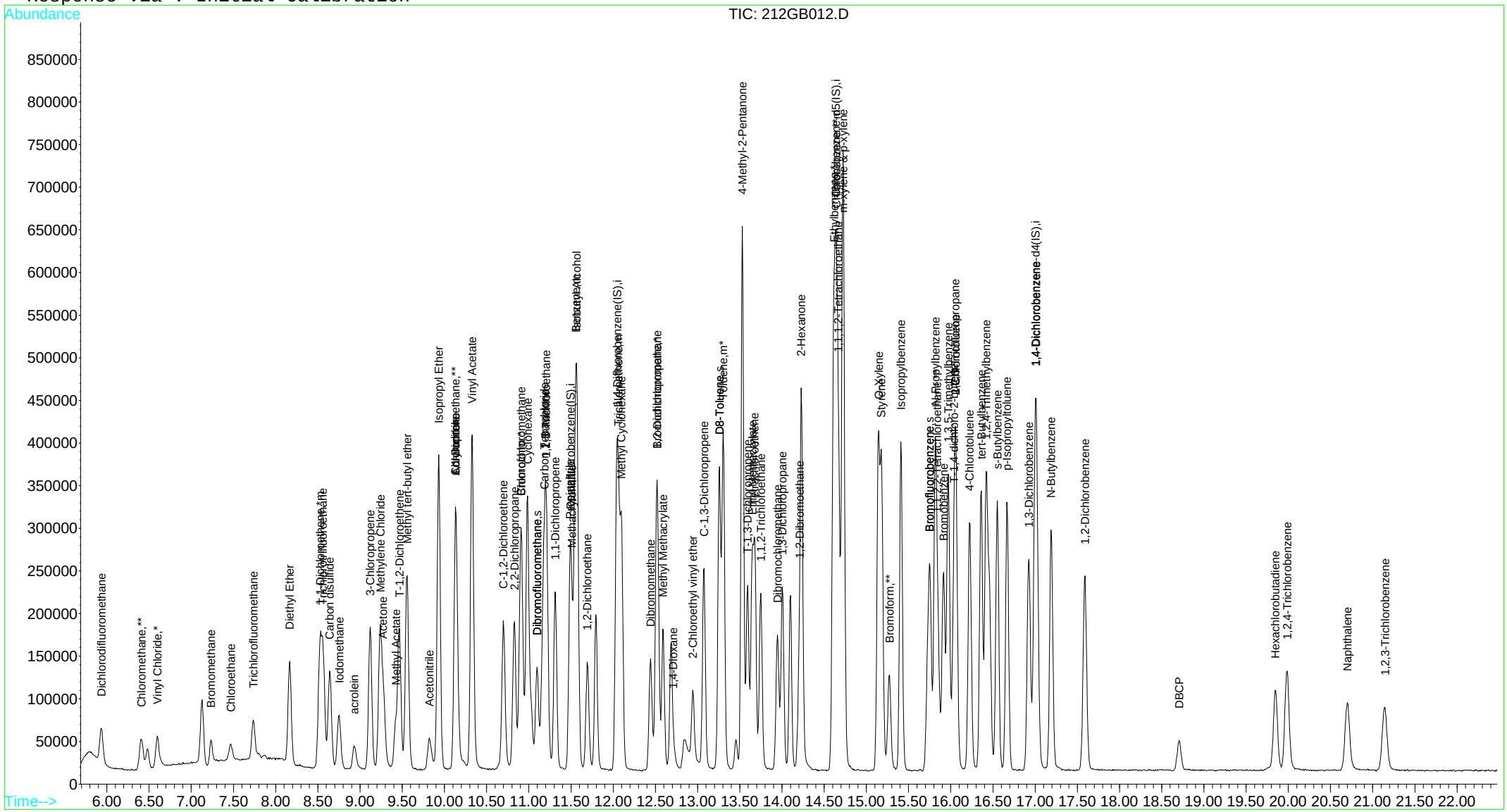
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53) C-1,3-Dichloropropene	13.06	75	364184	89.25	ug/kg	93
55) D8-Toluene	13.25	98	438475	72.56	ug/kg	93
57) Toluene	13.30	92	435217	107.83	ug/kg	98
58) Ethyl Methacrylate	13.64	69	289259	122.61	ug/kg	97
59) T-1,3-Dichloropropene	13.59	75	291821	98.51	ug/kg	99
60) 1,1,2-Trichloroethane	13.74	97	166928	109.66	ug/kg	95
61) 1,3-Dichloropropane	14.00	76	330575	102.72	ug/kg	98
62) Tetrachloroethene	13.67	164	144691	99.20	ug/kg	97
63) Dibromochloromethane	13.94	129	234941	112.16	ug/kg	99
64) 1,2-Dibromoethane	14.19	107	204805	113.19	ug/kg	98
65) Chlorobenzene	14.65	112	473057	109.20	ug/kg	91
66) 1,1,1,2-Tetrachloroethane	14.67	131	185770	104.20	ug/kg	90
67) Ethylbenzene	14.60	106	244523	114.09	ug/kg	86
68) m-xylene & p-xylene	14.72	106	581796	217.74	ug/kg	86
69) O-Xylene	15.13	106	301536	116.09	ug/kg	87
70) Bromoform	15.27	173	137111	108.84	ug/kg	99
71) Styrene	15.18	104	512012	110.16	ug/kg	92
72) Isopropylbenzene	15.40	105	721273	109.73	ug/kg	98
73) 1,2,3-Trichloropropane	16.03	75	258851	107.08	ug/kg	99
74) 1,1,2,2-Tetrachloroethane	15.84	83	221979	111.06	ug/kg	100
76) Bromofluorobenzene	15.75	95	172349	75.85	ug/kg#	62
77) T-1,4-dichloro-2-butene	16.02	53	63767	110.82	ug/kg	93
78) N-Propylbenzene	15.81	91	832309	103.99	ug/kg	97
80) Bromobenzene	15.90	156	201905	97.25	ug/kg	96
81) 1,3,5-Trimethylbenzene	15.97	105	560910	104.40	ug/kg	96
82) 2-Chlorotoluene	16.06	91	500938	99.28	ug/kg	95
83) 4-Chlorotoluene	16.21	91	529691	100.07	ug/kg	95
84) 1,2,4-Trimethylbenzene	16.41	105	565550	105.41	ug/kg	96
85) s-Butylbenzene	16.55	105	665789	108.76	ug/kg	100
86) tert-Butylbenzene	16.36	119	501113	105.53	ug/kg	94
87) p-Isopropyltoluene	16.66	119	587482	108.07	ug/kg	97
88) 1,3-Dichlorobenzene	16.91	146	353363	103.38	ug/kg	99
89) 1,4-Dichlorobenzene	17.01	146	362208	102.59	ug/kg	98
90) 1,2-Dichlorobenzene	17.58	146	341125	106.11	ug/kg	98
91) N-Butylbenzene	17.18	91	513732	108.88	ug/kg	97
92) DBCP	18.69	75	32230	96.48	ug/kg	89
93) Naphthalene	20.69	128	350032	102.60	ug/kg	100
94) 1,2,4-Trichlorobenzene	19.97	180	167820	95.77	ug/kg	99
95) Hexachlorobutadiene	19.85	225	72299	75.66	ug/kg	98
96) 1,2,3-Trichlorobenzene	21.13	180	123578	91.29	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report

Data File : C:\HPCHEM\1\DATA\070721\212GB012.D Vial: 12
Acq On : 7 Jul 2021 1:51 pm Operator: KG
Sample : AA67203-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 8:05 2021 Quant Results File: 070721.RES

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\HPCHEM\1\DATA\070721\212GB012.D Vial: 12
Acq On : 7 Jul 2021 1:51 pm Operator: KG
Sample : AA67203-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 8:05 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Pentafluorobenzene(IS)	11.49	168	194936	50.00	ug/kg	0.00
38) 1,4-Difluorobenzene(IS)	12.04	114	323837	50.00	ug/kg	0.00
56) Chlorobenzene-d5(IS)	14.63	82	148905	50.00	ug/kg	0.00
79) 1,4-Dichlorobenzene-d4(IS)	17.00	152	124145	50.00	ug/kg	0.00
System Monitoring Compounds						
30) Dibromofluoromethane	11.10	113	95655	48.06	ug/kg	0.00
Spiked Amount 50.000	Range 53 - 146		Recovery = 96.12%			
54) D8-Toluene	13.26	98	298334	49.83	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 146		Recovery = 99.66%			
75) Bromofluorobenzene	15.75	95	117323	50.07	ug/kg	0.00
Spiked Amount 50.000	Range 41 - 142		Recovery = 100.14%			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	5.93	85	62032	19.54	ug/kg	98
3) Chloromethane	6.41	50	74598	19.07	ug/kg	100
4) Vinyl Chloride	6.60	62	57234	18.75	ug/kg	98
5) Bromomethane	7.23	96	19651	12.03	ug/kg	97
6) Chloroethane	7.47	64	27188	19.66	ug/kg	97
7) Trichlorofluoromethane	7.74	101	56030	19.60	ug/kg	99
8) Trichlorotrifluoroethane	8.56	101	82951	44.90	ug/kg	99
9) acrolein	8.93	56	43666	91.03	ug/kg	97
10) Acetone	9.28	43	162674	248.34	ug/kg	99
11) 1,1-Dichloroethene	8.52	96	78488	44.96	ug/kg	98
12) 3-Chloropropene	9.12	76	53889	55.08	ug/kg	100
13) Acetonitrile	9.82	41	71046	231.08	ug/kg	99
14) Iodomethane	8.75	142	114118	52.24	ug/kg	100
15) Carbon disulfide	8.64	76	253269	59.98	ug/kg	100
16) Methylene Chloride	9.24	84	102762	45.34	ug/kg	99
17) Methyl tert-butyl ether	9.56	73	270265	48.20	ug/kg	99
18) Acrylonitrile	10.13	53	202435	178.37	ug/kg#	73
19) T-1,2-Dichloroethene	9.47	96	94487	44.97	ug/kg	98
20) Isopropyl Ether	9.93	45	451142	48.93	ug/kg	100
21) C-1,2-Dichloroethene	10.70	96	105161	46.40	ug/kg	99
22) 1,1-Dichloroethane	10.14	63	185921	48.69	ug/kg	99
23) Vinyl Acetate	10.33	43	296407	51.04	ug/kg	98
24) Chloroprene	10.12	88	83846	53.13	ug/kg	1
25) 2-Butanone	11.20	72	64694m	281.14	ug/kg	
26) Propionitrile	11.48	54	14386	45.92	ug/kg	100
27) 2,2-Dichloropropane	10.82	77	133871	46.16	ug/kg	93
28) Methacrylonitrile	11.52	67	46531	52.71	ug/kg	82
29) Chloroform	10.92	83	170120	47.28	ug/kg	98
31) Dibromofluoromethane	11.10	113	95655	48.06	ug/kg	100
32) Bromochloromethane	10.90	128	60538	46.47	ug/kg	99
33) 1,1,1-Trichloroethane	11.21	97	132581	48.21	ug/kg	98
34) 1,1-Dichloropropene	11.31	75	128132	45.87	ug/kg	100
35) Diethyl Ether	8.17	59	93862	44.88	ug/kg	99
36) Methyl Acetate	9.42	74	20681	53.62	ug/kg	99
37) Cyclohexane	10.99	56	152241	46.71	ug/kg	98
39) Methyl Cyclohexane	12.10	55	112321	48.70	ug/kg	100
40) Carbon Tetrachloride	11.18	117	135811	48.43	ug/kg	99
41) 1,2-Dichloroethane	11.69	62	127247	47.16	ug/kg	99
42) Benzene	11.55	78	363497	48.98	ug/kg#	54
43) Isobutyl Alcohol	11.57	43	103289	579.39	ug/kg#	1
44) Trichloroethene	12.07	130	104163	48.66	ug/kg	99
45) 1,2-Dichloropropane	12.51	63	107752	46.16	ug/kg	99
46) Methyl Methacrylate	12.59	100	32883	52.98	ug/kg	96
47) 1,4-Dioxane	12.72	88	19335	1022.22	ug/kg	96
48) Bromodichloromethane	12.53	83	134794	49.49	ug/kg	100
49) Dibromomethane	12.44	93	68761	48.59	ug/kg	98
50) 4-Methyl-2-Pentanone	13.53	100	79749	250.71	ug/kg	95
51) 2-Chloroethyl vinyl ether	12.94	63	42893	231.43	ug/kg	99
52) 2-Hexanone	14.23	43	414125	263.73	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\HPCHEM\1\DATA\070721\212GB012.D Vial: 12
Acq On : 7 Jul 2021 1:51 pm Operator: KG
Sample : AA67203-SCV1 Inst : OVGCMS2
Misc : Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 8:05 2021 Quant Results File: 070721.RES

Quant Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Initial Calibration
DataAcq Meth : 8260S

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
53) C-1,3-Dichloropropene	13.08	75	175520	46.11 ug/kg	99
55) D8-Toluene	13.26	98	298334	49.83 ug/kg	93
57) Toluene	13.30	92	226328	49.87 ug/kg	99
58) Ethyl Methacrylate	13.64	69	146553	52.67 ug/kg	99
59) T-1,3-Dichloropropene	13.59	75	154514	49.17 ug/kg	99
60) 1,1,2-Trichloroethane	13.75	97	86959	48.61 ug/kg	100
61) 1,3-Dichloropropane	14.00	76	164793	47.11 ug/kg	99
62) Tetrachloroethene	13.68	164	73400	47.67 ug/kg	99
63) Dibromochloromethane	13.95	129	120329	49.41 ug/kg	100
64) 1,2-Dibromoethane	14.20	107	103616	49.86 ug/kg	100
65) Chlorobenzene	14.65	112	249232	50.09 ug/kg	100
66) 1,1,1,2-Tetrachloroethane	14.67	131	95470	48.52 ug/kg#	53
67) Ethylbenzene	14.61	106	125755	50.54 ug/kg	100
68) m-xylene & p-xylene	14.72	106	297378	96.48 ug/kg	99
69) O-Xylene	15.14	106	154456	50.28 ug/kg	98
70) Bromoform	15.27	173	73157	54.14 ug/kg	100
71) Styrene	15.18	104	262606	53.29 ug/kg	100
72) Isopropylbenzene	15.41	105	373612	50.47 ug/kg	99
73) 1,2,3-Trichloropropane	16.04	75	129718	47.58 ug/kg	98
74) 1,1,2,2-Tetrachloroethane	15.85	83	114021	48.29 ug/kg	98
76) Bromofluorobenzene	15.75	95	117323	50.07 ug/kg#	67
77) T-1,4-dichloro-2-butene	16.03	53	30718	48.81 ug/kg	97
78) N-Propylbenzene	15.82	91	429960	49.88 ug/kg	100
80) Bromobenzene	15.92	156	103941	49.13 ug/kg	97
81) 1,3,5-Trimethylbenzene	15.97	105	285809	48.76 ug/kg	100
82) 2-Chlorotoluene	16.07	91	256822	47.82 ug/kg	99
83) 4-Chlorotoluene	16.22	91	271956	49.43 ug/kg	99
84) 1,2,4-Trimethylbenzene	16.42	105	294262	49.43 ug/kg	100
85) s-Butylbenzene	16.55	105	349978	50.26 ug/kg	100
86) tert-Butylbenzene	16.36	119	255281	48.69 ug/kg	98
87) p-Isopropyltoluene	16.67	119	301234	50.39 ug/kg	100
88) 1,3-Dichlorobenzene	16.93	146	181824	50.67 ug/kg	99
89) 1,4-Dichlorobenzene	17.02	146	176748	48.14 ug/kg	98
90) 1,2-Dichlorobenzene	17.59	146	172079	50.65 ug/kg	100
91) N-Butylbenzene	17.19	91	257645	49.47 ug/kg	100
92) DBCP	18.71	75	16306	52.08 ug/kg	98
93) Naphthalene	20.70	128	155871	49.05 ug/kg	100
94) 1,2,4-Trichlorobenzene	19.99	180	80942	50.73 ug/kg	98
95) Hexachlorobutadiene	19.85	225	33358	48.13 ug/kg	99
96) 1,2,3-Trichlorobenzene	21.14	180	56516	48.69 ug/kg	98

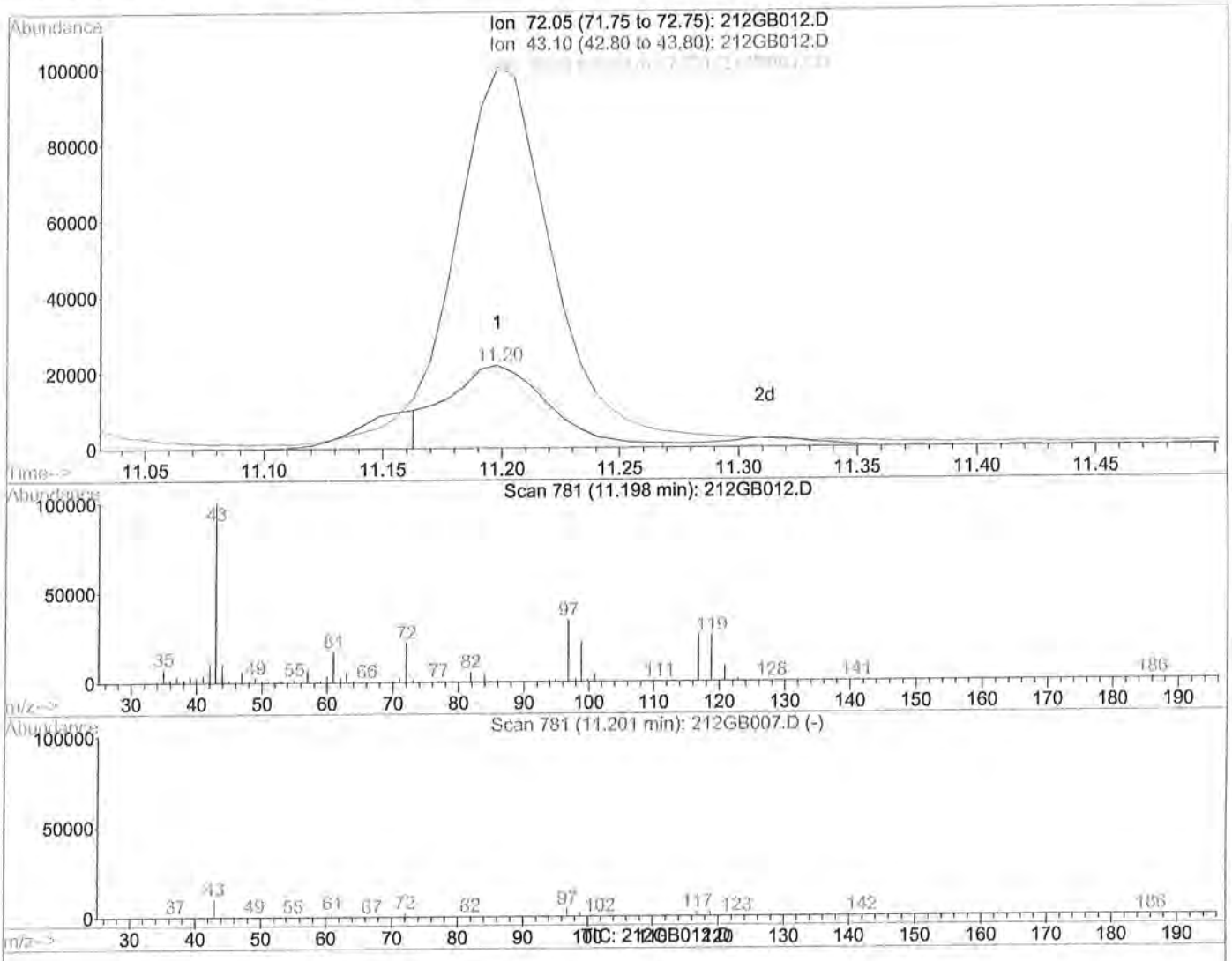
(#) = qualifier out of range (m) = manual integration

Quantitation Report (Qedit)

Data File : C:\HPCHEM\1\DATA\070721\212GB012.D
Acq On : 7 Jul 2021 1:51 pm
Sample : AA67203-SCV1
Misc :
MS Integration Params: RTEINT.P
Quant Time: Jul 8 8:05 2021

Vial: 12
Operator: KG
Inst : OVGCMS2
Multiplr: 1.00
Quant Results File: temp.res

Method : C:\HPCHEM\1\METHODS\070721.M (RTE Integrator)
Title : ENCO SOP VGCMS/05; element cal
Last Update : Wed Jul 07 13:09:04 2021
Response via : Multiple Level Calibration



(25) 2-Butanone

11.20min 281.14ug/kg m

response 64694

Ion	Exp%	Act%
72.05	100	100
43.10	499.90	450.46
57.00	33.40	29.15
0.00	0.00	0.00

Select One:

[ ] Original Integration [✓] Manual Integration

Select reason for manual integration:

[✓] Poor integration (peak tailing, baseline selection)

[ ] Incorrect peak selection/Peak not found

[ ] Hump integration

[ ] Baseline drop for split peaks

[ ] ISTD reintegration

[ ] Other:

Review by/Date 7/8/21

Review by/Date:

TETRA TECH ISG
TtEGS, Information Systems Group

Completion Ticket

On 8/6/2021 at 11:48 AM the following files were submitted to Tetra Tech by kdylnicki@encolabs.com with ENCO:

TE015AE05878A1.txt, TE015AE05878A3.txt

If you need to identify this session at a later date refer to Ticket Key:

202186_615702958_ledd_ENCO

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I Lori S. Mangrum, as the designated Quality Assurance Officer, hereby attest that all electronic deliverables have been thoroughly reviewed and are in agreement with the associated hardcopy data. The enclosed electronic files have been reviewed for accuracy (including significant figures), completeness and format. The laboratory will be responsible for any labor time necessary to correct enclosed electronic deliverables that have been found to be in error. I can be reached at (407) 826-5314 if there are any questions or problems with the enclosed electronic deliverables.

Signature:_____ Title: Quality Assurance Manager Date: August 10, 2021

ENCO Laboratories

Accurate. Timely. Responsive. Innovative.

10775 Central Port Drive
Orlando FL, 32824
Phone: 407.826.5314 FAX: 407.850.6945

Monday, August 23, 2021
Tetra Tech NUS, Inc. (TE015)
Attn: Chris Hook
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: Laboratory Results for
Project Number: 112G08982, Project Name/Desc: NASA KSC HMFN
ENCO Workorder(s): AE06648

Dear Chris Hook,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, August 13, 2021.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative if applicable. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Orlando. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Kaitlin Dylnicki

Project Manager

Enclosure(s)

www.encolabs.com

SAMPLE SUMMARY/LABORATORY CHRONICLE

Client ID: HMPN-DRUM223937-20210812 **Lab ID:** AE06648-01 **Sampled:** 08/12/21 15:45 **Received:** 08/13/21 12:00

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/26/21	08/17/21 09:13	08/17/21 13:31

Client ID: HMPN-DRUM223937-20210812 **Lab ID:** AE06648-01RE1 **Sampled:** 08/12/21 15:45 **Received:** 08/13/21 12:00

Parameter	Preparation	Hold Date/Time(s)	Prep Date/Time(s)	Analysis Date/Time(s)
EPA 8260D	EPA 5030B_MS	08/26/21	08/19/21 00:00	08/19/21 14:34

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

SAMPLE DETECTION SUMMARY

Client ID: HMPN-DRUM223937-20210812 **Lab ID:** AE06648-01

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
cis-1,2-Dichloroethene	180		5.3	25	ug/L	EPA 8260D	
Trichloroethene	610		8.9	25	ug/L	EPA 8260D	

Client ID: HMPN-DRUM223937-20210812 **Lab ID:** AE06648-01RE1

Analyte	Results	Flag	MDL	PQL	Units	Method	Notes
Freon 113	22	I	7.3	25	ug/L	EPA 8260D	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

ANALYTICAL RESULTS

Description: HMPN-DRUM223937-20210812 **Lab Sample ID:** AE06648-01 **Received:** 08/13/21 12:00

Matrix: Ground Water **Sampled:** 08/12/21 15:45 **Work Order:** AE06648

Project: NASA KSC HMFN **Sampled By:**

Volatile Organic Compounds by GCMS

^ - ENCO Orlando certified analyte [NELAC E83182]

Analyte [CAS Number]	Results	Flag	Units	DF	MDL	PQL	Batch	Method	Analyzed	By	Notes
1,1,1-Trichloroethane [71-55-6]^	8.0	U	ug/L	10	8.0	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,1,2,2-Tetrachloroethane [79-34-5]^	5.4	U	ug/L	10	5.4	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,1,2-Trichloroethane [79-00-5]^	7.6	U	ug/L	10	7.6	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,1-Dichloroethane [75-34-3]^	6.2	U	ug/L	10	6.2	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,1-Dichloroethene [75-35-4]^	9.4	U	ug/L	10	9.4	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,2,4-Trichlorobenzene [120-82-1]^	7.0	U	ug/L	10	7.0	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,2-Dibromo-3-chloropropane [96-12-8]^	9.6	U	ug/L	10	9.6	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,2-Dibromoethane [106-93-4]^	7.8	U	ug/L	10	7.8	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,2-Dichlorobenzene [95-50-1]^	7.3	U	ug/L	10	7.3	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,2-Dichloroethane [107-06-2]^	6.3	U	ug/L	10	6.3	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,2-Dichloropropane [78-87-5]^	8.0	U	ug/L	10	8.0	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,3-Dichlorobenzene [541-73-1]^	7.7	U	ug/L	10	7.7	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
1,4-Dichlorobenzene [106-46-7]^	7.6	U	ug/L	10	7.6	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Bromodichloromethane [75-27-4]^	5.2	U	ug/L	10	5.2	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Bromoform [75-25-2]^	7.5	U	ug/L	10	7.5	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Bromomethane [74-83-9]^	9.5	U	ug/L	10	9.5	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Carbon Tetrachloride [56-23-5]^	9.4	U	ug/L	10	9.4	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Chlorobenzene [108-90-7]^	7.2	U	ug/L	10	7.2	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Chloroethane [75-00-3]^	9.8	U	ug/L	10	9.8	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Chloroform [67-66-3]^	8.0	U	ug/L	10	8.0	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Chloromethane [74-87-3]^	8.2	U	ug/L	10	8.2	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
cis-1,2-Dichloroethene [156-59-2]^	**180**		ug/L	10	5.3	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
cis-1,3-Dichloropropene [10061-01-5]^	5.9	U	ug/L	10	5.9	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Dibromochloromethane [124-48-1]^	5.0	U	ug/L	10	5.0	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Dichlorodifluoromethane [75-71-8]^	7.4	U	ug/L	10	7.4	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Freon 113 [76-13-1]^	**22**	I	ug/L	10	7.3	25	1H19016	EPA 8260D	08/19/21 14:34	kg	
Tetrachloroethene [127-18-4]^	7.6	U	ug/L	10	7.6	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
trans-1,2-Dichloroethene [156-60-5]^	7.3	U	ug/L	10	7.3	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
trans-1,3-Dichloropropene [10061-02-6]^	7.3	U	ug/L	10	7.3	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Trichloroethene [79-01-6]^	**610**		ug/L	10	8.9	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Trichlorofluoromethane [75-69-4]^	9.4	U	ug/L	10	9.4	25	1H17016	EPA 8260D	08/17/21 13:31	KG	
Vinyl chloride [75-01-4]^	7.1	U	ug/L	10	7.1	25	1H17016	EPA 8260D	08/17/21 13:31	KG	

Surrogates	*Results*	*DF*	*Spike Lvl*	*% Rec*	*% Rec Limits*	*Batch*	*Method*	*Analyzed*	*By*	Notes
4-Bromofluorobenzene	*48*	*1*	*50.0*	*95 %*	*41-142*	*1H17016*	*EPA 8260D*	*08/17/21 13:31*	*KG*	
4-Bromofluorobenzene	*48*	*1*	*50.0*	*95 %*	*41-142*	*1H19016*	*EPA 8260D*	*08/19/21 14:34*	*kg*	
Dibromofluoromethane	*55*	*1*	*50.0*	*110 %*	*53-146*	*1H17016*	*EPA 8260D*	*08/17/21 13:31*	*KG*	
Dibromofluoromethane	*51*	*1*	*50.0*	*101 %*	*53-146*	*1H19016*	*EPA 8260D*	*08/19/21 14:34*	*kg*	
Toluene-d8	*48*	*1*	*50.0*	*96 %*	*41-146*	*1H17016*	*EPA 8260D*	*08/17/21 13:31*	*KG*	
Toluene-d8	*46*	*1*	*50.0*	*92 %*	*41-146*	*1H19016*	*EPA 8260D*	*08/19/21 14:34*	*kg*	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H17016 - EPA 5030B_MS

Blank (1H17016-BLK1) Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 11:36

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*47*	*I*		*ug/L*	*50.0*		*94*	*41-142*			
Dibromofluoromethane	*54*			*ug/L*	*50.0*		*108*	*53-146*			
Toluene-d8	*47*	*I*		*ug/L*	*50.0*		*95*	*41-146*			

LCS (1H17016-BS1) Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 09:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	22		2.5	ug/L	20.0		108	57-148			
1,1,2,2-Tetrachloroethane	18		2.5	ug/L	20.0		91	60-139			
1,1,2-Trichloroethane	19		2.5	ug/L	20.0		97	57-141			
1,1-Dichloroethane	22		2.5	ug/L	20.0		112	57-142			
1,1-Dichloroethene	23		2.5	ug/L	20.0		117	47-139			
1,2,4-Trichlorobenzene	18		2.5	ug/L	20.0		92	52-159			
1,2-Dibromo-3-chloropropane	17		2.5	ug/L	20.0		84	48-150			
1,2-Dibromoethane	20		2.5	ug/L	20.0		100	57-140			
1,2-Dichlorobenzene	19		2.5	ug/L	20.0		96	63-131			

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H17016 - EPA 5030B_MS - Continued

LCS (1H17016-BS1) Continued Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 09:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,2-Dichloroethane	19		2.5	ug/L	20.0		94	50-156			
1,2-Dichloropropane	18		2.5	ug/L	20.0		90	61-133			
1,3-Dichlorobenzene	20		2.5	ug/L	20.0		98	66-129			
1,4-Dichlorobenzene	19		2.5	ug/L	20.0		94	65-133			
Bromodichloromethane	19		2.5	ug/L	20.0		94	58-135			
Bromoform	21		2.5	ug/L	20.0		104	46-148			
Bromomethane	8.3		2.5	ug/L	20.0		42	10-173			
Carbon Tetrachloride	20		2.5	ug/L	20.0		102	54-156			
Chlorobenzene	21		2.5	ug/L	20.0		106	51-139			
Chloroethane	19		2.5	ug/L	20.0		94	27-180			
Chloroform	21		2.5	ug/L	20.0		107	58-139			
Chloromethane	21		2.5	ug/L	20.0		103	33-154			
cis-1,2-Dichloroethene	21		2.5	ug/L	20.0		106	56-128			
cis-1,3-Dichloropropene	18		2.5	ug/L	20.0		90	64-128			
Dibromochloromethane	20		2.5	ug/L	20.0		102	50-140			
Dichlorodifluoromethane	22		2.5	ug/L	20.0		111	10-180			
Freon 113	23		2.5	ug/L	20.0		116	47-173			
Tetrachloroethene	22		2.5	ug/L	20.0		112	60-147			
trans-1,2-Dichloroethene	21		2.5	ug/L	20.0		107	54-134			
trans-1,3-Dichloropropene	20		2.5	ug/L	20.0		98	65-149			
Trichloroethene	22		2.5	ug/L	20.0		109	62-135			
Trichlorofluoromethane	20		2.5	ug/L	20.0		99	56-155			
Vinyl chloride	19		2.5	ug/L	20.0		96	20-167			
4-Bromofluorobenzene	*50*			*ug/L*	*50.0*		*100*	*41-142*			
Dibromofluoromethane	*56*			*ug/L*	*50.0*		*111*	*53-146*			
Toluene-d8	*49*	*I*		*ug/L*	*50.0*		*99*	*41-146*			

Matrix Spike (1H17016-MS1) Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 09:41

Source: AE06648-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	220		25	ug/L	200	8.0 U	109	57-148			
1,1,2,2-Tetrachloroethane	170		25	ug/L	200	5.4 U	86	60-139			
1,1,2-Trichloroethane	180		25	ug/L	200	7.6 U	92	57-141			
1,1-Dichloroethane	220		25	ug/L	200	6.2 U	109	57-142			
1,1-Dichloroethene	240		25	ug/L	200	9.4 U	121	47-139			
1,2,4-Trichlorobenzene	190		25	ug/L	200	7.0 U	97	52-159			
1,2-Dibromo-3-chloropropane	170		25	ug/L	200	9.6 U	85	48-150			
1,2-Dibromoethane	190		25	ug/L	200	7.8 U	96	57-140			
1,2-Dichlorobenzene	190		25	ug/L	200	7.3 U	94	63-131			
1,2-Dichloroethane	180		25	ug/L	200	6.3 U	89	50-156			
1,2-Dichloropropane	180		25	ug/L	200	8.0 U	89	61-133			
1,3-Dichlorobenzene	190		25	ug/L	200	7.7 U	96	66-129			
1,4-Dichlorobenzene	190		25	ug/L	200	7.6 U	93	65-133			
Bromodichloromethane	180		25	ug/L	200	5.2 U	91	58-135			
Bromoform	200		25	ug/L	200	7.5 U	98	46-148			
Bromomethane	110		25	ug/L	200	9.5 U	54	10-173			
Carbon Tetrachloride	210		25	ug/L	200	9.4 U	106	54-156			
Chlorobenzene	210		25	ug/L	200	7.2 U	104	51-139			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H17016 - EPA 5030B_MS - Continued

Matrix Spike (1H17016-MS1) Continued Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 09:41

Source: AE06648-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloroethane	190		25	ug/L	200	9.8 U	95	27-180			
Chloroform	210		25	ug/L	200	8.0 U	103	58-139			
Chloromethane	210		25	ug/L	200	8.2 U	104	33-154			
cis-1,2-Dichloroethene	380		25	ug/L	200	180	101	56-128			
cis-1,3-Dichloropropene	170		25	ug/L	200	5.9 U	85	64-128			
Dibromochloromethane	190		25	ug/L	200	5.0 U	96	50-140			
Dichlorodifluoromethane	230		25	ug/L	200	7.4 U	113	10-180			
Freon 113	270		25	ug/L	200	26	123	47-173			
Tetrachloroethene	200		25	ug/L	200	7.6 U	98	60-147			
trans-1,2-Dichloroethene	220		25	ug/L	200	7.3 U	109	54-134			
trans-1,3-Dichloropropene	190		25	ug/L	200	7.3 U	95	65-149			
Trichloroethene	810		25	ug/L	200	610	101	62-135			
Trichlorofluoromethane	200		25	ug/L	200	9.4 U	100	56-155			
Vinyl chloride	200		25	ug/L	200	7.1 U	100	20-167			
4-Bromofluorobenzene	*490*	*I*		*ug/L*	*500*		*97*	*41-142*			
Dibromofluoromethane	*540*			*ug/L*	*500*		*108*	*53-146*			
Toluene-d8	*480*	*I*		*ug/L*	*500*		*96*	*41-146*			

Matrix Spike Dup (1H17016-MSD1) Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 10:10

Source: AE06648-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	210		25	ug/L	200	8.0 U	105	57-148	3	25	
1,1,2,2-Tetrachloroethane	170		25	ug/L	200	5.4 U	85	60-139	2	17	
1,1,2-Trichloroethane	180		25	ug/L	200	7.6 U	91	57-141	1	16	
1,1-Dichloroethane	210		25	ug/L	200	6.2 U	105	57-142	3	24	
1,1-Dichloroethene	230		25	ug/L	200	9.4 U	114	47-139	6	16	
1,2,4-Trichlorobenzene	180		25	ug/L	200	7.0 U	92	52-159	5	24	
1,2-Dibromo-3-chloropropane	160		25	ug/L	200	9.6 U	80	48-150	6	21	
1,2-Dibromoethane	190		25	ug/L	200	7.8 U	94	57-140	3	16	
1,2-Dichlorobenzene	180		25	ug/L	200	7.3 U	90	63-131	4	25	
1,2-Dichloroethane	170		25	ug/L	200	6.3 U	86	50-156	3	18	
1,2-Dichloropropane	170		25	ug/L	200	8.0 U	86	61-133	3	26	
1,3-Dichlorobenzene	180		25	ug/L	200	7.7 U	90	66-129	6	23	
1,4-Dichlorobenzene	180		25	ug/L	200	7.6 U	90	65-133	3	23	
Bromodichloromethane	180		25	ug/L	200	5.2 U	88	58-135	3	19	
Bromoform	190		25	ug/L	200	7.5 U	97	46-148	0.4	18	
Bromomethane	110		25	ug/L	200	9.5 U	56	10-173	4	29	
Carbon Tetrachloride	200		25	ug/L	200	9.4 U	102	54-156	4	27	
Chlorobenzene	200		25	ug/L	200	7.2 U	101	51-139	3	13	
Chloroethane	180		25	ug/L	200	9.8 U	89	27-180	7	22	
Chloroform	200		25	ug/L	200	8.0 U	99	58-139	4	17	
Chloromethane	200		25	ug/L	200	8.2 U	98	33-154	5	31	
cis-1,2-Dichloroethene	360		25	ug/L	200	180	92	56-128	5	17	
cis-1,3-Dichloropropene	170		25	ug/L	200	5.9 U	84	64-128	1	20	
Dibromochloromethane	190		25	ug/L	200	5.0 U	94	50-140	2	18	
Dichlorodifluoromethane	210		25	ug/L	200	7.4 U	107	10-180	5	26	
Freon 113	260		25	ug/L	200	26	117	47-173	5	30	
Tetrachloroethene	190		25	ug/L	200	7.6 U	94	60-147	4	21	

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H17016 - EPA 5030B_MS - Continued

Matrix Spike Dup (1H17016-MSD1) Continued Prepared: 08/17/2021 08:58 Analyzed: 08/17/2021 10:10

Source: AE06648-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
trans-1,2-Dichloroethene	210		25	ug/L	200	7.3 U	103	54-134	6	20	
trans-1,3-Dichloropropene	180		25	ug/L	200	7.3 U	89	65-149	6	17	
Trichloroethene	770		25	ug/L	200	610	84	62-135	4	20	
Trichlorofluoromethane	190		25	ug/L	200	9.4 U	97	56-155	3	22	
Vinyl chloride	190		25	ug/L	200	7.1 U	93	20-167	7	24	
4-Bromofluorobenzene	*480*	*I*		*ug/L*	*500*		*95*	*41-142*			
Dibromofluoromethane	*540*			*ug/L*	*500*		*107*	*53-146*			
Toluene-d8	*480*	*I*		*ug/L*	*500*		*96*	*41-146*			

Batch 1H19016 - EPA 5030B_MS

Blank (1H19016-BLK1) Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 11:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	0.80	U	2.5	ug/L							
1,1,2,2-Tetrachloroethane	0.54	U	2.5	ug/L							
1,1,2-Trichloroethane	0.76	U	2.5	ug/L							
1,1-Dichloroethane	0.62	U	2.5	ug/L							
1,1-Dichloroethene	0.94	U	2.5	ug/L							
1,2,4-Trichlorobenzene	0.70	U	2.5	ug/L							
1,2-Dibromo-3-chloropropane	0.96	U	2.5	ug/L							
1,2-Dibromoethane	0.78	U	2.5	ug/L							
1,2-Dichlorobenzene	0.73	U	2.5	ug/L							
1,2-Dichloroethane	0.63	U	2.5	ug/L							
1,2-Dichloropropane	0.80	U	2.5	ug/L							
1,3-Dichlorobenzene	0.77	U	2.5	ug/L							
1,4-Dichlorobenzene	0.76	U	2.5	ug/L							
Bromodichloromethane	0.52	U	2.5	ug/L							
Bromoform	0.75	U	2.5	ug/L							
Bromomethane	0.95	U	2.5	ug/L							
Carbon Tetrachloride	0.94	U	2.5	ug/L							
Chlorobenzene	0.72	U	2.5	ug/L							
Chloroethane	0.98	U	2.5	ug/L							
Chloroform	0.80	U	2.5	ug/L							
Chloromethane	0.82	U	2.5	ug/L							
cis-1,2-Dichloroethene	0.53	U	2.5	ug/L							
cis-1,3-Dichloropropene	0.59	U	2.5	ug/L							
Dibromochloromethane	0.50	U	2.5	ug/L							
Dichlorodifluoromethane	0.74	U	2.5	ug/L							
Freon 113	0.73	U	2.5	ug/L							
Tetrachloroethene	0.76	U	2.5	ug/L							
trans-1,2-Dichloroethene	0.73	U	2.5	ug/L							
trans-1,3-Dichloropropene	0.73	U	2.5	ug/L							
Trichloroethene	0.89	U	2.5	ug/L							
Trichlorofluoromethane	0.94	U	2.5	ug/L							
Vinyl chloride	0.71	U	2.5	ug/L							
4-Bromofluorobenzene	*49*	*I*		*ug/L*	*50.0*		*98*	*41-142*			
Dibromofluoromethane	*49*	*I*		*ug/L*	*50.0*		*98*	*53-146*			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H19016 - EPA 5030B_MS - Continued

Blank (1H19016-BLK1) Continued Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 11:12

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Toluene-d8	*46*	*I*		*ug/L*	*50.0*		*92*	*41-146*			

LCS (1H19016-BS1) Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 08:40

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1800		250	ug/L	2000		88	57-148			
1,1,2,2-Tetrachloroethane	1800		250	ug/L	2000		91	60-139			
1,1,2-Trichloroethane	1900		250	ug/L	2000		97	57-141			
1,1-Dichloroethane	1800		250	ug/L	2000		90	57-142			
1,1-Dichloroethene	2100		250	ug/L	2000		104	47-139			
1,2,4-Trichlorobenzene	2200		250	ug/L	2000		111	52-159			
1,2-Dibromo-3-chloropropane	1800		250	ug/L	2000		91	48-150			
1,2-Dibromoethane	2000		250	ug/L	2000		99	57-140			
1,2-Dichlorobenzene	2100		250	ug/L	2000		104	63-131			
1,2-Dichloroethane	1600		250	ug/L	2000		81	50-156			
1,2-Dichloropropane	1600		250	ug/L	2000		81	61-133			
1,3-Dichlorobenzene	2100		250	ug/L	2000		103	66-129			
1,4-Dichlorobenzene	2000		250	ug/L	2000		101	65-133			
Bromodichloromethane	1600		250	ug/L	2000		82	58-135			
Bromoform	2000		250	ug/L	2000		102	46-148			
Bromomethane	830		250	ug/L	2000		41	10-173			
Carbon Tetrachloride	1800		250	ug/L	2000		91	54-156			
Chlorobenzene	2100		250	ug/L	2000		107	51-139			
Chloroethane	2100		250	ug/L	2000		105	27-180			
Chloroform	1700		250	ug/L	2000		86	58-139			
Chloromethane	1600		250	ug/L	2000		81	33-154			
cis-1,2-Dichloroethene	1700		250	ug/L	2000		87	56-128			
cis-1,3-Dichloropropene	1600		250	ug/L	2000		79	64-128			
Dibromochloromethane	2000		250	ug/L	2000		101	50-140			
Dichlorodifluoromethane	1700		250	ug/L	2000		84	10-180			
Freon 113	2100		250	ug/L	2000		105	47-173			
Tetrachloroethene	2000		250	ug/L	2000		100	60-147			
trans-1,2-Dichloroethene	1800		250	ug/L	2000		89	54-134			
trans-1,3-Dichloropropene	1900		250	ug/L	2000		94	65-149			
Trichloroethene	2000		250	ug/L	2000		99	62-135			
Trichlorofluoromethane	1900		250	ug/L	2000		96	56-155			
Vinyl chloride	1900		250	ug/L	2000		94	20-167			
4-Bromofluorobenzene	*4800*	*I*		*ug/L*	*5000*		*96*	*41-142*			
Dibromofluoromethane	*4600*	*I*		*ug/L*	*5000*		*93*	*53-146*			
Toluene-d8	*4500*	*I*		*ug/L*	*5000*		*90*	*41-146*			

Matrix Spike (1H19016-MS1) Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 09:11

Source: AE06547-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	2000		250	ug/L	2000	80 U	98	57-148			
1,1,2,2-Tetrachloroethane	1800		250	ug/L	2000	54 U	90	60-139			
1,1,2-Trichloroethane	2000		250	ug/L	2000	76 U	99	57-141			
1,1-Dichloroethane	1900		250	ug/L	2000	62 U	96	57-142			

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QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H19016 - EPA 5030B_MS - Continued

Matrix Spike (1H19016-MS1) Continued Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 09:11

Source: AE06547-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1-Dichloroethene	2100		250	ug/L	2000	94 U	106	47-139			
1,2,4-Trichlorobenzene	2200		250	ug/L	2000	70 U	111	52-159			
1,2-Dibromo-3-chloropropane	1800		250	ug/L	2000	96 U	89	48-150			
1,2-Dibromoethane	2000		250	ug/L	2000	78 U	101	57-140			
1,2-Dichlorobenzene	2100		250	ug/L	2000	73 U	104	63-131			
1,2-Dichloroethane	1700		250	ug/L	2000	63 U	84	50-156			
1,2-Dichloropropane	1700		250	ug/L	2000	80 U	84	61-133			
1,3-Dichlorobenzene	2100		250	ug/L	2000	77 U	105	66-129			
1,4-Dichlorobenzene	2000		250	ug/L	2000	76 U	101	65-133			
Bromodichloromethane	1800		250	ug/L	2000	52 U	88	58-135			
Bromoform	2100		250	ug/L	2000	75 U	103	46-148			
Bromomethane	1100		250	ug/L	2000	95 U	57	10-173			
Carbon Tetrachloride	2000		250	ug/L	2000	94 U	100	54-156			
Chlorobenzene	2200		250	ug/L	2000	72 U	109	51-139			
Chloroethane	2300		250	ug/L	2000	98 U	114	27-180			
Chloroform	1900		250	ug/L	2000	80 U	94	58-139			
Chloromethane	1800		250	ug/L	2000	82 U	88	33-154			
cis-1,2-Dichloroethene	1800		250	ug/L	2000	53 U	92	56-128			
cis-1,3-Dichloropropene	1600		250	ug/L	2000	59 U	80	64-128			
Dibromochloromethane	2000		250	ug/L	2000	50 U	101	50-140			
Dichlorodifluoromethane	1900		250	ug/L	2000	74 U	96	10-180			
Freon 113	2200		250	ug/L	2000	73 U	108	47-173			
Tetrachloroethene	2000		250	ug/L	2000	76 U	102	60-147			
trans-1,2-Dichloroethene	1900		250	ug/L	2000	73 U	96	54-134			
trans-1,3-Dichloropropene	1900		250	ug/L	2000	73 U	95	65-149			
Trichloroethene	2100		250	ug/L	2000	89 U	104	62-135			
Trichlorofluoromethane	2100		250	ug/L	2000	94 U	104	56-155			
Vinyl chloride	2100		250	ug/L	2000	71 U	104	20-167			
4-Bromofluorobenzene	*4800*	*I*		*ug/L*	*5000*		*96*	*41-142*			
Dibromofluoromethane	*4800*	*I*		*ug/L*	*5000*		*95*	*53-146*			
Toluene-d8	*4500*	*I*		*ug/L*	*5000*		*89*	*41-146*			

Matrix Spike Dup (1H19016-MSD1) Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 09:46

Source: AE06547-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	1900		250	ug/L	2000	80 U	94	57-148	5	25	
1,1,2,2-Tetrachloroethane	1800		250	ug/L	2000	54 U	92	60-139	3	17	
1,1,2-Trichloroethane	1900		250	ug/L	2000	76 U	95	57-141	4	16	
1,1-Dichloroethane	2100		250	ug/L	2000	62 U	106	57-142	10	24	
1,1-Dichloroethene	2200		250	ug/L	2000	94 U	110	47-139	4	16	
1,2,4-Trichlorobenzene	2100		250	ug/L	2000	70 U	106	52-159	4	24	
1,2-Dibromo-3-chloropropane	1800		250	ug/L	2000	96 U	88	48-150	0.6	21	
1,2-Dibromoethane	2000		250	ug/L	2000	78 U	100	57-140	0.5	16	
1,2-Dichlorobenzene	2000		250	ug/L	2000	73 U	102	63-131	2	25	
1,2-Dichloroethane	1700		250	ug/L	2000	63 U	85	50-156	0.6	18	
1,2-Dichloropropane	1600		250	ug/L	2000	80 U	82	61-133	3	26	
1,3-Dichlorobenzene	2000		250	ug/L	2000	77 U	100	66-129	5	23	
1,4-Dichlorobenzene	2000		250	ug/L	2000	76 U	99	65-133	2	23	

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

QUALITY CONTROL DATA

Volatile Organic Compounds by GCMS - Quality Control

Batch 1H19016 - EPA 5030B_MS - Continued

Matrix Spike Dup (1H19016-MSD1) Continued Prepared: 08/19/2021 00:00 Analyzed: 08/19/2021 09:46

Source: AE06547-01

Analyte	Result	Flag	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Bromodichloromethane	1700		250	ug/L	2000	52 U	83	58-135	5	19	
Bromoform	2000		250	ug/L	2000	75 U	100	46-148	2	18	
Bromomethane	1300		250	ug/L	2000	95 U	66	10-173	13	29	
Carbon Tetrachloride	1900		250	ug/L	2000	94 U	95	54-156	5	27	
Chlorobenzene	2100		250	ug/L	2000	72 U	107	51-139	2	13	
Chloroethane	2200		250	ug/L	2000	98 U	109	27-180	5	22	
Chloroform	1800		250	ug/L	2000	80 U	91	58-139	3	17	
Chloromethane	1900		250	ug/L	2000	82 U	96	33-154	9	31	
cis-1,2-Dichloroethene	1800		250	ug/L	2000	53 U	88	56-128	5	17	
cis-1,3-Dichloropropene	1600		250	ug/L	2000	59 U	80	64-128	0.3	20	
Dibromochloromethane	2000		250	ug/L	2000	50 U	100	50-140	0.9	18	
Dichlorodifluoromethane	1900		250	ug/L	2000	74 U	94	10-180	2	26	
Freon 113	2200		250	ug/L	2000	73 U	112	47-173	4	30	
Tetrachloroethene	2000		250	ug/L	2000	76 U	102	60-147	0.1	21	
trans-1,2-Dichloroethene	2000		250	ug/L	2000	73 U	99	54-134	2	20	
trans-1,3-Dichloropropene	1900		250	ug/L	2000	73 U	96	65-149	0.3	17	
Trichloroethene	2000		250	ug/L	2000	89 U	102	62-135	1	20	
Trichlorofluoromethane	2100		250	ug/L	2000	94 U	103	56-155	0.4	22	
Vinyl chloride	2000		250	ug/L	2000	71 U	101	20-167	3	24	
4-Bromofluorobenzene	*5000*			*ug/L*	*5000*		*101*	*41-142*			
Dibromofluoromethane	*4800*	*I*		*ug/L*	*5000*		*97*	*53-146*			
Toluene-d8	*4700*	*I*		*ug/L*	*5000*		*94*	*41-146*			

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FLAGS/NOTES AND DEFINITIONS

PQL	PQL: Practical Quantitation Limit. The PQL presented is the laboratory MRL.
B	Results are based upon membrane filter colony counts that are outside the method indicated ideal range.
I	The reported value is between the laboratory method detection limit (MDL) and the practical quantitation limit (PQL).
J	Estimated value.
K	Off-scale low; Actual value is known to be less than the value given.
L	Off-scale high; Actual value is known to be greater than value given.
M	Presence of analyte is verified but not quantified; the actual value is less than the MRL but greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
Q	Sample exceeded the accepted holding time.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected in both the sample and the associated method blank.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.
Z	Too many colonies were present (TNTC); the numeric value represents the filtration volume.
?	Data are rejected and should not be used. Some or all of the quality control data for the analyte were outside criteria, and the presence or absence of the analyte cannot be determined from the data.
*	Not reported due to interference.
[CALC]	Calculated analyte - MDL/MRL reported to the highest reporting limit of the component analyses.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-19	The spike recovery was outside acceptance limits for the MS and/or MSD.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

AE06648

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2474 | PAGE 1 OF 1

PROJECT NO: 112G08982	FACILITY: KSC-HMPN	PROJECT MANAGER Chris Hook	PHONE NUMBER (412) 921-7090	LABORATORY NAME AND CONTACT: ENCO — Kristin Dykmans
SAMPLERS (SIGNATURE) Chuck Sorden		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER (321) 591-7580	ADDRESS 10775 Central Park Dr.
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando, FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2021	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260D TCL SOM01 HLI	COMMENTS
									G			
08/12	1545	HMPN-DRUM223937-20210812		—	—	GW	G	3			X	

1. RELINQUISHED BY	DATE 08/13/21	TIME 1200	1. RECEIVED BY	DATE 8/13/21	TIME 1200
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS Sm-485 0.10

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

APPENDIX G

OM&M FIELD NOTES

Location NRSA Date

Project / Client HMFN

212.g Pt 01364

Cloudy 5 to 10 mph 95°

Robert Siegel

1540 System Readings Tank

	FT101	FT 101	PT101
Tank	118°F	450 gpm	95°F
60% use	95 PSI	195°F	Pump 47°F chiller

Zones	C1	C5	C7	C9	C10
Pump PSI	18.0	31.0	34.0	25.0	29.0
SCFM	80.0	145.0	150.0	140.0	144.0
Gauge PSI	18.0	32.0	34.0	33.0	29.0

1550 End readings update notes wait for switch of valves in Trailer

1555 Cal Check 100 = 109.0 gpm

0 = 0

1600 valve switch C 1,2,3,4,6,8 on good switch

Location NRS Date 8-26-2020

Project / Client HMFN

212.g Pt 01364

very Cloudy 0 to 10 mph 95°

Robert Siegel

1630 stop Sample Field update Forms HMFN.VMPI.Field.20200826

1640 stop Sample P. Lot update Forms store sumo cans for Lab pickup review with Dan F

1655 start well readings

1745 End Readings review with Chris H

1800 Test drain Leg 4 Lower no water Fast return to Pressure 20.0 PSI 0 Flow to well group update Chris H pump use at 60% pump 202°F 51°F chiller

1815 offsite H 1915 End

Rain in the Rain

Location LASA Date 8-27-2020

Project / Client HAFN

212ig Pb 01364

Some Clouds 0-5 mph 85°

Robert Siegel

6 30 TT

7 15 Break send Data pickup COC

7 45 TT

8 00 onsite meet with Chris N Ronnie Kyle and Wayne gen Tailgate H&S review

8 30 at Treatment Trailer PT 101 Compressor off 94 PSI panel 40 PSI at Pump gauge Tank Gauge 60 PSI PT 102 at 67 PSI

Compressor at 54 psi 138°F 96°F Pump Chiller

8 55 Call MAE 2 Shawn and Jim send Text Photo of screen

9 00 review with Chris H request wait for MAE to respond Keep power on no reset

Location LASA Date 8-27-2020

Project / Client HAFN

212ig Pb 01364

Some Clouds 0-5 mph 85°

ASC 101 auto on (Green) 138.7 hrs

SV 101 auto on (Green) 132.9 hrs

SV-201 auto on Green 69.9 hrs

19.0 PSI 95 scfm

SV 202 A o b 70.6 hrs

22.1

Photo Display ref Photos

Rite in the Rain

Location NASA Date 8-27-2020

Project / Client HMFN

212 ig Pb 01364

Some Clouds 85° / 0 to 10 mph

Robert Siegel

8-26-2020 PLC

9 15 / 1600 to 2000 Displayed Freeze

Temp Checks

PLC	65°F
Keypad in	60 to 63°F
Keypad out	70°F
PS ups	70°F
PS	70°F
Panel Door	62.5°F
Tx	135°F
East wall	66°F
North wall	70°F
South wall	63°F

1000 Calls To Jim and Shawn MAE2 also Chris Hook no response Texted Chris H to Try To log in

1050 Leah called to set pickup for Friday 12 to 3pm

Location NASA Date 8-27-2020

Project / Client HMFN

212 ig Pb 01364

Cloudy 0 to 10

Robert Siegel

1100 White Screen

1125 Hi Temp Building Ext 8-27-2020

1200 call from Jim MAE gen review checks AC units set 12 00 AM off 6:00 AM on 11 10 on clock

1215 remote reset by Jim restart Legs/zones 1,3,5,9 and 10 on Should be 1,5,7,9,10

1220 call To Jim no answer

1222 call To Hook ok me to key strike panel when unable To get feed back from MAE2

1235 system cycle resets To Zone 1 clocks / Running Zone 1,5,7,9, and 10 on Cleared Alarm Hist.

Rita in the Rain

50

Location NASA Date 8-27-2020

Project / Client HMFN

212ig Pb 01364

1245 offsite TT

1300 Break ~~1400~~ onsite

Calls from MPE2 Shuma

Hi Temp call To Chris &

gen checks compressor cycling

1410 onsite all ACs on

Keypad in	85°
PLC	88°
PS ups	90°
PS	89°
Panel Door	87°
East wall	91°
North wall	92°
South wall	86°

1405 shut SV 100 bring compressor up To Press

1410 at 100.0 PSI shut test mode

51

Location NASA Date 8 27 2020

Project / Client HMFN

212ig Pb 01364

very cloudy 0 to 5 mph 92°

Robert Siegel

1410 open SV 101

1415 open leg 1 auto on

1420 add leg 5 auto on

L1 at 19.0 PSI 80.0 scfm

1425 add leg 7 auto on

L2 at 19.0 PSI 76.0 scfm

L5 at 33.0 PSI 170.0 scfm

1430 add leg 9 auto on

L1	19.0 PSI	75.0 SCFM
L5	32.0 PSI	160.0 SCFM
L7	35.0 PSI	160.0 SCFM

outlet

outside 6.0 FT L 2.0 FT Hr.

Ved PS 8-28 C

71 ~~F~~ Inside 22 in

16.25 standoff

52

Location NASA Date 8-27-2020

Project / Client HMFN

212ig 01364

92° Some Clouds 0 To Many6

1435 add Leq 10 auto on
C1 19.0 ~~27~~ 79.0
C5 32.0 152.0
C7 34.0 152.0
C9 26.0 145.0

1442 Building Ht Temp 100.0°F
reviews with Jim MPE2
gen testing Shut down system
1445 reviews with Chris Hoch
1450 reviews with Shawn MPE2
1455 review with Chris Hoch
Shawn wants 50% or Less use
on compressor relocate of
Building Temp sensor and
Size of upper Compressor Vent
with Photos
1500 meet Mike NASA
and Chris N TT

Location NASA Date 8-27-2020 53

Project / Client HMFN

212ig 01364

95°F Cloudy 0 To 10 mph

1530 Temps around Compressor lot
all 100.0°F To 99°F
Inlet inside
44 W 36 H

outside Ved 8-28-20 RS (B)
~~45 1/8~~ 45.0 L x 37.25
Stand out 16 1/8

Sound Hood Ved 8-28-20 RS (B) (A) outside
17 1/2 W x ~~16 3/16~~ 16 3/16 36 1/8 H
Stand out 16 3/16
16 1/8 W x 22 3/16 H

1645 TT
1745 Break

Rita in the Rain

Location NASA Date 8·28·2020

Project / Client HMFN

212 ig PL 01364

very Cloudy

Robert Siegel Alex

7 30 onsite system off

°F AC running Temp check

63° ① Panel Door

74° PS ups ✓

69°F ② PLC ✓

73° PS ✓

68°F ③ Keypad in ✓

66° KP out ✓

A 68.5° valve wall B 66.5 valve 5/6 center ✓

70° ④ Top left Compressor vent ✓

65° East wall ✓

66° SE wall = TRW set 64° ✓

66° SW wall ✓

68° W wall ✓

65.5° NW W ✓

65.5° NE wall ✓

66° Temp Remote E set 64° = SEW ✓

66° TRW = SWW set 64 = SWW ✓

62° Panel to Compressor Elt Conduit ✓

62.5° Roof above Panel ✓

Location NASA Date 8 28 2020

Project / Client HMFN

212 ig PL 01364

Data Page

77°.

Temp Sensor overpanel in stand

°F outside Trailer

✓ 77° vent A

✓ 81.5° vent B

✓ 69.5° vent C

✓ 77° (NW) wall North E

✓ 76° (SW) S

✓ 78° (EW) E

✓ 76° (WW) wall West

✓ 83° Asphalt by Door

✓ 80.7° Ball Hitch

✓ 90° TX

✓ 70° Inside Duct

B 15 Turn off power to Low volt

PLC / PS ups / PS / KB ½ / AC units

Size vents

Alex onsite gen update

review Alarm Hist of

230-255 Hi temp Logic set

Rite in the Rain

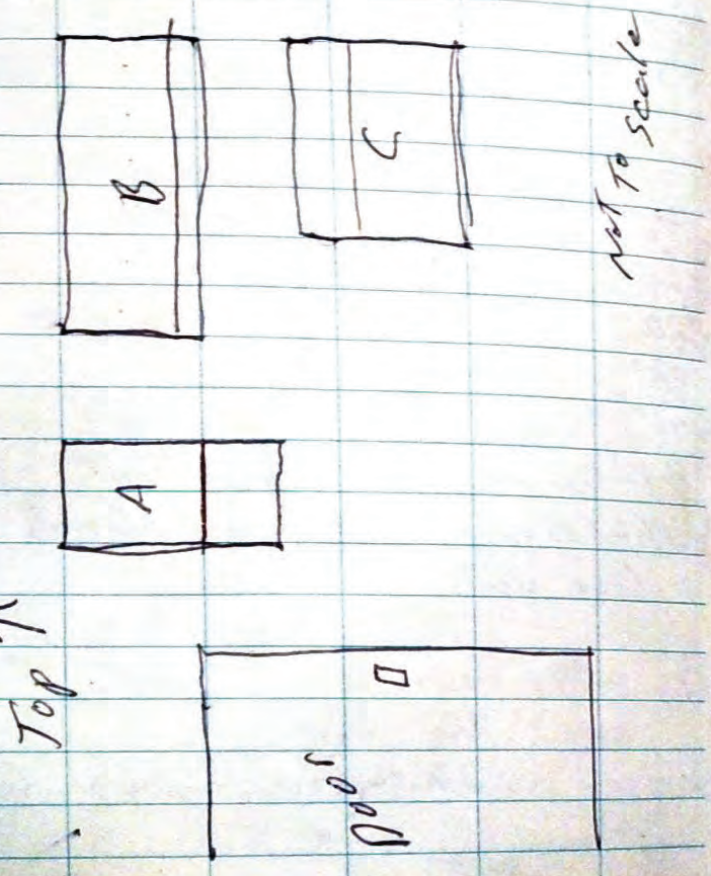
56

Location NASA Date

Project / Client HMFN TetraTech

212ig 03 01

Robert Siegel



Date 8-28-2020 57

Project / Client HMFN TetraTech

212ig 03 01

Data Page

H=Height W=Width So=Standout F=Frame

Inches

(A) Vent outside
- H 36 In or 3 FT Inside / 37 1/4 outside w/ Top Flange
- W 17 Inside 19 outside w/ Flange Sides
- So 16 1/4
- Frame H 13 1/2

(B) Vent outside
- H 37 1/4 Inside 38 outside w/ Top Flange
- W 45 IN Inside 47 outside w/ Flange Sides
- So 16 IN
- Frame H 7 1/2 IN

(C) Vent outside
- H 24 1/8 2FT Inside 25 IN outside w/ Flange on Top
- W 71 1/4 IN Inside 73 1/4 outside w/ Flange Sides
- So 16 IN
- F_H 20 1/2 IN

Location NASH Date

Project / Client HMFN

212ig Pb 0136

Cloudy 60's Sp6 90°

Robert Siegel Alex M

1015 restart system Leg 4 Hanley gen review

1025 add Zone 2 Hand on

1030 add Zone 6 remove Z 2

L 4 120 SCFM 31 PSI

C5 180 SCFM 33 PSI

1100 reviews with Alex Alex on Netas Lan

1200 Lab call for 2nd pickup of samples Ryan on site gen update Temp Checks

1245 Turn on Leg 6

Location NASH Date 8-28-2020

Project / Client HMFN

212ig · Pb 0136

730 Readings

11/10

Data Page

82°	Condist compressor to Panel		83°
81°	Temp Probe	Panel 75.5°	80°
✓89°	PS ups	740	90°
✓87°	PS	730	91°
✓81°	PLC	690	90°
✓90°	Key Pad in	68°	95°
✓87°	Key Pad out	66°	91°
✓115°	Tx	90°	120°
✓83.5	Remote East	66.0°	85.0
✓84.5	Remote West	66°	89°
83.5	W N W	65.5	90°
	W S		
78°	W E	68.0	82°
94.5°	W S A ~~Valves~~ upper	68.5	
91°	W B Valves	68.5	90°
85°	W W	68°	91° 100
82°	W NE	65.5	85°
86°	Duct East side	70.0	95°
105°	Compressor South side Top left		70°
78°	Roof Panel above Control PLC Duct	62.5	80

1345 reading

Rain in the Rain

Location NASA Date 8-28-2020

Project / Client HNFN

212ig Pb 0136 Alex M

Cloudy 0 to 5 mph 95°

Robert Siegel

		Reading
730		1345
96°	North outside wall ES	98°
98°	Duct A out	103
106°	Duct B In	113
103°	Duct C out	106
120°	Ball Hitch	115
103°	East Wall	99
103°	South Wall	106
93°	West Wall	96.0
99°	Asphalt at Door	102
1400	Compressor at 40%	
	176°F 36°	
	Pump Chiller	
1540	reset system Zone 4-5	

Location NASA Date 8-28-2020

Project / Client HNFN

212ig Pb 0136

Cloudy 0 to 10 mph 95°

Robert Siegel Alex M

1610 Start well readings

1627 System On Tx

Compressor 95 PSI

35/40% 169°F 36°F

TT 101	99°F	Pump
FT 101	160 SCFM	
PT 101	95 PSI	Tank
PT 102	73 PSI	Line
PT 103	72 PSI	Line
TT 102	95°F	
FT 102	160 SCFM	
RHT 101	68%	
TT 301	80°F	Room

	Panel Gauge	Panel
24	31 - 30	110 SCFM
25	33 - 33	170 SCFM
	PSI PSI	
1630	update Chris N	1645 offsite TT

Rate on the Rain

Location NASA Date 8 24 2020

Project / Client HMFN

212ig · PB · 01364

Cloudy 0-5 mph 80°

Robert Steger

615 TT

715 onsite system running open trailer

720 Heavy Rains start gen readings

C1	C2	C3
478.5	477.5	476.0

2037 KWH control Panel

~~207~~ PS 274 KWH outside Panel

800 No Rain

Compressor Panel 95 PSI

50% Use 185°F | 38°F

Pump | chiller

Filter water low

Pressure reset To 32 per leg

Very Hi use 100% back off To 80% Check well Field

Location NASA Date 8 24 2020

Project / Client HMFN

212ig · PB · 01366

Robert Steger Data Page

SV 101 / 69.3 hrs ASL 101 / 75.1 hrs

TT 101 FT. 101

Pump 110.0°F ✓ 344.0 SCFM

PT 101

Tank 95.0 PSI ✓

PT · 102

Cmc 71.0 PSI

PT · 103

After Filters 67.0 PSI

TT 102 - 100.6 °F.

FT 102 · 341.0 SCFM

RHT · 101 · 68.0 %

TT · 301 77.3 °F

ASL	7:25	His	PSI	Flow
1	on	43.1	0	0
2	on	34.6	4	1
3	on	32.0	27 ✓	106 ✓ 3
4	on	34.3	0	1
5	off	37.0	26 ✓	123 ✓
6	off	34.5	24 ✓	158 ✓
7	off	36.8	23 ✓	130 ✓
8	on	36.8	0	0
9	off	37.0	18	124
10	off	36.1	0	0

Rite in the Rain

Location NASA Date 8-24-2020

Project / Client HMFN

212ig · PL · 01364

very Cloudy 0-5-ph 80°F

Robert Siegel

810 Panel Clock - H O A switches Cockpit

PID Mini Rae 3000

S/N 592-913718

815 0.0 = 0.0

100.0 = 105.0 ppm

Isobutylene

Exp 1-8-21 LOT 18-6614

100.0 = 100.0 ppm

Isobutylene

Exp 6-13-22

LOT 6BI-248-100-4

Check Zones

Check Yellow = 0.0 PID

Check Brown = 0.0 PID

845 reset Zone #6 yellow

900 Yellow zone set at 2.0 SCFM per ~~Log~~ NS well

905 reset Green #9 Zone Reg

Location NASA Date 8 24 2020

Project / Client HMFN

212ig PL · 01364

Very Cloudy 0-10 mph 80°

Robert Siegel

915 reset Green #9 zone Flags

925 End Green #9 reset Orange #7

945 End Orange #7 start Blue #3

1005 End Blue #3 start Black #5

1020 End Blue #3 review panel Lock up with Dan F check call to MAE Jim Frydl 434-531-3472

Panel outside door 100°F

Power Supply 115°F

PLC 115°F

PMI 120°F Littelfuse

KeyPad 110°F inside / 105°F outside

Rite in the Rain

Location NASA Date 8 24 20

Project / Client HMFN

212ig · Pb · 01364

Some Clouds 0 To 10 mph 85°

Robert Siegel

10 50 Call Jim at MAE
843 · 836 · 1804

10 55 update Dan F no answer
from Jim / forwarded

11 10 call
Shawn Evans MAE2
843 296 4580
843 836 1804

11 15 relocate for Fan ~~pickup~~ POC

11 30 install standing Fan
System Down gen checks
reset power good restart
Keypad Now working

Panel Door 89° F
Power Supply 96° F
PLC 93.5° F

Location NASA Date 8 · 24 · 2020

Project / Client HMFN

212ig · Pb · 01364

Some Clouds 0 To 10 mph 90°

Robert Siegel

Keypad Inside 87° F outside 95°

11 50 system checks good all
Clocks

11 55 Review with Chris Heck

1220 review with Shawn at
MAE2 requested Fan check for
control panel

1240 review with Jim MAE rep

1200 onsite system down
1200 / Relative Humidity

Inside Key board	72° F
PS	77.0 F
PLC	72.5 F
outside Key board	74.0 F

Rite in the Rain

Location NASA Date 8.24.2020

Project / Client HMFN

212ig.06.01364

Clear 0 To 5 mph 95°

Robert Siegel

1300 review with Shawn of MAE2 no Fan. He will make a decision To install Fan

1315 set Flow Line Green #2 and Zone 1st Fan

1330 reviews with Dan F and Chris Hook

1340 Start Zone 24 and 24

1400 start Light Blue reset To 32.0 PSI 2.0 SCFM

1420 End 24 Light Blue

1430 start Zone 7+8

1450 End Zone 7+8 start Zone 3, 9 and 10

Location NASA Date 8 24 2020 29

Project / Client HMFN

212ig.06.01364

Clear 0 To 15 mph 95°

Robert Siegel

1500 End Zone 3 9 and 10 review with Shawn full shut down

1515 restart cycle contol not working in Auto for Zones 1 To 10

1520 review with Dan and Shawn unable To set To Auto

1540 Review with Chris Hook ahead overnight Shutdown with AC

1550 review with Chris H.

1600 Lock systems

1615 offsite TT 1715 End

Rite in the Rain

Location NASA Date 8 25 2020

Project / Client HMFN

212 lg · Pb 01364

very Cloudy 5 to 15 mph 80°

Robert Siegel

6 @ TT

700 onsite system off AC on

Panel Door	61.5 °F
East wall in	68 °F
North wall in	66 °F
South wall in	62.5 ~~RS~~ °F
Keypad in	~~62.0~~ 56 °F
Keypad out	62.0 °F
PLC	57.0 °F
MS	66.0 °F
PS	57.0 °F
outside asphalt	81 °F

715 restart cycle Timer bad

set 1+2 open/Hand 7 auto ok on

4 auto off bad on 5 auto good

6 auto on good 8 auto off bad

9 auto off good 10 auto off bad

1 auto off bad 2 auto on Pass

Location NASA Date 8 25 2020 31

Project / Client HMFN

212 lg Pb 01364

very Cloudy 5 To 15 mph 80°

Robert Siegel

730 system on set 1 and 2 To Hand on set 3 Faulting in auto should be off but is on

PLC at 73°

Keyboard inside at 70°

PS 72°

735 Take Sparge Readings

805 Zone 3 auto off ok

Zone 4 auto ~~off~~ on ~~ok~~ Fail on

Zone 5 auto ~~on~~ off ~~ok~~ Fail off

Zone 6 auto off ok Fail on

Zone 7 auto ~~off~~ on ok Fail on

Zone 8 auto ~~off~~ off ok Fail on

Zone 9 auto ~~on~~ off ok Fail off

Zone 10 auto ~~on~~ off ~~Fail~~ ok on

5 in Auto on but off for offsite Testing start Now To start Clocks

4 in Auto off but on for offsite Testing

Return on Run

32

Location NASA Date 8-25-2020

Project / Client HMFN

212ig-PL-01364

Cloudy 5 to 15 / 85°

Robert Siegel

850 Temp checks Zones 1, 2, and 4 on

PLC	80°
PS	78°
Keyboard in	72°
Keyboard out	84°
Panel Door	75°
N wall	80°
S wall	79°
E wall	83°

	Panel PSI	Gauge PSI	Panel sCFM	Gauge sCFM
Zone 1	20.0 /	20.0	80.0 /	77.0
Zone 2	23.0 /	22.0	155.0 /	155.0
Zone 4	32.0 /	32.0	152.0 /	155.0

	Control Panel	Gauge	Amp / Chill	
Tank	94.5°F	95.0°F	169 / 36°F	35%

Panel 186 sCFM 189 sCFM Gauge 190 Panel 190 V

Tank 95 PSI Panel 95 PSI Gauge

Location NASA Date 8-25-2020

Project / Client HMFN

212ig-PL-01364

Cloudy 0-10 mph 85°

Robert Siegel

900 review with Chris Hook

check gen Zone startups 1, 2 and 5

for now no contact with MAE

called Shawn and Jim no call backs

set to run 1, 2 and 5

920 start Zone 5 Readings set

Zone 1	20.0	80.0	20.0 / 80.0
Zone 2	23.0	155.0	23.0 / 155.0
Zone 5	32.0	170.0	32.0 / 167.0
	PSI Panel	sCFM	PSI sCFM at Gauges

Compressor at 35% 170°F

Mini Rac 3000 SN 592-916169

945 Cal check 0=0 rpm

100=100.0 ppm

950 Pid Zones 1, 2 and 5

Zone 1	Hi of	0.0
Zone 2	Hi of	0.0
Zone 5	Hi of	0.0

Rite in the Rain

Location NASA Date 8-25-2020

Project / Client HMFN

212.g Pb 01364

0-5 mph Cloudy 85°

Robert Siegel

955	review	with	MAE Jim
1000	Zone	4	0.0 ppm
1005	Zone	2	0.0 ppm
1010	Zone	5	0.0 ppm

1015 start well reading 1 & 2 check 5

1030 review gen with Dan F
start notes in Book 2 Page 116 and 117

1515 Send Panel Temp check Photos
To Chris H, Dan F, Dave L
as well as Jim and Shawn at MAE
Request overnight setting from
Chris Hook

1535 review with Nash auto valve
Test

Location NASA Date 8-25-2020

Project / Client HMFN

212.g Pb 01364

5 To 10 mph 90° Cloudy

Robert Siegel

1425 Temp Check with Photos
for MAE

Panel Door	
Key Pad inside	71°F
Key Pad outside	
PLC	78°F
PS	80°F
MS	82°F
Top of Trans	135°F

1540 Legs on 1, 5, 7, 9, and 10
all others auto / off
Compressor at 55% use
Zone 5 all about 2.0 SCFM 20-25 PSI
Zone 1 all about 1.75 to 2.0 SCFM 10-15 PSI
Zone 10 at most at 0 SCFM 10-30 PSI
212 at 2.0 scFM 20.0 PSI

Rite in the Rain

Location NASA Date 8·25·2020

Project / Client HMFN

212ig · Pb · 01364

Some Clouds 0 To 5 mph 85°

Robert Siegel

		C1	C2	
1045		20.0	23.0	PSI
		78.0	155.0	SCFM

1050 All wells seem To work To Cycle Clock set 4 and 5 To Hand (On) all others To off

1055 call To Jim MAE review Gary update requested Panel

1100 call To Chris Hook he requested To Keep in Hand controls run zones for 2 To 4 hrs each

1115 Return supplies

Location NASA Date 8-26-2020

Project / Client HMFN

212ig Pb 01364

Some Clouds 0 To 10 mph 85°

Robert Siegel

		PSI	SCFM
1345	Zone 4	32.0	117.4
	Zone 5	32.0	184.0

Compressor at 35%

Inside Key Pad 72°

outside Key Pad 81°

PLC ——— 78°

PS ——— 81°

MS ——— 82°

Panel Door ——— 75°

START well Readings

1405 Foward Data Chris Fl and Dan Fl review gen Shown at MAE requested Photos of Hi Temp Zones

1415 Photos of Panel and Trans with Temps

Rite in the Rain

Location NASA Date 8 25 2020

Project / Client HMFN

212-g-86-01364

Cloudy 0-10 mph 90°

Robert Siegel

Zone 7 at 1.5 to 2.0 SCFM
20-22 PSI
Zone 9 at 1.5 to 2.0 SCFM
20-22 PSI

1550

Zone 1	Zone 5	Zone 7	Zone 9	Zone 10
19.0	31.0	33.0	26.0	32.0
92.0	163.0	138.0	125.0	135.0

1600 Legs on 1, 2, 3, 4, 6, 8
Rest are off Compressor at 50% use

1610 onsite review with Chris R

1625 Zone 7 at mostly 2.0 SCFM
10-15 PSI
Zone 2-18 To 29 Block
1.75 SCFM 19-20 PSI

Location NASA Date 8-25-2020

Project / Client HMFN

212-g-86-01364

Cloudy 5 to 15 mph 90°

1635 review with Jim MAE2

Zone 4-8 To 11 Block 2.0 SCFM
22 to 24 PSI
68 and 46 To 69/0 SCFM 20 PSI
Zone 2/28 To 19 Block 1.75-2.0 SCFM
16 To 20 PSI
Zone 8 mostly at 1.75 SCFM
22 To 30 PSI
Zone 6 well 200 at 0.5 SCFM
22 PSI as well 107 at 1.0 SCFM 24 PSI
well 79 ~~86~~ 70, 78, 208, 207, 203
204 205 102 at 0 SCFM
20 To 24 PSI
well 153, 130 116 95 88 207
201 at 0.5 To 1.0 SCFM
Rest at 1.5 To 2.0 SCFM
Zone 3 all at 0.5 To 1.0 SCFM
12 To 20 PSI

Rite in the Rain

Location NASA Date 8 25 2020

Project / Client HMEN

212ig 8h 01

Cloudy 5 to 10 mph 90°.
Robert Siegel

1650	Panel	Data				
	C1	C2	C3	C4	C6	
PSI	20.0	23.0	25.0	32.0	36.0	
SCFM	78.0	143.0	110.0	110.0	123.0	

C8 33 PSI 147 SCFM
Compressor at 55% use

1655 review with Chris Hash
update Text/Photos

1710 offsite TT

1815 Break

Location NASA Date 8 26 2020

Project / Client HMEN

212ig 8h 01364

0 To 5 mph 80° Some Clouds
Robert Siegel

600 TT
700 onsite system running

Zone	Panel PSI	SCFM	Gauge PSI
✓ 3	25.0	125.0	26.0
5	31.0	155.0	32.0
6	36.0	120.0	36.0
7	32.0	133.0	32.0
9	24.0	130.0	32.0

4AM To 8AM Zones Ok

Tank 95 PSI
Pump 118°F / 4000 SCFM
60% use 190°F Pump 45°F Chiller
Keypad Inside 76°F
Keypad outside 88°F
PLC 85°F
PS UPS 88°F
PS 88°F
CAS 82°F
Door 80°F
TX 143°F

Rita in the Rain

Location NASA Date 8 26 2020

Project / Client HMFN

212ig Pb 01364

80°F Clear 0 To 5 mph

Robert Stegel

715 Cal Check Mid Range 3000

S92-916169

717 0=0 ppm

718 100=100.0 ppm

720 Start well Reading Active Zones with PID

800 End well Reading Zone 3 and 7 completed Zone 9 2/3 before Valve switch

810 cycle check

Zones On 2, 4, 6, 7, 8 pass

Location NASA Date 8-26-2020

Project / Client HMFN

212ig Pb 01364

85° Some Clouds 0-5 mph

Robert Stegel

HMFN.UMP 1 - Field 2020 08 26

830 set Field Sum -29.0

JS068 Start 0 in Flow

Reg # 06680

HMFN.UMP 2 - Plot 2020 08 26

840 set start Plot Sum -29.0

JS-070

845 Compressor at 55-60%

187°F pump 37°F chiller

850 START well Readings

review with Dan F and Chris H during readings

1010 End Reading review upload note-Terms

1045 Start well Readings

1135 End well Readings start System Readings

Rite in the Rain

42

Location NASA Date 8 26 2020

Project / Client HMFN

212 ig Pt 01364

Cloudy 0 to 10 mph 90°

Robert Siegel

1135 System Data

TT 101	FT 101	PT 101 Tank	Use
118°F	440.0 SCFM	95.0 PSI	60%
192°F	44°F		
Pump	Chiller		

Zones	L2	L4	L6	L7	L8
Panel PSI	22.0	31.0	32.0	34.0	31.0
SCFM	135.0	100.0	165.0	150.0	150.0
Gauge PSI	22.0	30.0	33.0	34.0	32.0

1145 Break

1315 zone check Pass

	Leg 1	Leg 5	Leg 7	Leg 9	Leg 10
PSI Panel	19.0	32.0	34.0	25.0	31.0
SCFM	70.0	150.0	155.0	140.0	134.0
PSI Gauge	19.0	32.0	34.0	33.0	30.0
Pump 95 PSI	194°F	Chiller 46°F			55% use

Location NASA Date 8 26 2020

Project / Client HMFN

212 ig Pt-01364

0-10 mph Cloudy 95°

Robert Siegel

1330 start well readings

1435 End well readings start

System Run 455 SCFM

70% use 199°F Pump 51°F chiller

Keypad In 80°F

PS UPS 90°F

PLC 88°F

PS 90°F

Tx 138°F

Keypad out 93°F

Panel Door 85°F

Call in for Lab pickups

Start well readings

review with Shawn M&E

15 40 End well readings

Rita on the River

64

Location NASA Date 8 31 2020

Project / Client HMFN

212-g Rb 0136

Some Clouds 0-5 mph 85°

Robert Siegel

1055 review with Chris Hood
Temps - Flow closed
system Ran ~~to~~ Till 1230 - 73 CO
at 34 PSI Zone 4 and 32 PSI
Zone 5

1115 Break

1300 onsite wx Readings and Compressor

1315 Install 70°F to 190°F
Thermometer at each Air
Duct

1320 review with Chris Hood
requested switch of Zones
Same pressure

1325 reset Zones To 6 & 7 set dial
2.0 SCFM 4.0
40% 95 PSI 173°F 36°F

Location NASA Date 8 31 2020

Project / Client HMFN

212 lg 82 0136

Some Clouds 0 To 5 mph 90°
Robert Siegel

1410 Start well Readings and Flow
Reset Heavy Rain Starts

1415 End Well Readings check
System 91.0 PSI 415.0 scfm
66% RHT 101 / 73.0° TT 301
Zone 6 / 31.0 PSI 283.0 SCFM
32.0 PSI Gauge
Zone 7 / 32.0 PSI 250.0 scfm
32.0 PSI Gauge
95.0 PST 179°F 36°F
60% VSE
Air Temp mounted Gauge

1450 D AM 80° F
D BM 107.0° F
D CM 135.0° F

1510 Review with Dion F Rain stops

1530 Start well readings

1545 review with Chris H ~~after~~ pcs

Rain on the Rain

66

Location NASA Date 8 31 2020

Project / Client H/MFN

212 ig Pb 0136

Cloudy light Rain 75° Ownd

Robert Siegel

1545 Chris H obd zone 6 + 7 weights

1600 End well Readings Start System readings with Temps

1610 End readings gen clean up

1615 offsite TT

1715 Break

Location NASA Date 9·1·2020

Project / Client HMFN

212 ig Pb 0136

Cloudy O wind 75°

Robert Siegel

545 TT

645 onsite

air Compressor Gen warming

H1 Line Temp on graft

96 PSI 127°F 35°F

700 opened SV 101

Compressor winding To speed

705 close SV 101 replace Panel

remove Air Filter

715 restart Hand on

725 Alarm reset Compressor

95.0 PSI 65-70% use 190.0°F 42.0°F

Control Panel

113.0°F 485.0 SCFM 95.0 PSI 69%

TT 101 FT 101 PT 101 RHT 101

Rita in the Rain

Location NASA Date 9-1-2020

Project / Client HMFN

212.ig 82 0136

Clear 0-5 mph 80°

Robert Siegel

727 SV 101 auto on set

SV 206 Hand on

32.0 PSI 304.0 scfm 34.0 PSI gauge

SV 207 Hand on

32.0 PSI 285.0 scfm 33.0 PSI gauge

810 Start well readings

Review with Chris N

840 End well readings start system checks

900 Review with Alex

compressor display 65% use 95 PSI 200°F 57°F

control panel display

127.5°F 460 scfm 95 PSI

Room 85° RHT 79%

mini rae 3000 / SN 592 916169

0.0 = 0 ppm

100.0 = 100.0 ppm

Project / Client HMFN

212.ig 82 0136

Clear 0 To 5 mph 85°

Robert Siegel

920 review with Dan F

recommend switch To One Zone

To lower Compressor use/load from

the now 60.65%

930 Turn Zone 7 ~~8~~ PS off ~~7~~ PS 6 is on

940 TT 101 - 105.5°F / FT 101 - 220.0 scfm

PT 101 - 94.0 PSI PT 102 - 72.0 PSI

RHT 101 - 70% TT 301 - 82.0F

compressor Display

35-40% use 95.0 PSI 171.0°F 36°F

SV 206 32.0 PSI 300.0 scfm

32.0 PSI gauge

1015 SV 206 / 32.0 PSI 300.0 SCFM

32.0 PSI Gauge 104.7 hrs

99.2°F TT 101 FT 101 - 225.0 SCFM

PT 101 - 95.0 PSI PT 102 - 72.0 PSI

67% RHT 101 TT 301 - 79.0F Room

Rob in the Room

Location NASA Date 9.1.2020

Project / Client HMFN

212ig 06 0136

Clear 0 to 5 mph 90°

Robert Siegel

10 15 Compressor 40.0% use
95.0 PSI 171.0°F 36.0°F

10 20 Temp Checks
92.0°F KBI
103.0°F AD
114.0°F BH
88.0°F DAM
109.0°F DBM
120.0°F DCM

Temp. Form for Key

10 25 review with Chris Hook about requested Hood C outside be removed

10 35 Shut down Air Flow

10 45 Call To Chris N about Vent Removal

Location NASA Date 9.1.2020

Project / Client HMFN

212ig 06 0136

some Clouds 0 To 10 mph 90°

Robert Siegel Chris N Kyle H

11 45 vent removal Zone 7 on Hood
Zone 6 Hood on

11 50 Compressor 60-65% use
95.0 PSI 182.0°F 37.0°F

TT.101. 92.0°F FT.101.465.0 scfm
PT.101.95.0 PSI PT.102. 70.0 PSI
RTH.101. 68% TT.301. 76.0°F

SV.206. 32.0 PSI 300.0 SCFM
34.0 PSI Gauge
SV.207. 33.0 PSI 275.0 scfm
34.0 PSI Gauge
DAM 90.0°F
DBM 85.0°F
DCM 120.0°F

Rain in the Rain

Location NASA Date 8·1·2020

Project / Client HMFN

212·g Pb 0136

Cloudy 0 to 5 mph 90°

Robert Siegel

1230 Control Panel

TT 101 · 93.0 °F FT 101 · 450.0 scfm

PT · 101 · 94.0 PT 102 70.0 PSI

RHT 68% TT 301 77.0°F

SV 206 on Hand 33.0 PSI 300.0 scfm

34.0 PSI Gauge

SV 207 on Hand 33.0 PSI 2600 scfm

33.0 PSI on gauge

60% use or 65.0% use 95.0 PSI

182.0 F 37.0°F

1240 review with Chris H requested 500.0 scfm Total or more start with flow rate adjust to 4.25 scfm

1250 start well heads reset To 4.25 To 4.5

1300 End well sets start system check

Location NASA Date 9·1·2020

Project / Client HMFN

212·g Pb 0136

Some Clouds 0 To 5 mph 95°

Robert Siegel

Compressor at 60-65% use 95.0 PSI

182.0°F 37.0°F

1330 RB

1500 Turn zone 4 on Hand Low Flow wells only

TT 101 · 95°F FT · 101 · 475.0 scfm

PT 102 · 69.0 PSI PT 100 · 94.0 PSI

FT 102 · 495.0 scfm RHT 101 68%

TT 301 · 77.5°F Room

Compressor at 65-70% 95.0 PSI

184°F 37.0°F

1450 System check

FT 101 · 95.0 F FT 100 · 475.0 scfm

PT 101 95.0 PSI PT 102 · 70.0 PSI

FT 102 · 495.0 scfm RHT 101 · 68%

TT 301 · 78.0°F Room

SV 204 · 36.0 PSI 53.0 scfm

36.0 PSI

Rite in the Rain

74

Location NASA Date 9.1.2020

Project / Client HMFN

212ig Pb 0136

Some Clouds 0 to Sight 95°

Robert Siegel Chris N Kyle H

1450 System Check

SV 206 • 32.0 PSI 300.0 scfm

33.0 PSI Gauge

SV 207 • 32.0 PSI 270.0 scfm

32.0 PSI Gauge

Compressor 65-70% use 95.0 PSI

184.0°F 37.0°F 4950 scfm

DBT 90.0°F

1530 review with Dan F and

Chris N

Plastic cover Flap on Eff Air

1645 offsite TT

1745 Break

75

Location NASA Date 9.2.2020

Project / Client HMFN

212ig Pb 0136

Some Clouds 0 wind 75°F

Robert Siegel

600 TT

700 onsite running temp check

with system photos

Compressor 95 PSI 65-70%

1810°F 36.0°F

TT 101 825 FT 101 • 5000

PT 101 94.0 PSI FT 102 69.0 PSI

FT 102 • 5200 RHT 65%

SV 4 57.0 SCFM 36.0 PSI Gauge

SV 6 305.0 SCFM 33.0 PSI Gauge

SV 7 280.0 SCFM 32.0 PSI Gauge

Control Panel Display shows

Application EA.HTTP exe.

encountered a serious error and must shut down

SV 204 • 36.0 PSI corrected with 6 SCFM

SV 206 31.0 PSI 304.0 SCFM

SV 207 22.0 PSI 280.0 SCFM

815 Start well readings

Rite in the Rain

Location NASA Date 8 31 2020

Project / Client HMFN

212 ig pb 01364

Some Clouds 0 wind 75°

Robert Siegel

6 15 TT

715 onsite system on

prep form

Temp Check Photo Display

Ramp 85.0°F 170.0 SCFM 65% RH Tot

ASC 101 auto	SU101 auto
225.5 hr	218.8 hr
Leg Zone 4 Hand On	Leg Zone 5 Hand On
153.6 hrs	180.0 hrs
300 116.0.	32.0 153.0
PSI SCFM	PSI SCFM
Rig Gauge 31.0 PSI	34.0 PSI

95.0 PSI 169°F 35°F

Est 35%

8 00 Start well head checks

8 15 End flow Press

Location NASA Date 8-31-2020 63

Project / Client HMFN

212 ig PB 01364

Some Clouds 0 wind 75°

Robert Siegel

8 20 PID Cal Check

Mini Rae 3000

S# 592-916169

0.0 = 0.0

8 25 100.0 ppm = 105.0 ppm

PID Sparge and work zones

all 0.0 ppm

8 45 update Temp Form

9 10 send to Chris H and Dust

9 35 Review with Chris Hook

request Pressure raise to Zone 4

34.0 PSI not Past 35.0 PSI set

active wells upper right to 2.0 SCFM

gen Note Review

10 00 data review

Rite in the Rain

Location NASA Date 9-2-2020

Project / Client HMFN

212ig PL 01364

Clear Owned 80°

Robert Siegel

820 Pad 0=0.0 gpm 100.0 = 100.0 gpm

Wind Rose 300 sft 592.916169

830 P.Lot Start

Reg 06499 / 0.0 on pin

JS-047 -28.0 in Hg

HMFN-VMP2-P.Lot 2020 09 02

835 Field

Reg 06691 / 0.0 on Pin

JS-001 -30.0 in Hg

HMFN-VMP1-Field-2020 09 02

855 End well readings review

with Chris Kloch requested

Zones 4 and 6 be Turned off

and Zone 7 and 8 Turned on

if Flow was not near 500.0 scfm

To add Zone 1

900 reset wells

Location NASA Date 9-2-2020

Project / Client HMFN

212ig PL 01364

Clear Owned 80° F

Robert Siegel Nick

Zone

900 Turn 7, 8, 2 on Hand

3.5 scfm

Turn Zone 4 and 6 off

920 review with Dan F

940 System readings

TT 101 · 86.5° FT 101 390.0 scfm

PT 101 · 94.0 PSI PT 102 69.0 PSI

FT 102 · 400.0 scfm RHT 101 65%

FT 301 73.5 F Room

Compressor

95.0 PSI 60% use

177.0° F 36.0° F

1000 offsite TT

1010 Run 772 618 0845

meet gas review

LOTTI

Rite in the Rain

78

Location NASA Date 9.2.2020

Project / Client HMFN

212 ig Pb 01364

Some Clouds 0 to 5 - pb 90°

Robert Siegel Ken Alex Capco

1020 open back doors review system with Ken no new Faults system/compresser checks good

1055 add Zone 6 up use for Testing

1100 seal/close Doors To Trailer at est 85.0% use

1120 Room at 82.0°F TT 301

1145 Change Ramp up longer 100 nbs now 90 nbs
old New

1245 Gen System Checks with Temps

1255 Stop Test Red shut down

1305 warning Test Yellow run no shutdown

1320 Review with Chris Hook

Location NASA Date 9.2.2020 79

Project / Client HMFN

212 ig Pb 01364

Data Page

Compressor To Control Panel

1X7				
102	Blue	Gen	NO	warning
103	Brown	Gen		warning
104	White	SD	Shut down	NO
105	Green	SD	Alarm	
33	Red	NS	Remote start stop Closed start	
1X6 30	Black	NS	Remote start stop open start	

	C1	C2	C3
Compressor motor	95.0	84.0	86.0 Amp

1055 Panel TT 101.94 FT 101.6 50.0 SCFM
FT 102.6 80.0 SCFM RHT 101.66%

1105
95.0 PSI 85.0%
202.0°F 45.0°F
248.0°F SD 230.0 W
wiped to 238.0°F
105.0°F over amb
60% room use

Rite in the Rain

Location NASA Date 9 2 2020

Project / Client HMFN

212y 06 2ns 01364

Some clouds 5 to 10 mph 85°

Robert Siegel Ron

1330 review with Jim MAE

1340 gen system review with Ron Atlas Copco

1350 review 7804 cover Kush on 4 to run overnight ahead by Hicks

1355 System running Zone 7, 8 and 4 On Hand Turned Zone 1 and 6 off

1400 Break review with Chris Hicks requested bring system up To 90% use by adding Zone 1 and 6

1515 onsite check system

115° DCM

90.0 DAM

90.0 B

Project / Client HMFN

212y PB 01364

	°F	SCFM	PSI		scfm	
	TT	FT	PT	RHT	FT	TT
1530	101	101	101	101	102	301
	90.0	370.0	94.0	67%	380.0	
	101.0	660.0	94.0	68%	680.0	
1540	105.0	650.0	94.0	72%	675	80.0
1600						

ID	PSI	SCFM
SV 204	34.0 PSI	580 SCFM
SV 207	31.0 PSI	285.0 SCFM
SV 208	33.0 PSI	165.0 SCFM

Compressor 95.0 PSI 60.0% use

60.0 % use 177.0°F 36.0°F

1535 add SV 201 and SV 206 on Hand SV 204, 207, 208 same scfm

SV 201 19.0 PSI 75.0 scfm

SV 206 30.0 PSI 270.0 scfm

82

Location NASA Date 9-2-2020

Project / Client HMFN

212 ng Pb 01364

Some Clouds 0-5 mL 900

Robert Siegel

1540 Control Panel
100.0F 660.0-680.0 SCFM
Compressor 90% 95.0 PSI
201°F 45.°F

1545 Start well reading End Soma
1630/1635 Can collections
1645 End well Reading start
System Readings

1700 Compressor at 90% 95.0 PSI
203.0°F 47.0°F

1705 Lock Trailers

1715 offsite YT
1815 Break

Location NASA Date 9-3-2020 83

Project / Client HMFN

212 ng Pb 01364

Some Clouds Overcast 75°

Robert Siegel

600 YT

700 onsite system running
92.0°F 660.0 scfm 94.0 PSI
66.0 PSI RHT 66% TT 301.720°F
Compressor 95.0 PSI 90.0% use
196.0°F 38.0°F mini Rae 3000 592 91 CH4
710 PID 0.0 ppm 100.0 = 100.0 ppm
720 start well readings

805 next Kyle gen
review Field/site conditions

915 update/Email Note + Forms
COCs send to Chris H + Dust F

1115 Call/Text To Chris Hoch
about System run changes

1145 Break 1245 update from Chris H
run Zones 2, 3, 4, 6, 8, and 10 on Hard

Rite in the Rain

Location NASA Date 9-3-2020

Project / Client HMFN

212 ft Pb 01364

Some Clouds 0 To 5 mph 95°

Robert Siegel

1330 onsite gen review

1340 switch Zones 2, 3, 4, 6, 8 and 10 on hand rest set to off

1345 well readings set to 4 or 3 sets at 600.0 SCFM

1415 Break TT

1445 samples pickup by Lab

1450 TT

1500 onsite well readings

1530 End Well readings start System readings

TT 101	110.0°F
FT 101	690.0 SCFM
PT 101	65.0 PSI
TT 102	52.0 PSI
RHT 101	80.0 %
TT 301	87.0 °F Room
FT 102	714.0 SCFM

Project / Client HMFN

212 ft Pb 01364

Some Clouds 0 To 5 mph 93°F

Robert Siegel

Compressor 66.0 PSI 90 or more % use
199.0°F 59.0°F

15:50 End System readings start Trailer Lock down

16 15 FT 101 108.5°F
FT 101 690.0 SCFM
PT 101 63.0 PSI
PT 102 51.0 PSI
PT 103 400 PSI
FT 102 715.0 SCFM
RHT 101 79.0 %
TT 301 87.0°F Room

1630 Review with Hawk check Log Zone 8 off check Zone 6 #5 Pressure coming up on Tank
1750 offsite To TS
1815 Break

Rite in the Rain

86

Location NASA Date 9.4.2020

Project / Client HMFN

212.g Pb 01364

Clear 0-5 mph 80°

Robert Siegel

6 00	TT		
700	onsite system running gen data		830
	TT 101	89°F	91.0°F
	FT 101	575.0 scfm	545.0 scfm
	PT 101	94.0 PSI	94.0 PSI
	PT 102	67.0 PSI	69.0 PSI
	FT 102	600.0 scfm	565.0 scfm
	RHT 101	66%	67.0%
	TT 301	79.2°F	77.2
	Compressor		
	95.0 PSI	80% use	
	169.0°F	37.0°F	
8 30	95.0 PSI	75-80% use	
	186°F	37°F	
7 10	Rid 0=0 ppm 100=100.0 ppm		
7 15	Start well readings		
8 20	End well readings gen system data		
8 30	Foward Data To Chris Hand		
	Done		

Rand Rad 3WV 592 9/16/69

Location NASA Date 9 4 2020 87

Project / Client HMFN

212.g Pb 01364

Clear 0-5 mph 83°

Robert Siegel

945 Switch Zones To 3567 and 9

TT 101 °F 99.5

FT 101 scfm 700.0

PT 101 PSI 82.0

RHT 101 68%

TT 301 °F 80.0

Compressor at 90% 84.0 PSI

200.0°F 45.0°F

11:05	ID	11:50	12 10
106.5	TT 101 °F	115.0	108.5
645.0	FT 101 scfm	640.0	585.0
64.0	PT 101 PSI	61.0	95.0
55.0	PT 102	50.0	67.0
715.0	FT 102	715.0	2605.0 PS
76%	RHT 101	83%	74%
85.0	TT 301	87.0°F	88.0°F

Rite in the Rain

Location NASA Date 9.4.2020

Project / Client HMFN

212 lg Pb 01634

Some Clouds 0 to 5 mph 85°

Robert Siegel Kyle H Chris N

1110 Compressor 100% 70.0 PSI
198.0°F 53.0°F

1115 shut down Vent C install with Kyle

1135 system restarted with Chris N

1155 Vent installed review with Hoch what Turn 6 off

1200 Zone 6 off

1205 Tank at 95.0 PSI
Compressor 95.0 PSI 75-80% use
201°F 49°F

1215 Break 1345 onsite

Location NASA Date 9 4 2020 89

Project / Client HMFN

212 lg Pb 01634

Some Clouds Overcast 90°

Robert Siegel

TT 101 · 108.5°F
FT 101 · 587.0 SCFM
PT 101 · 95.0 PSI
PT 102 · 67.0 PSI
PT 103 · 60.0 PSI
TT 102 · 103.5°F
FT 102 · 605.0 SCFM
RHT-101 72.0%
TT 301 87.5°F Room
Compressor 95.0 PSI 75-80% use
201.0°F 47.0°F

1405 Call in gen review To Hoch
Send Temp check copy
well reading
Send well Reading gen system
review

16 00 offsite TT
17 00 Break

Rita in der Raum

Location NASA Date 9 8 2020

Project / Client HMFN

212.4 Pb 01364

very cloudy Light Rain 80

Robert Stroger

6 30 TT

7 30 onsite system running

Location 1619

DAm 78° F

DBm ~~120~~ 88° F

DCm 130° F

	°F	scfm	PSI	scfm	°F
	TT 101	FT101	PT 101	FT120	TT 301
	88.0	550.0	94.0	565.0	75.0

7 45 Cal Check Miniflae 3000

SF 592.913718

7 50 0 = 0.0 / 100.0 = 100.0 ppm

7 55 start well readings

9 40 review with Dan F Forward

Today's readings To Hook and Dan F

9 45 start Thermo Boarding Compressor outlet

Duct C

Location NASA Date 9 8 2020

Project / Client HMFN

212.4 Pb 01364

7 40	Data	Range
Hand On	PSI	scfm
SV 2	23.0	115.0
SV 4	34.0	60.0
SV 6	31.0	195.0
SV 7	33.0	195.0
SV 8	300	220.0

Compressor 95.0 PSI 75-80% use

189.0°F • 37°F

1300 gen review with Dan complete xTra boarding

1330 End Boardwork Lockup

1345 offsite TT

1445 Break

Rite in the Rain

Location NASA Date 9 9 2020

Project / Client HMFN

212ig Pb 01364

Some Clouds Owind 75°

Robert Siegel

6 00 TT

7 00 onsite system running - gen screen Photos

7 15 Cal. Check mini Rae 3000

Mini Rae 3000 S# 592-913718

0 = 0 ppm 100 = 100.0 ppm

9 20 start well readings

8 20 meet Ronnie Sema cams

Reg 06692 -2.5 at start Vn corrected

JS.070 over -30.0 in Hg on Pin

8 30 Plot start

Reg 06451 at -3.2 in Hg at start

Vn corrected JS.080

over -30.0 in Hg no Pin Est 35-40 in Hg

8 35 Start ~~Robert~~ Field sample

Location NASA Date 9.9.2020 123

Project / Client HMFN

212ig Pb 01364

Some Clouds 0 to 5 mph 80°F

Robert Siegel

8 40 Switch Zones To

SV 201, 205, 207, 209 and 210 only

Hand on

8 45 COC update Data send

9 9 2020 AM well readings to Hank and Dana F

9 40 start well readings

10 45 End well readings review

SOW. TASS system specs

11 15 Break 1130 review with Dana F

11 45 Break

13 15 onsite review with Chuck

13 30 system readings wells

14 15 End Well Readings switch

wells to SV 101 102 103 104

106 and 108 only on Hand

Rest off

Return on Rain

Location NASA Date 9.9.2020

Project / Client HMFM

212'y PL 01264

very Cloudy 0 wind 90°

Robert Siegel

1630 Pilot End -4.0 "Hg disconnected

1635 Field End -4.0 "Hg disconnected

1640 Temp Check

DAM 85°F

DBM 98°F

DCM 150°F

1655 review update with Dan F

1700 offsite FT

1800 Breaks

Location NASA Date 9 10 2020

Project / Client HMFM

212'y PB 01364

78°F 0 wind Some Clouds

Robert Siegel

615 FT

715 onsite system running

DAM	80.0°F
DBM	90.0°F
DCM	140.0°F

Cal Check PID Mini Rae 3000

SN 592-916169

0=0 ppm 100= 100.0 ppm

730 start well Readings

845 End well Reading switch Zones

To SV 205, 207, 208, 209, and 210

Flow To Hi for System to dropping

Pressure at 60.0 PSI

900 Review with Dan F

about 2.5 SCFM per well

Rite in the Rain

Location NASA Date 9-10-2020

Project / Client HAFN

212-9 Pb 01364

Cloudy 0 wind 800

Robert Siegel

9 30 system stable review flows with Dan

10 10 start well readings with 225 scfm set point

11 00 End well readings

105.5°F TT 101 / FT 101 • 595.0 scfm

PT 101 94.0 PSI / FT 102 • 606.0 scfm

RHT 101 71.0% / FT 301 Room 84.5°F

Compressor 95.0 PSI 75-80% use

199°F 44°F

11 10 PID Readings

11 30 End PID Readings review with ~~Heights~~ Dan F

11 45 Break 13 15 onsite gas checks

Location NASA Date 9-10-2020

Project / Client HAFN

212-9 Pb 01364

Data Page

Control Panel

13 30 99.5°F TT 101

595.0 SCFM FT 101

94.0 PSI PT 101

610.0 SCFM TT 102

67.0% RHT 101

80.5°F FT 301 Room

Compressor 95.0 PSI

75-80% use 196°F 38°F

13 75 Check Zone 9.0 Dry Pressure ~~gauge~~ Sensor

13 50 Send Photo update Dan F

DAM 90.0°F

DBM 100.0°F

DCM 140.0°F

1400 shut down 9 for vlad Repairs review vent work Chrome wand to send Photo to Shawn MAE Hook and Dan F

Rite in the Rain

Location NASA Date 9-10-2020

Project / Client HMF N

212.g Pt 01364.

Very Cloudy 5 To 15 mph 85°F

Robert Siegel

1415 set all non active wells off at manifold vent zone 9 for sensor replacement

1430 replace SV209 PSI sensor Start SCFM Loss Tests

1435 Test Start Zone 9 PSI Sensor good

1445 Zone 1 SV201 23.0 PSI 5.0 SCFM
Zone 2 SV202 26.0 PSI 1.0 SCFM
Zone 3 SV203 28.0 PSI 15.0 SCFM
Zone 4 SV204 35.0 PSI 10.0 SCFM
Zone 6 SV206 37.0 PSI 8.0 SCFM

1450 End 1ST Loss Test open well valves on above Zones

1500 Zone 9 SV209 35.0 PSI 3.0 SCFM

1505 open Zone 9 well valves

1510 start well readings

Location NASA Date 9-10-2020

Project / Client HMF N

212.g Pt 01364

very cloudy 5 to 15 mph 85°
Robert Siegel Don Forester

1620 End Readings

1700 SV208 37.0 PSI 6.0 SCFM
Loss Test to remaining Zones with Don F
Zone 5 30/20 SCFM Loss

1715 Sealed Union in Trailer at Sil/Reg at SV205 now 9.0 SCFM

1720 gas restart Lock Trailers with Don F

1745 offsite TT
1845 Break

Rite in the Rain

130

Location NASA Date 9-11-2020

Project / Client HMFN

212ig Pb 01364

very Cloudy 0 to 5 mph 75°

Robert Sregel

6:00 JT

7:00 onsite Chrono gen sow review Vance and Jacobs

7:10 shut down system setup Chrono for fan install

7:40 main Power off hang sign on Trailer

7:45 EIT Chrono offsite relocate Temp probe inside Panel

8:00 Chrono onsite with Generator for saw.

9:25 Fan installed reset power Test run check gen Fitments

131

Location NASA Date 9-11-2020

Project / Client HMFN

21219 Pb 01364

very cloudy 0 wind 80°

9:30 system restart gen checks and Cleanup send photo + notes

10:15 Review with Dan F

10:30 meet Check for Portland cement To Fill same mini geysers

11:30 Fill mini geysers 5 Days

12:45 offsite/14:00 call from Dan F need To Meet Lab for Sewer sample pickup 14:25

14:00 JT

14:15 at Badging

14:30 Lab pickup

14:45 onsite switch Zone 3 note Auto open Zone 5 well valves update Hook with request on how To set Zone 4 wells

Rita in the Rain

132

Location NASA Date 9 11 2020

Project / Client HAFN

212.4 Pb 01364

very cloudy Ownd 080°

Robert Stegel

1500 raise PSI Zone 4 from 34.0 PSI Display 34.0 Gauge photo update Dan F and Hook

1544 review with Dan F ahead with run This weekend

1600 TT

133

Location Date

Project / Client

Rite in the Rain

96

Location NASA Date 9 21 2020

Project / Client HMFN

212 ig PL 01364

Cloudy 35 mph wind 80°

Robert Siegel Dan F

715 onsite gen setup

720 review with Dan F Hi wind limit work at 34 LC

745 TT

8 W onsite gen site Check system review Control panel display shows Zone legs in off but seem to be running Auto Zone 1, 2, 3, 4, 6, 8 valve in Red switch in off 16 W - 2000 Time Zone on

840 Review with Dan F

845 offsite TT

Location NASA Date 9 21 2020

Project / Client HMFN.

212 ig PL 01364

Data Page

DAM	80°	F
DDM	94°	F
DCM	120°	F

Rite in the Rain

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Brown (10)				Manifold #10 135 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 130 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 132 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	

181		3	20		3	20	- readings at ~3 scfm
186		3	20		3	20	
177		3	20		3	20	- adjusted down/up to 3 scfm
190		3	20		3	20	
185		3	20		3	20	PID reading 0.0 ppm
180		3	20		3	20	
193		3	20		3	20	
189		3	20		3	20	walk all areas no air breaches or broken wells
184		3	20		3	20	
191		3	20		3	20	
187		3	20		3	20	
183		3	20		3	20	
188		3	20		3	20	
192		3	20		3	20	
211		3	20		3	20	
210		3	20		3	20	
213		3	20		3	20	
212		3	20		3	20	

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 132 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 134 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		

189		3	20		3	20	walk all areas no air breaches or broken wells
184		3	20		3	20	
191		3	20		3	20	
187		3	20		3	20	
183		3	20		3	20	
188		3	20		3	20	
192		3	20		3	20	
211		3	20		3	20	
210		3	20		3	20	
213		3	20		3	20	
212		3	20		3	20	

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 135 cfm @ 30 psi			varies	hours aday
							NOTES	
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi		
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 135 cfm @ 30 psi			varies	hours aday
							NOTES	
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi		
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		

211		3	20		3	20
210		3	20		3	20
213		3	20		3	20
212		3	20		3	20

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 130 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 131 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings — Jul-21

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 135 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 132 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 135 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	

186		3	20		3	20	
177		3	20		3	20	- adjusted down/up to 3 scfm
190		3	20		3	20	
185		3	20		3	20	PID reading 0.0 ppm
180		3	20		3	20	
193		3	20		3	20	
189		3	20		3	20	walk all areas no air breaches or broken wells
184		3	20		3	20	
191		3	20		3	20	
187		3	20		3	20	
183		3	20		3	20	
188		3	20		3	20	
192		3	20		3	20	
211		3	20		3	20	
210		3	20		3	20	
213		3	20		3	20	
212		3	20		3	20	

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 137 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone				Manifold #10 142 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	

184		3	20		3	20
191		3	20		3	20
187		3	20		3	20
183		3	20		3	20
188		3	20		3	20
192		3	20		3	20
211		3	20		3	20
210		3	20		3	20
213		3	20		3	20
212		3	20		3	20

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 139 cfm @ 30 psi			varies	hours aday
							NOTES	
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi		
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 135 cfm @ 30 psi			varies	hours aday
							NOTES	
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi		
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		

210		3	20		3	20
213		3	20		3	20
212		3	20		3	20

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 136 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone				Manifold #10 140 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
181		3	20		3	20	- readings at ~3 scfm	
186		3	20		3	20		
177		3	20		3	20	- adjusted down/up to 3 scfm	
190		3	20		3	20		
185		3	20		3	20	PID reading 0.0 ppm	
180		3	20		3	20		
193		3	20		3	20		
189		3	20		3	20	walk all areas no air breaches or broken wells	
184		3	20		3	20		
191		3	20		3	20		
187		3	20		3	20		
183		3	20		3	20		
188		3	20		3	20		
192		3	20		3	20		
211		3	20		3	20		
210		3	20		3	20		
213		3	20		3	20		
212		3	20		3	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 147 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 144 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		

179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 140 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 141 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		

142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 141 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 140 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		

108		3	20		3	20	
99		3	20		3	20	
109		3	20		3	20	
120		3	20		3	20	
121		3	20		3	20	
110		3	20		3	20	
142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 140 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 142 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		

172		3	20		3	20	PID reading 0.0 ppm
143		3	20		3	20	
160		3	20		3	20	
165		3	20		3	20	walk all areas no air breaches or broken wells
154		3	20		3	20	
98		3	20		3	20	
108		3	20		3	20	
99		3	20		3	20	
109		3	20		3	20	
120		3	20		3	20	
121		3	20		3	20	
110		3	20		3	20	
142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 141 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings		Jul-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)	Manifold #9 140 cfm @ 34 psi	vaires	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
132		3	20		3	20	- readings at ~3 scfm
75		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
171		3	20		3	20	
172		3	20		3	20	PID reading 0.0 ppm
143		3	20		3	20	
160		3	20		3	20	
165		3	20		3	20	walk all areas no air breaches or broken wells
154		3	20		3	20	
98		3	20		3	20	
108		3	20		3	20	
99		3	20		3	20	
109		3	20		3	20	
120		3	20		3	20	
121		3	20		3	20	
110		3	20		3	20	
142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Aug-21
WELL READINGS							Time of Reading vaires / Zone Run Time hours aday
Zone (color/#): Zone Green (9)				Manifold #9 143 cfm @ 34 psi			
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
132		3	20		3	20	- readings at ~3 scfm
75		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
171		3	20		3	20	
172		3	20		3	20	PID reading 0.0 ppm
143		3	20		3	20	
160		3	20		3	20	
165		3	20		3	20	walk all areas no air breaches or broken wells
154		3	20		3	20	
98		3	20		3	20	
108		3	20		3	20	
99		3	20		3	20	
109		3	20		3	20	
120		3	20		3	20	
121		3	20		3	20	
110		3	20		3	20	
142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	

179		3	20		3	20	

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 142 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 145 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		

173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 140 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 150 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		

110		3	20		3	20	
142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 146 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 142 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		

98		3	20		3	20	
108		3	20		3	20	
99		3	20		3	20	
109		3	20		3	20	
120		3	20		3	20	
121		3	20		3	20	
110		3	20		3	20	
142		3	20		3	20	
131		3	20		3	20	
164		3	20		3	20	
159		3	20		3	20	
178		3	20		3	20	
173		3	20		3	20	
179		3	20		3	20	
174		3	20		3	20	
168		3	20		3	20	
155		3	20		3	20	
178		3	20		3	20	
179		3	20		3	20	

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Green (9)				Manifold #9 143 cfm @ 34 psi			vaires	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
132		3	20		3	20	- readings at ~3 scfm	
75		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
171		3	20		3	20		
172		3	20		3	20	PID reading 0.0 ppm	
143		3	20		3	20		
160		3	20		3	20		
165		3	20		3	20	walk all areas no air breaches or broken wells	
154		3	20		3	20		
98		3	20		3	20		
108		3	20		3	20		
99		3	20		3	20		
109		3	20		3	20		
120		3	20		3	20		
121		3	20		3	20		
110		3	20		3	20		
142		3	20		3	20		
131		3	20		3	20		
164		3	20		3	20		
159		3	20		3	20		
178		3	20		3	20		
173		3	20		3	20		
179		3	20		3	20		
174		3	20		3	20		
168		3	20		3	20		
155		3	20		3	20		
178		3	20		3	20		
179		3	20		3	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 201 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		

125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 202 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 201 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		

134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 202 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 205 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		

163		3	20		3	20	
147		3	20		3	20	
134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 201 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		

146		3	20		3	20
158		3	20		3	20
163		3	20		3	20
147		3	20		3	20
134		3	20		3	20
123		3	20		3	20
125		3	20		3	20
124		3	20		3	20

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 202 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		

122		3	20		3	20	
167		3	20		3	20	
146		3	20		3	20	
158		3	20		3	20	
163		3	20		3	20	
147		3	20		3	20	
134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		

112		3	20		3	20	
111		3	20		3	20	
122		3	20		3	20	
167		3	20		3	20	
146		3	20		3	20	
158		3	20		3	20	
163		3	20		3	20	
147		3	20		3	20	
134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 198 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 205 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		

101		3	20		3	20	
113		3	20		3	20	
112		3	20		3	20	
111		3	20		3	20	
122		3	20		3	20	
167		3	20		3	20	
146		3	20		3	20	
158		3	20		3	20	
163		3	20		3	20	
147		3	20		3	20	
134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Blue (8)				Manifold #8 200 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		

100		3	20		3	20	
102		3	20		3	20	
101		3	20		3	20	
113		3	20		3	20	
112		3	20		3	20	
111		3	20		3	20	
122		3	20		3	20	
167		3	20		3	20	
146		3	20		3	20	
158		3	20		3	20	
163		3	20		3	20	
147		3	20		3	20	
134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Blue (8)				Manifold #8 201 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	
162		3	20		3	20		
169		3	20		3	20		
100		3	20		3	20		
102		3	20		3	20		
101		3	20		3	20		
113		3	20		3	20		
112		3	20		3	20		
111		3	20		3	20		
122		3	20		3	20		
167		3	20		3	20		
146		3	20		3	20		
158		3	20		3	20		
163		3	20		3	20		
147		3	20		3	20		
134		3	20		3	20		
123		3	20		3	20		
125		3	20		3	20		
124		3	20		3	20		

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Blue (8)				Manifold #8 203 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
156		3	20		3	20	- readings at ~3 scfm	
144		3	20		3	20		
170		3	20		3	20	- adjusted down/up to 3 scfm	
161		3	20		3	20		
166		3	20		3	20	PID reading 0.0 ppm	
133		3	20		3	20		
145		3	20		3	20		
157		3	20		3	20	walk all areas no air breaches or broken wells	

162		3	20		3	20	
169		3	20		3	20	
100		3	20		3	20	
102		3	20		3	20	
101		3	20		3	20	
113		3	20		3	20	
112		3	20		3	20	
111		3	20		3	20	
122		3	20		3	20	
167		3	20		3	20	
146		3	20		3	20	
158		3	20		3	20	
163		3	20		3	20	
147		3	20		3	20	
134		3	20		3	20	
123		3	20		3	20	
125		3	20		3	20	
124		3	20		3	20	

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 154 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 152 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		

71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 150 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 152 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		

97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 154 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 151 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		

89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 150 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 150 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		

83		3	20		3	20
72		3	20		3	20
89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 152 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 148 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		

58		3	20		3	20
82		3	20		3	20
83		3	20		3	20
72		3	20		3	20
89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 149 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 150 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		

66		3	20		3	20
59		3	20		3	20
58		3	20		3	20
82		3	20		3	20
83		3	20		3	20
72		3	20		3	20
89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 144 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 146 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		

64		3	20		3	20
65		3	20		3	20
66		3	20		3	20
59		3	20		3	20
58		3	20		3	20
82		3	20		3	20
83		3	20		3	20
72		3	20		3	20
89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 152 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Orange (7)				Manifold #7 150 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		

74		3	20		3	20
73		3	20		3	20
64		3	20		3	20
65		3	20		3	20
66		3	20		3	20
59		3	20		3	20
58		3	20		3	20
82		3	20		3	20
83		3	20		3	20
72		3	20		3	20
89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 151 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	
44		3	20		3	20		
81		3	20		3	20		
74		3	20		3	20		
73		3	20		3	20		
64		3	20		3	20		
65		3	20		3	20		
66		3	20		3	20		
59		3	20		3	20		
58		3	20		3	20		
82		3	20		3	20		
83		3	20		3	20		
72		3	20		3	20		
89		3	20		3	20		
90		3	20		3	20		
97		3	20		3	20		
80		3	20		3	20		
71		3	20		3	20		
75		3	20		3	20		

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Orange (7)				Manifold #7 148 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
67		3	20		3	20	- readings at ~3 scfm	
60		3	20		3	20		
54		3	20		3	20	- adjusted down/up to 3 scfm	
53		3	20		3	20		
49		3	20		3	20	PID reading 0.0 ppm	
48		3	20		3	20		
91		3	20		3	20		
45		3	20		3	20	walk all areas no air breaches or broken wells	

44		3	20		3	20
81		3	20		3	20
74		3	20		3	20
73		3	20		3	20
64		3	20		3	20
65		3	20		3	20
66		3	20		3	20
59		3	20		3	20
58		3	20		3	20
82		3	20		3	20
83		3	20		3	20
72		3	20		3	20
89		3	20		3	20
90		3	20		3	20
97		3	20		3	20
80		3	20		3	20
71		3	20		3	20
75		3	20		3	20

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		

204		3	20		3	20
205		3	20		3	20
182		3	20		3	20
201		3	20		3	20
197		3	20		3	20

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Yellow (6)				Manifold #6 222 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		

208		3	20		3	20
209		3	20		3	20
207		3	20		3	20
203		3	20		3	20
204		3	20		3	20
205		3	20		3	20
182		3	20		3	20
201		3	20		3	20
197		3	20		3	20

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 221 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		

88		3	20		3	20
79		3	20		3	20
70		3	20		3	20
78		3	20		3	20
208		3	20		3	20
209		3	20		3	20
207		3	20		3	20
203		3	20		3	20
204		3	20		3	20
205		3	20		3	20
182		3	20		3	20
201		3	20		3	20
197		3	20		3	20

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 222 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		

95		3	20		3	20
106		3	20		3	20
87		3	20		3	20
96		3	20		3	20
88		3	20		3	20
79		3	20		3	20
70		3	20		3	20
78		3	20		3	20
208		3	20		3	20
209		3	20		3	20
207		3	20		3	20
203		3	20		3	20
204		3	20		3	20
205		3	20		3	20
182		3	20		3	20
201		3	20		3	20
197		3	20		3	20

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 219 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		

152		3	20		3	20	
129		3	20		3	20	walk all areas no air breaches or broken wells
118		3	20		3	20	
107		3	20		3	20	
95		3	20		3	20	
106		3	20		3	20	
87		3	20		3	20	
96		3	20		3	20	
88		3	20		3	20	
79		3	20		3	20	
70		3	20		3	20	
78		3	20		3	20	
208		3	20		3	20	
209		3	20		3	20	
207		3	20		3	20	
203		3	20		3	20	
204		3	20		3	20	
205		3	20		3	20	
182		3	20		3	20	
201		3	20		3	20	
197		3	20		3	20	

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Yellow (6)				Manifold #6 221 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Yellow (6)				Manifold #6 220 cfm @ 30 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		

119		3	20		3	20	- adjusted down/up to 3 scfm
130		3	20		3	20	
141		3	20		3	20	PID reading 0.0 ppm
140		3	20		3	20	
152		3	20		3	20	
129		3	20		3	20	walk all areas no air breaches or broken wells
118		3	20		3	20	
107		3	20		3	20	
95		3	20		3	20	
106		3	20		3	20	
87		3	20		3	20	
96		3	20		3	20	
88		3	20		3	20	
79		3	20		3	20	
70		3	20		3	20	
78		3	20		3	20	
208		3	20		3	20	
209		3	20		3	20	
207		3	20		3	20	
203		3	20		3	20	
204		3	20		3	20	
205		3	20		3	20	
182		3	20		3	20	
201		3	20		3	20	
197		3	20		3	20	

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 218 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings		Nov-21	
WELL READINGS		Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)	Manifold #6 222 cfm @ 30 psi		

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
200		3	20		3	20	- readings at ~3 scfm
153		3	20		3	20	
119		3	20		3	20	- adjusted down/up to 3 scfm
130		3	20		3	20	
141		3	20		3	20	PID reading 0.0 ppm
140		3	20		3	20	
152		3	20		3	20	
129		3	20		3	20	walk all areas no air breaches or broken wells
118		3	20		3	20	
107		3	20		3	20	
95		3	20		3	20	
106		3	20		3	20	
87		3	20		3	20	
96		3	20		3	20	
88		3	20		3	20	
79		3	20		3	20	
70		3	20		3	20	
78		3	20		3	20	
208		3	20		3	20	
209		3	20		3	20	
207		3	20		3	20	
203		3	20		3	20	
204		3	20		3	20	
205		3	20		3	20	
182		3	20		3	20	
201		3	20		3	20	
197		3	20		3	20	

HMFN Airsparge Well Readings		Dec-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Yellow (6)	Manifold #6 221 cfm @ 30 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
200		3	20		3	20	- readings at ~3 scfm
153		3	20		3	20	
119		3	20		3	20	- adjusted down/up to 3 scfm
130		3	20		3	20	
141		3	20		3	20	PID reading 0.0 ppm
140		3	20		3	20	
152		3	20		3	20	
129		3	20		3	20	walk all areas no air breaches or broken wells
118		3	20		3	20	
107		3	20		3	20	
95		3	20		3	20	
106		3	20		3	20	
87		3	20		3	20	
96		3	20		3	20	
88		3	20		3	20	
79		3	20		3	20	
70		3	20		3	20	
78		3	20		3	20	
208		3	20		3	20	
209		3	20		3	20	
207		3	20		3	20	
203		3	20		3	20	
204		3	20		3	20	
205		3	20		3	20	
182		3	20		3	20	
201		3	20		3	20	
197		3	20		3	20	

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 223 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 222 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		

182		3	20		3	20
201		3	20		3	20
197		3	20		3	20

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Yellow (6)				Manifold #6 221 cfm @ 30 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
200		3	20		3	20	- readings at ~3 scfm	
153		3	20		3	20		
119		3	20		3	20	- adjusted down/up to 3 scfm	
130		3	20		3	20		
141		3	20		3	20	PID reading 0.0 ppm	
140		3	20		3	20		
152		3	20		3	20		
129		3	20		3	20	walk all areas no air breaches or broken wells	
118		3	20		3	20		
107		3	20		3	20		
95		3	20		3	20		
106		3	20		3	20		
87		3	20		3	20		
96		3	20		3	20		
88		3	20		3	20		
79		3	20		3	20		
70		3	20		3	20		
78		3	20		3	20		
208		3	20		3	20		
209		3	20		3	20		
207		3	20		3	20		
203		3	20		3	20		
204		3	20		3	20		
205		3	20		3	20		
182		3	20		3	20		
201		3	20		3	20		
197		3	20		3	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 144 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 140 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings	Dec-20	
WELL READINGS	Time of Reading	Zone Run Time

Zone (color/#): Zone Black (5)				Manifold #5 142 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 141 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 144 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	

206		3	20		3	20	- readings at ~3 scfm
202		3	20		3	20	
195		3	20		3	20	- adjusted down/up to 3 scfm
199		3	20		3	20	
196		3	20		3	20	PID reading 0.0 ppm
151		3	20		3	20	
194		3	20		3	20	
149		3	20		3	20	walk all areas no air breaches or broken wells
198		3	20		3	20	
139		3	20		3	20	
150		3	20		3	20	
167		3	20		3	20	
138		3	20		3	20	
125		3	20		3	20	
148		3	20		3	20	
127		3	20		3	20	
136		3	20		3	20	
117		3	20		3	20	
128		3	20		3	20	
115		3	20		3	20	
126		3	20		3	20	
105		3	20		3	20	
116		3	20		3	20	

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 140 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 142 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		

196		3	20		3	20	PID reading 0.0 ppm
151		3	20		3	20	
194		3	20		3	20	
149		3	20		3	20	walk all areas no air breaches or broken wells
198		3	20		3	20	
139		3	20		3	20	
150		3	20		3	20	
167		3	20		3	20	
138		3	20		3	20	
125		3	20		3	20	
148		3	20		3	20	
127		3	20		3	20	
136		3	20		3	20	
117		3	20		3	20	
128		3	20		3	20	
115		3	20		3	20	
126		3	20		3	20	
105		3	20		3	20	
116		3	20		3	20	

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Black (5)				Manifold #5 139 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Black (5)				Manifold #5 143 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	

198		3	20		3	20
139		3	20		3	20
150		3	20		3	20
167		3	20		3	20
138		3	20		3	20
125		3	20		3	20
148		3	20		3	20
127		3	20		3	20
136		3	20		3	20
117		3	20		3	20
128		3	20		3	20
115		3	20		3	20
126		3	20		3	20
105		3	20		3	20
116		3	20		3	20

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 141 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 140 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		

138		3	20		3	20
125		3	20		3	20
148		3	20		3	20
127		3	20		3	20
136		3	20		3	20
117		3	20		3	20
128		3	20		3	20
115		3	20		3	20
126		3	20		3	20
105		3	20		3	20
116		3	20		3	20

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 140 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 146 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		

136		3	20		3	20
117		3	20		3	20
128		3	20		3	20
115		3	20		3	20
126		3	20		3	20
105		3	20		3	20
116		3	20		3	20

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 142 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 144 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		

126		3	20		3	20
105		3	20		3	20
116		3	20		3	20

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Black (5)				Manifold #5 142 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Black (5)				Manifold #5 143 cfm @ 34 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Black (5)				Manifold #5 140 cfm @ 34 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
206		3	20		3	20	- readings at ~3 scfm	
202		3	20		3	20		
195		3	20		3	20	- adjusted down/up to 3 scfm	
199		3	20		3	20		
196		3	20		3	20	PID reading 0.0 ppm	
151		3	20		3	20		
194		3	20		3	20		
149		3	20		3	20	walk all areas no air breaches or broken wells	
198		3	20		3	20		
139		3	20		3	20		
150		3	20		3	20		
167		3	20		3	20		
138		3	20		3	20		
125		3	20		3	20		
148		3	20		3	20		
127		3	20		3	20		
136		3	20		3	20		
117		3	20		3	20		
128		3	20		3	20		
115		3	20		3	20		
126		3	20		3	20		
105		3	20		3	20		
116		3	20		3	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)				Manifold #4 115cfm @ 40 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		2	18		3	20	- readings at ~3 scfm	
84		2	18		3	20		
76		2	18		3	20	- adjusted down/up to 3 scfm	
77		2	18		3	20		
86		2	18		3	20	PID reading 0.0 ppm	
85		2	18		3	20		
92		2	18		3	20		
93		2	18		3	20	walk all areas no air breaches or broken wells	
94		2	18		3	20		
103		2	18		3	20		
104		2	18		3	20		
114		2	18		3	20		
46		2	18		3	20		
47		1	18		1	20		
50		1	18		1	20		
51		1	18		1	20		
52		1	18		1	20		
55		1.5	18		1.5	20		
56		1	18		1	20		
54		1	18		1	20		
62		1	18		1	20		
61		1	18		1	20		
63		1	18		1	20		
69		1	18		1	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)				Manifold #4 120 cfm @ 40 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		1	20		1	20		
51		1	20		1	20		
52		1.5	20		2	20		
55		2	20		2	20		
56		1	20		1	20		
54		1	20		1.5	20		
62		1	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		1.5	20		2	20		

HMFN Airsparge Well Readings — Dec-20

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 120 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		1	20		1	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1	20		1	20		
54		1.5	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 122 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		1	20		1	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1	20		1	20		
54		1.5	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings	Feb-21	
WELL READINGS	Time of Reading	Zone Run Time

Zone (color/#): Zone Light Blue (4)	Manifold #4 121 cfm @ 40 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
68		3	20		3	20	- readings at ~3 scfm
84		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
77		3	20		3	20	
86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		1	20		1	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1	20		1	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings		Mar-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)	Manifold #4 125 cfm @ 40 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
68		3	20		3	20	- readings at ~3 scfm
84		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
77		3	20		3	20	
86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		1.5	20		1.5	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1.5	20		1.5	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings		Apr-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)	Manifold #4 126 cfm @ 40 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
68		3	20		3	20	- readings at ~3 scfm
84		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
77		3	20		3	20	
86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		1.5	20		1.5	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1.5	20		1.5	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings		May-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)	Manifold #4 118 cfm @ 40 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
68		3	20		3	20	- readings at ~3 scfm
84		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
77		3	20		3	20	
86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		1.5	20		1.5	20	
51		1	20		1	20	
52		1.5	20		2	20	
55		2	20		2	20	
56		1	20		1	20	
54		1	20		1	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings		Jun-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)	Manifold #4 120 cfm @ 40 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES

68		3	20		3	20	- readings at ~3 scfm
84		3	20		3	20	
76		3	20		3	20	- adjusted down/up to 3 scfm
77		3	20		3	20	
86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		1.5	20		1.5	20	
51		1	20		1	20	
52		1.5	20		2	20	
55		2	20		2	20	
56		1	20		1.5	20	
54		1	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 125 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		1.5	20		2	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1	20		1.5	20		
54		1	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 125 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		

76		3	20		3	20	- adjusted down/up to 3 scfm
77		3	20		3	20	
86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		2	20		2	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1.5	20		1.5	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 125 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		2	20		2	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1.5	20		1.5	20		
54		1.5	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 128 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		

86		3	20		3	20	PID reading 0.0 ppm
85		3	20		3	20	
92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		2	20		2	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1.5	20		1.5	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 126 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		2	20		2	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1.5	20		1.5	20		
54		1.5	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 123 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		

92		3	20		3	20	
93		3	20		3	20	walk all areas no air breaches or broken wells
94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		2	20		2	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1.5	20		1.5	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 122 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		2	20		2	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1.5	20		1.5	20		
54		1.5	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Light Blue (4)				Manifold #4 128 cfm @ 40 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	

94		3	20		3	20	
103		3	20		3	20	
104		3	20		3	20	
114		3	20		3	20	
46		3	20		3	20	
47		1	20		1	20	
50		2	20		2	20	
51		1	20		1	20	
52		2	20		2	20	
55		2	20		2	20	
56		1.5	20		1.5	20	
54		1.5	20		1.5	20	
62		1.5	20		1.5	20	
61		1	20		1	20	
63		1	20		1	20	
69		2	20		2	20	

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Light Blue (4)				Manifold #4 126 cfm @ 40 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
68		3	20		3	20	- readings at ~3 scfm	
84		3	20		3	20		
76		3	20		3	20	- adjusted down/up to 3 scfm	
77		3	20		3	20		
86		3	20		3	20	PID reading 0.0 ppm	
85		3	20		3	20		
92		3	20		3	20		
93		3	20		3	20	walk all areas no air breaches or broken wells	
94		3	20		3	20		
103		3	20		3	20		
104		3	20		3	20		
114		3	20		3	20		
46		3	20		3	20		
47		1	20		1	20		
50		2	20		2	20		
51		1	20		1	20		
52		2	20		2	20		
55		2	20		2	20		
56		1.5	20		1.5	20		
54		1.5	20		1.5	20		
62		1.5	20		1.5	20		
61		1	20		1	20		
63		1	20		1	20		
69		2	20		2	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Dark Blue (3)				Manifold #3 100 cfm @ 22 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		1	20		1	20	- readings at ~3 scfm	
30		3	20		3	20		
33		2.5	20		2.5	20	- adjusted down/up to 3 scfm	
35		1	20		1	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		2.5	20		2.5	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1	20		1	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Dark Blue (3)				Manifold #3 105 cfm @ 22 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1	20		1	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1	20		2	20		

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Dark Blue (3)				Manifold #3 105 cfm @ 22 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1	20		1	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		2	20		2	20		

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 100 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		1	20		1	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1	20		1	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1	20		1	20		

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 108 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		2	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1	20		2	20		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 108 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		2	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		2	20		2	20		

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Dark Blue (3)				Manifold #3 111 cfm @ 22 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		3	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		2	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		2	20		3	20		

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Dark Blue (3)				Manifold #3 111 cfm @ 22 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		3	20		3	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		2	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		3	20		3	20		

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Dark Blue (3)				Manifold #3 111 cfm @ 22 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		3	20		3	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		2	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		3	20		3	20		

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 111 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		3	20		3	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		2	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		3	20		3	20		

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 108 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1.5	20		2	20		

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 108 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1.5	20		2	20		

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 100 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1.5	20		2	20		

HMFN Airsparge Well Readings							Nov-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 110 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1.5	20		2	20		

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 112 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1.5	20		2	20		

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 106 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		1.5	20		2	20		

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 108 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		2	20		2	20		

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Dark Blue (3)				Manifold #3 108 cfm @ 22 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
32		2	20		2	20	- readings at ~3 scfm	
30		3	20		3	20		
33		3	20		3	20	- adjusted down/up to 3 scfm	
35		1.5	20		2	20		
34		3	20		3	20	PID reading 0.0 ppm	
31		3	20		3	20		
37		3	20		3	20		
39		2	20		2	20	walk all areas no air breaches or broken wells	
41		3	20		3	20		
40		3	20		3	20		
43		3	20		3	20		
42		3	20		3	20		
38		2	20		2	20		
36		2	20		2	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 140 cfm @ 20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		1	20		1	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		1	20		1	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		1	20		1	20		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 142 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		1	20		1	20		

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 143 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		1	20		1	20		

HMFN Airsparge Well Readings		Jan-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)	Manifold #2 143 cfm @20 psi	varies	hours aday
		NOTES	

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		2	20		2	20	- readings at ~3 scfm
20		3	20		3	20	
21		2	20		2	20	- adjusted down/up to 3 scfm
22		3	20		3	20	
23		3	20		3	20	PID reading 0.0 ppm
26		3	20		3	20	
28		2	20		2	20	
29		3	20		3	20	walk all areas no air breaches or broken wells
18		3	20		3	20	
27		2	20		2	20	
24		3	20		3	20	
29		1	20		1.5	20	

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)			Manifold #2 143 cfm @20 psi				varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		1.5	20		1.5	20		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)			Manifold #2 143 cfm @20 psi				varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		1.5	20		1.5	20		

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)			Manifold #2 140 cfm @20 psi				varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		1	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	

26		3	20		3	20	
28		2	20		2	20	
29		3	20		3	20	walk all areas no air breaches or broken wells
18		3	20		3	20	
27		2	20		2	20	
24		3	20		3	20	
29		1	20		1	20	

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 140 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		1	20		1	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		1	20		1	20		

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 142 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 145 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		

29		2	20		2	20	

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 146 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 143 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)				Manifold #2 146 cfm @20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings		Nov-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)	Manifold #2 144 cfm @20 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		2	20		2	20	- readings at ~3 scfm
20		3	20		3	20	
21		2	20		2	20	- adjusted down/up to 3 scfm
22		3	20		3	20	
23		3	20		3	20	PID reading 0.0 ppm
26		3	20		3	20	
28		2	20		2	20	
29		3	20		3	20	walk all areas no air breaches or broken wells
18		3	20		3	20	
27		2	20		2	20	
24		3	20		3	20	
29		2	20		2	20	

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)			Manifold #2 148 cfm @20 psi				varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)			Manifold #2 143 cfm @20 psi				varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Lime Green (2)			Manifold #2 143 cfm @20 psi				varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		

23		3	20		3	20	PID reading 0.0 ppm
26		3	20		3	20	
28		2	20		2	20	
29		3	20		3	20	walk all areas no air breaches or broken wells
18		3	20		3	20	
27		2	20		2	20	
24		3	20		3	20	
29		2	20		2	20	

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Lime Green (2)				Manifold #2 145 cfm @20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
19		2	20		2	20	- readings at ~3 scfm	
20		3	20		3	20		
21		2	20		2	20	- adjusted down/up to 3 scfm	
22		3	20		3	20		
23		3	20		3	20	PID reading 0.0 ppm	
26		3	20		3	20		
28		2	20		2	20		
29		3	20		3	20	walk all areas no air breaches or broken wells	
18		3	20		3	20		
27		2	20		2	20		
24		3	20		3	20		
29		2	20		2	20		

HMFN Airsparge Well Readings							Oct-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 114 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Nov-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 112 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Dec-20	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 112 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		

1		3	15		3	15
2		3	15		3	15
3		3	15		3	15
4		3	15		3	15
5		3	15		3	15
6		3	15		3	15
7		3	15		3	15
8		3	15		3	15

HMFN Airsparge Well Readings							Jan-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Feb-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 108 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Mar-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 111 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	

9		3	15		3	15	- readings at ~3 scfm
10		3	15		3	15	
11		3	15		3	15	- adjusted down/up to 3 scfm
12		3	15		3	15	
13		3	15		3	15	PID reading 0.0 ppm
14		3	15		3	15	
15		3	15		3	15	
16		3	15		3	15	walk all areas no air breaches or broken wells
17		3	15		3	15	
1		3	15		3	15	
2		3	15		3	15	
3		3	15		3	15	
4		3	15		3	15	
5		3	15		3	15	
6		3	15		3	15	
7		3	15		3	15	
8		3	15		3	15	

HMFN Airsparge Well Readings							Apr-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							May-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 109 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		

8		3	15		3	15

HMFN Airsparge Well Readings							Jun-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 112 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Jul-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Aug-21	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 111 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		

16		3	15		3	15	walk all areas no air breaches or broken wells
17		3	15		3	15	
1		3	15		3	15	
2		3	15		3	15	
3		3	15		3	15	
4		3	15		3	15	
5		3	15		3	15	
6		3	15		3	15	
7		3	15		3	15	
8		3	15		3	15	

HMFN Airsparge Well Readings							Sep-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Oct-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Tan (1)				Manifold #1 112 cfm @ 20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings		Nov-21	
WELL READINGS		Time of Reading	Zone Run Time
Zone (color/#): Zone Tan (1)	Manifold #1 113 cfm @ 20 psi	varies	hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
9		3	15		3	15	- readings at ~3 scfm
10		3	15		3	15	
11		3	15		3	15	- adjusted down/up to 3 scfm
12		3	15		3	15	
13		3	15		3	15	PID reading 0.0 ppm
14		3	15		3	15	
15		3	15		3	15	
16		3	15		3	15	walk all areas no air breaches or broken wells
17		3	15		3	15	
1		3	15		3	15	
2		3	15		3	15	
3		3	15		3	15	
4		3	15		3	15	
5		3	15		3	15	
6		3	15		3	15	
7		3	15		3	15	
8		3	15		3	15	

HMFN Airsparge Well Readings							Dec-21	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Tan (1)				Manifold #1 109 cfm @ 20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Jan-22	
WELL READINGS							Time of Reading	Zone Run Time
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi			varies	hours aday
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		

6		3	15		3	15
7		3	15		3	15
8		3	15		3	15

HMFN Airsparge Well Readings							Feb-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

HMFN Airsparge Well Readings							Mar-22	
WELL READINGS							Time of Reading varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 110 cfm @ 20 psi				
Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES	
9		3	15		3	15	- readings at ~3 scfm	
10		3	15		3	15		
11		3	15		3	15	- adjusted down/up to 3 scfm	
12		3	15		3	15		
13		3	15		3	15	PID reading 0.0 ppm	
14		3	15		3	15		
15		3	15		3	15		
16		3	15		3	15	walk all areas no air breaches or broken wells	
17		3	15		3	15		
1		3	15		3	15		
2		3	15		3	15		
3		3	15		3	15		
4		3	15		3	15		
5		3	15		3	15		
6		3	15		3	15		
7		3	15		3	15		
8		3	15		3	15		

APPENDIX H

KSCRT MEETING MINUTES

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
02/06/2014	170	8	Soistman, Catherine A.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

HMF North (SWMU 090)

Discussion:

The objective of the pilot test was to evaluate the effectiveness of air sparging by confirming the presence and properties of apparent reduced permeability soils through visual and geotechnical evaluation. The process began with the caveat that if the initial visual observations and/or geotechnical testing indicate that air sparging is not appropriate, the NASA RPM and Team will be consulted regarding a recommendation to proceed or discontinue implementation of the pilot testing. If the pilot test continued, the next step would be to evaluate effectiveness of distributing air to the sub-surface. By the pilot test, data would be obtained to support a full-scale air sparge system design, if applicable.

Geotechnical Sampling: Collected a soil core to 55 ft BLS and documented lithology, which was used to select depths for geotechnical sample collection. A geotechnical sample was collected at selected depths at an adjacent borehole. Lower permeability layers were noted at the following depths: 32.9 to 33.2, 34.0 to 34.3, 45 to 46 ft BLS and beyond. The 34 to 35 ft BLS interval contains 0.3 ft of lower permeability soil. The 39 to 40 ft BLS interval had slightly higher permeability soil. The 45 to 46 ft BLS interval had lower permeability soil. The following analyses were conducted on the samples: grain size analysis with hydrometer, moisture content, engineering classification, Atterberg limits, and a rigid wall permeability test. A flexible wall permeability test was also performed on the 45 to 46 ft BLS interval, since a flexible wall permeability test is more appropriate for clayey soils.

The 34 to 35 ft BLS interval had an engineering classification of: Sand, clayey with 33.4% fines. The 39 to 40 ft BLS interval had an engineering classification of: Sand, clayey with 40.0% fines. The 45 to 46 ft BLS interval had an engineering classification of: Clay with sand with 70.0% fines.

The rigid wall permeability tests indicated that the 34 to 35 and 39 to 40 ft BLS samples had intrinsic permeabilities of 2x10-10 and 3x10-10 cm2, respectively. Per the EPA guidelines, air sparging “may be effective; needs further evaluation”. Since air sparging has successfully been implemented at nearby VPF, which has similar lithology, it is likely that air sparging would be successful through the 34 to 35 and 39 to 40 ft BLS zones. The flexible wall permeability test indicated that the 45 to 46 ft BLS sample had an intrinsic permeability of 1x10-12 cm2. Per the EPA guidelines, air sparging would result in “marginal effectiveness to ineffective”.

Based on the evaluation of the geotechnical results, it is not likely that we could successfully move air through the deeper portion of the aquifer (>45 ft BLS), while depths above 45 ft BLS can likely be successfully sparged.

Options for path forward:
(1) Implement AS/SVE with AS screens set at approximately 45 ft BLS, followed by another technology to address remaining mass from 45 to 50 ft BLS. Concerns with implementing this technology include:
• Uncertainty in amount of mass that will be remaining in clayey layer after AS/SVE is complete,
• Uncertainty in effectiveness of technologies to remediate just clayey layer, i.e. EZVI, bio, ERH.
• Uncertainty if combined cost of AS/SVE and another technology would exceed cost of single technology.

(2) Eliminate AS/SVE as a remedy and revisit Step 2 recommendations. This will allow team to consider aggressive technologies, such as LDA, that would not be feasible if only remediating clayey layer. The facility is scheduled to be demolished this fiscal year (2014), allowing for flexibility in remediation technologies.

Team consensus reached to eliminate AS/SVE as a remedy.

Team consensus reached to revisit Step 2 EE remaining technologies (LDA Steam/ZVI, LDA Clay/ZVI, and ERH).

Team consensus reached to perform sampling at 8 wells for analysis of 1,4-dioxane and collect a sample at deep well MW0003 for analysis of VOCs.

Team consensus reached to perform interim groundwater monitoring for VOC analysis.

Goal:

Present geotechnical results and obtain team consensus on path forward.

Decision:22	Team consensus reached to eliminate AS/SVE as a remedy.
Decision:23	Team consensus reached to revisit Step 2 EE remaining technologies (LDA Steam/ZVI, LDA Clay/ZVI, and ERH).
Decision:24	Team consensus reached to perform sampling at 8 wells for analysis of 1,4-dioxane and collect a sample at deep well MW0003 for analysis of VOCs.
Decision:25	Team consensus reached to perform interim groundwater monitoring for VOC analysis.

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
01/15/2015	176	7	Daprato, Rebecca C.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

Hypergol Maintenance Facility North (SWMU 090)

Discussion:

Hypergol Module Processing – North Building (M7-961) was demolished in Sept 2014. High pressure N2 line is present, but abandoned in place (above ground portion has been removed). Sewer line is present, but abandoned in place. Steam lines have been removed. Lithologic investigations revealed intervals of fine-grained and silty sands (33 to 71% fines) with some fragmented shells. There are multiple intervals with lower conductivity based on HPT data and geotechnical sampling. These intervals should be given significant considerations when investigating dissolved mass as there is a greater potential for back diffusion than a higher conductivity unit.

Hot Spot 2 is the defined as the area with trichloroethene impacts above 3,000 µg/L in the former building footprint area. Source zone is trichloroethene greater than 11,000 µg/L.

Site-wide monitoring well sampling (9 wells) for 1,4-dioxane and VOCs was conducted in October 2014. DPT groundwater sampling for VOCs in Hot Spot 2 was conducted in September and October 2014. No significant changes in VOC concentrations measured at 8 of 9 monitoring wells sampled. One change: no CVOC exceedances at HMPN-MW0014 (decrease from historic vinyl chloride exceedance). Sampling results indicated that locations with elevated 1,4-dioxane detection limits previously currently have concentrations less than GCTLs (HMPN-MW0001, and MW0002). Samples collected from monitoring wells MW0008 and MW00011 have 1,4-dioxane GCTL exceedances and samples collected from monitoring well MW0006 has NADC exceedances.

DPT sampling locations generally followed the EE Step process suggestions. Deviations from these guidelines occurred in the eastern portion of the site due to the presence of a swale and utilities. DPT samples were not collected directly beneath the source zone to prevent drag down and creating a conduit for DNAPL migration. Deep samples (beneath depth of source zone) were collected immediately N, S, E, W and generally down gradient of source zone. In Hot Spot 2, CVOC NADC impacts were detected from 16 to 55 ft bls. Source Zone (trichloroethene > 11,000 µg/L) impacts from 31 to 55 ft bls. Maximum contaminant of concern concentrations measured between 31 to 50 ft bls. DNAPL free product collected in sample from DPT1210 (51 to 55 ft bls) and DPT1211 (46 to 50 ft bls). DNAPL sample sent to fixed based lab to evaluate composition. Sample from 46 to 50 ft bls had 87,800,000 µg/L of trichloroethene and 1,070,000,000 µg/L of Freon 113. Sample from 51 to 55 ft bls had 22,100,000 µg/L of trichloroethene and 811,000,000 µg/L of Freon 113. Mobile lab identified another contaminant of concern, likely freon during sampling. Groundwater sample from DPT1226 (41 to 45 ft bls) analyzed via fixed based lab to evaluate possible presence of other contaminants of concern. Mobile lab identified another contaminant of concern and 1,2-dichlorotrifluoroethane (CFC 123a) was detected (137,000 µg/L). There is no GCTL established for CFC 123a.

Team consensus reached on horizontal and vertical delineation of trichloroethene in Hot Spot 2 for the following contours: 3 µg/L, 300 µg/L, 3,000 µg/L, and 30,000 µg/L.

Team consensus reached on horizontal and vertical delineation of Freon 113 in Hot Spot 2 for the 210,000 µg/L contour.

Team consensus reached on horizontal and vertical delineation of cis-1,2-dichloroethene in Hot Spot 2 for the following contours: 70 µg/L, 700 µg/L, and 7,000 µg/L.

Team consensus reached on horizontal and vertical delineation of vinyl chloride in Hot Spot 2 for the following contours: 1 µg/L, 100 µg/L, 1,000 µg/L.

The overall Hot Spot 1 areas plumes were updated following 2014 sampling (east side of plume) – no major changes to area:
- 3,000 µg/L trichloroethene: 0.250 acres (2012 area) to 0.258 acres (2014 area)
- 11,000 µg/L trichloroethene: 0.160 acres (2012 area) to 0.163 acres (2014 area)
- 30,000 µg/L trichloroethene: 0.130 acres (2012 area) to 0.128 acres (2014 area)

The overall CVOC plumes for LCP and HCP were updated following 2014 sampling:
- LCP: 3.02 acres (2012 area) to 3.04 acres (2014 area)
- HCP: 1.59 acres (2012 area) to 1.64 acres (2014 area)

Goal:

Obtain team consensus on Step 1A EE for Hot Spot 2.

Decision:33	Team consensus reached on horizontal and vertical delineation of Freon 113 in Hot Spot 2 for the 210,000 µg/L contour.
Decision:35	Team consensus reached on horizontal and vertical delineation of vinyl chloride in Hot Spot 2 for the following contours: 1 µg/L, 100 µg/L, 1,000 µg/L.

Decision:32	Team consensus reached on horizontal and vertical delineation of trichloroethene in Hot Spot 2 for the following contours: 3 µg/L, 300 µg/L, 3,000 µg/L, and 30,000 µg/L.
Decision:34	Team consensus reached on horizontal and vertical delineation of cis-1,2-dichloroethene in Hot Spot 2 for the following contours: 70 µg/L, 700 µg/L, and 7,000 µg/L.

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
01/15/2015	176	8	Daprato, Rebecca C.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

Hypergol Maintenance Facility North (SWMU 090)

Discussion:

The Hot Spot 1 area is defined as the area with trichloroethene impacts greater than 3,000 µg/L around swale on west side of former building with the Source Zone defined as the area with trichloroethene greater than 11,000 µg/L (~1% solubility). The Hot spot 2 area is defined as the area with trichloroethene impacts greater than 3,000 µg/L (10XNADC) in former building footprint with the Source Zone defined as the area with trichloroethene greater than 11,000 µg/L (~1% solubility). Areas to be evaluated within the Step 2 EE: Include areas from Hot Spot 1 and Hot Spot 2, trichloroethene greater than 300 µg/L (NADC) and trichloroethene greater than 3,000 µg/L (10XNADC). The proposed remediation depth is 50 ft BLS in Hot Spot 1 and 60 ft BLS in Hot Spot 2. Geotechnical test results indicate that air sparging may be effective above 45 ft BLS, but further evaluation needed. Oxidant Demand (Mod48) results were highly variable. Biotreatability study indicated that reductive dechlorination stalls at cis-1,2-dichloroethene in source zone (MW0002), likely due to Freon 113 [complete reduction to ethene observed in HCP (MW0009)]. Bioremediation Pilot Test generally successful as it reduced up to 91% of cis-1,2-dichloroethene mass in depth interval of interest. Slow dechlorination rates likely due to low pH. EZVI bench scale study indicated significant trichloroethene reductions (>88%). The EZVI bench scale study was conducted with source area material (MW0002, 30 to 40 ft BLS) and there was no notable difference if augmented with KB-1.

Suggestion was made to do a literature search to determine whether or not air sparging and ERH technologies have been coupled.

Team consensus reached to evaluate the following technologies in a combined Step 2 EE for Hot Spot 1 and 2 within the TCE greater than 300 µg/L and TCE greater than 3,000 µg/L areas:
• LDA mixing (steam/ZVI),
• thermal (electrical and fuel-based heating systems),
• thermal for deeper depths and air sparging for shallow depths, and
• thermal for deeper depths and EZVI for shallow depths.

Goal:

Obtain team consensus on Step 1B EE for Hot Spot 1 and 2.

Decision:36	Hypergol Maintenance Facility North (SWMU 090) - Team consensus reached to evaluate the following technologies in a combined Step 2 EE for Hot Spot 1 and 2 within the TCE greater than 300 µg/L and TCE greater than 3,000 µg/L areas: • LDA mixing (steam/ZVI), • thermal (electrical and fuel-based heating systems), • thermal for deeper depths and air sparging for shallow depths, and • thermal for deeper depths and EZVI for shallow depths.

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
09/01/2016	186	7	Soistman, Catherine A.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

Hypergol Maintenance Facility (HMF) North (HMFN) (SWMU 090)

Discussion:

Hot Spot 1 is defined as TCE greater than 3,000 µg/L in the area of the swale southwest of the former building. Hot Spot 2 is defined as TCE greater than 3,000 µg/L in footprint of the former building. The HCP is defined as CVOC concentrations greater than the NADCs.

LCP and Hot Spot 1 Step 1A EE and Hot Spot 1 Step 1B EE presented in 2012. The Step 1A EE provided delineation of the TCE, cDCE, and VC to GCTLs (LCP) and delineation of Hot Spot 1 (TCE greater than 3, 000 µg/L). Consensus was reached at that time that CVOC concentrations below 55 ft BLS in Hot Spot 1 are likely drag down.

Hot Spot 1 Step 2 EE was presented in 2013. This Step 2 evaluated LDA with steam/ZVI and clay/ZVI, excavation using LDA and caissons, ERH, air sparging with soil vapor extraction (AS/SVE), and EZVI. Path forward from this presentation was to perform geotechnical analysis of site soil to evaluate permeability (evaluate if air sparging can be successfully implemented).

Results of the geotechnical evaluation were presented in 2014 indicating permeability is too low for air sparge at depths greater than 45 ft BLS. Visual observations of soil cores suggest air sparge not likely to be successful greater than 45 ft BLS. Path forward was to revisit the Step 2 EE. During 2014 the Hypergol Module Processing North (HMPN) building was demolished and additional assessment was performed under the former building footprint.

In 2015 the Hot Spot 2 Step 1A EE was presented which provided delineation of Hot Spot 2 as follows:
• TCE GCTL, NADC, 10XNADC, 100XNADC
• cDCE and VC GCTL, NADC, 10XNADC
• Freon 113 GCTL
Hot Spot 1 and Hot Spot 2 Step 1B EE was presented in 2015. The Step 2 EE for Hot Spot 1 and 2 was prepared in 2015. It included an evaluation of LDA with steam and EZVI, ERH, and a combination of ERH with EZVI and ERH with AS/SVE. The Step 2 EE was reviewed by NASA and the A&Es but not presented. A decision was made to revise the Step 2 EE and evaluate less aggressive technologies and/or combined technologies.

Lithologic investigations revealed intervals of fine-grained and silty sands (33 to 71% fines) with some fragmented shells. There are multiple intervals with lower conductivity. Based on HPT, intervals of lower conductivity are located at approximately 6 to 10 and 45 to 50 ft BLS. Based on geotechnical sampling, there are intervals with lower conductivity greater than 45 ft BLS (silt/clay with sand) and clayey sand was identified at 34 to 35 and 39 to 40 ft BLS. There is a greater potential for back diffusion from lower permeability layers.

Recent sampling activities include monitoring well sampling in January 2016 to evaluate 1,4-dioxane and VOC concentrations. Supplemental DPT groundwater assessment to evaluate the Hot Spot 1 HCP was conducted in December 2015 and April/May 2016. Monitoring well sampling results indicate that VOC concentrations are generally consistent with historical results. Concentrations of VOCs in the deep zone were below GCTLs (with the exception of MW0003), which supports the conclusion that impacts greater than 55 ft BLS detected during DPT sampling are drag down. Of the nine wells analyzed for 1,4-dioxane, four wells had exceedances of the GCTL with concentrations that ranged from 3.4 I to 320 L (L indicates value exceeds the calibration range) µg/L.

Recent DPT sampling results delineated the Hot Spot 1 HCP. Limited data collected within the TCE 3,000 ppb plume and the LCP are generally consistent with previous data.

Team consensus reached for Hot Spot 1 that TCE 3 µg/L and 300 µg/L plumes are delineated.

Team consensus reached for Hot Spot 1 that cDCE 70 µg/L and 700 µg/L plumes are delineated.

Team consensus reached for Hot Spot 1 that VC 1 µg/L and 100 µg/L plumes are delineated.

Goal:

Present the site characterization (Step 1) EE for the HCP and LCP associated with Hot Spot 1. Obtain Team consensus on delineation of the Hot Spot 1 HCP and the Hot Spot 1 GCTL.

Decision:25	Team consensus reached for Hot Spot 1 that cDCE 70 µg/L and 700 µg/L plumes are delineated.
Decision:26	Team consensus reached for Hot Spot 1 that VC 1 µg/L and 100 µg/L plumes are delineated.
Decision:24	Team consensus reached for Hot Spot 1 that TCE 3 µg/L and 300 µg/L plumes are delineated.

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
09/01/2016	186	8	Daprato, Rebecca C.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

HMFN (SWMU 090)

Discussion:

Hot Spot 1 is the area with TCE impacts above 3,000 µg/L (10XNADC) around swale on west side of former building. Hot Spot 2 is the area with TCE impacts above 3,000 µg/L (10XNADC) in former building footprint area. The HCP is the area with TCE, cDCE, or VC greater than their respective NADCs. Hot Spot 1 sampling results indicate that CVOC NADC impacts were detected from 6 to 70 ft BLS, source zone impacts (TCE greater than 11,000 µg/L) from 6 to 50 ft BLS, and maximum concentrations were measured between 31 to 50 ft BLS. Hot Spot 2 sampling results indicate that CVOC NADC impacts were detected from 16 to 55 ft BLS, source zone impacts were from 31 to 55 ft BLS, maximum COC concentrations were measured between 31 to 50 ft BLS, and DNAPL was observed in samples collected from DPT1210 and 1211.

A high pressure N2 line and sewer line are abandoned in place. A swale runs through site and a portion of Hot Spot 1. Proposed remediation depth is 50 ft BLS in Hot Spot 1 and 60 ft BLS in Hot Spot 2. Multiple low permeability layers were observed. Geotechnical results suggest air sparging is unlikely to move air through zones deeper than 45 ft BLS. The oxidant demand results were highly variable. Biotreatability study indicated that reductive dechlorination stalls at cDCE in sources zone (MW0002) which is likely due to Freon 113 inhibition of dechlorinating organisms. Bio pilot test conducted outside area of anticipated Freon inhibition was generally successful. The EZVI bench scale study indicated significant TCE reductions.

Propose evaluating aggressive technologies, less aggressive technologies, and a combination of aggressive and less aggressive technologies.

Team consensus reached that no engineering data gaps were identified.

Team consensus reached to prepare a remedial alternative evaluation with the following technologies:
1. LDA in TCE greater than 300 µg/L (present from 2015 Step 2 EE)
2. ERH in the TCE greater than 300 µg/L (present from 2015 Step 2 EE)
3. LDA in TCE greater than 3,000 µg/L (present from 2015 Step 2 EE)
4. ERH in TCE greater than 3,000 µg/L (present from 2015 Step 2 EE).
5. Air sparge in HCP associated with Hot Spot 1 and Hot Spot 1 above 45 ft BLS, potentially followed by ZVI in Hot Spots in TCE greater than 3,000 µg/L (below 45 ft BLS)
6. Air sparge in HCP above 45 ft BLS, potentially followed by ZVI in Hot Spot 1 TCE greater than 3,000 µg/L (below 45 ft BLS) with LDA in TCE greater than 11,000 µg/L in Hot Spot 2
7. Air sparge in HCP above 45 ft BLS, potentially followed by ZVI in Hot Spot 1 TCE greater than 3,000 µg/L (below 45 ft BLS) with ERH in TCE greater than 11,000 µg/L in Hot Spot 2

Goal:

Present the Site Characterization (Step 1) EE: Proposed Remedial Alternative Evaluation Technologies for Hot Spot 1, Hot Spot 2, and HCP. Obtain team consensus on areas and remedial technologies to be evaluated in the Remedial Alternatives Evaluation EE.

Decision:27	Team consensus reached that no engineering data gaps were identified.
Decision:28	Team consensus reached to prepare a remedial alternative evaluation with the following technologies: 1. LDA in TCE greater than 300 µg/L (present from 2015 Step 2 EE) 2. ERH in the TCE greater than 300 µg/L (present from 2015 Step 2 EE) 3. LDA in TCE greater than 3,000 µg/L (present from 2015 Step 2 EE) 4. ERH in TCE greater than 3,000 µg/L (present from 2015 Step 2 EE) 5. air sparge in HCP associated with Hot Spot 1 and Hot Spot 1 above 45 ft BLS, potentially followed by ZVI in Hot Spots in TCE greater than 3,000 µg/L (below 45 ft BLS) 6. air sparge in HCP above 45 ft BLS, potentially followed by ZVI in Hot Spot 1 TCE greater than 3,000 µg/L (below 45 ft BLS) with LDA in TCE greater than 11,000 µg/L in Hot Spot 2 7. air sparge in HCP above 45 ft BLS, potentially followed by ZVI in Hot Spot 1 TCE greater than 3,000 µg/L (below 45 ft BLS) with ERH in TCE greater than 11,000 µg/L in Hot Spot 2

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
12/08/2016	190	6	Langenbach, Jim	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

HMFN (SWMU 090)

Discussion:

Site Characterization Summary and Pertinent Site Conditions:
• Building in Hot Spot 2 area was demolished in September 2014
• Utilities located on site
? High pressure Nitrogen (N2) line is present, but abandoned in place (Above ground portion has been removed)
? Sewer line is present, but abandoned in place
? Steam lines have been removed
• Swale runs through site and portion of Hot Spot 1
• 10 times NADC plume crosses asphalt roadway
• Proposed remediation depth is 50 ft BLS in Hot Spot 1 and 60 ft BLS in Hot Spot 2
• Multiple low permeability layers observed

Utility removal is not required for all options. Option 5 does not require utility removal. Partial utility removal is already accounted for in Option 6 and 7 cost estimates. Utility removal costs are included for all options requiring utility removal. The sentence on Page 3 of the HMF North Hot Spots 1 and 2 Description of Alternatives regarding the large diameter auger (LDA) contractor has been removed.

The corrective action objective (CAO) for active remediation is to reduce VOC concentrations within the treatment areas to concentrations that enable a transition to MNA.

Option 1 - LDA Mixing with Steam and zero-valent iron (ZVI) in Hot Spots 1 and 2 for TCE greater than 300 micrograms per liter (µg/L)
Site Preparation/Restoration
• Pre and post-treatment DPT groundwater sampling
• Abandonment and removal of monitoring wells in treatment area
• Removal of abandoned-in-place utilities and gravity sewer main
• Design/install electrical connection at site
• Installation of monitoring wells in treatment area for post-treatment monitoring
• Demolition and restoration of roadway within LDA treatment area
684 auger locations with 17.5 % overlap
• Revising the overlap to 13.5% reduces auger locations to 676 (costing did not consider reduction in number of augers).
• Will look at no overlap during implementation design based what was seen at Wilson Corners as well as a site in Kentucky.
Treatment implementation time estimated at approximately 11 months (6 days per week and 10 hour days).
A high degree of effectiveness is anticipated.
Cost estimated at $7.6 million with an approximate time to achieve the CAO of approximately 1 year.

Option 2 - electrical resistance heating (ERH) in Hot Spots 1 and 2 for TCE greater than 300 µg/L
Site Preparation/Restoration
• Pre and post-treatment DPT groundwater sampling
• Abandonment and removal of monitoring wells in treatment area
• Removal of abandoned-in-place utilities and gravity sewer main
• Design/install electrical connection at site
• Installation of monitoring wells in treatment area for post-treatment monitoring
• Demolition and restoration of roadway within ERH treatment area
The conceptual design layout consists of 109 electrodes and co-located vapor recovery wells (65 in Hot Spot 1 and 44 in Hot Spot 2 as well as 16 temperature monitoring points).
Total power consumption of approximately 9,444,000 kilowatt hours
Infiltration gallery approximately 1,160 ft2
Includes 15 days of “hot” DPT sampling
Treatment implementation time estimated at approximately 13 months.
Cost estimated at $7.2 million with an approximate time to achieve the CAO of approximately 1 year.

Option 3 - LDA Mixing with Steam and ZVI in Hot Spots 1 and 2 for TCE greater than 3,000 µg/L
462 auger locations with 17.5 % overlap
• Revising the overlap to 13.5% reduces auger locations to 445 (costing did not consider reduction in number of augers).
Treatment implementation time estimated at approximately 8 months (6 days per week and 10 hours per day).
A high degree of effectiveness is anticipated.
Cost estimated at $75.5 million with an approximate time to achieve the CAO of approximately less than 1 year.

Option 4 - ERH in Hot Spots 1 and 2 for TCE greater than 3,000 µg/L
Site Preparation/Restoration
• Pre and post-treatment DPT groundwater sampling

• Abandonment and removal of monitoring wells in treatment area
• Removal of abandoned-in-place utilities and gravity sewer main
• Design/install electrical connection at site
• Installation of monitoring wells in treatment area for post-treatment monitoring
• Demolition and restoration of roadway within ERH treatment area
The conceptual design layout consists of 77 electrodes and co-located vapor recovery wells (48 in Hot Spot 1 and 29 in Hot Spot 2 as well as 12 temperature monitoring points).
• Suggestion was made to orient the electrode layout such that a higher percentage of the TCE greater than 3,000 µg/L is covered by ERH treatment.
Total power consumption of approximately 6,534,000 kilowatt hours
Infiltration gallery approximately 800 ft2
Includes 10 days of "hot" DPT sampling
Treatment implementation time estimated at approximately 10 months.
Cost estimated at $5.6 million with an approximate time to achieve the CAO of approximately less than 1 year.

Option 5 - Air Sparging in Hot Spot 1 and Hot Spot 2 chlorinated volatile organic compound (CVOC) HCP with Potential EZVI Injection below 45 ft BLS
The maximum depth of air sparge wells is 45 ft BLS with well screens set above the low permeability layer.
Impacts that are greater than 45 ft BLS (if present post air sparge implementation) will be treated with EZVI.
• Post-treatment DPT groundwater sampling will be utilized to evaluate if EZVI injections are necessary (if there are CVOCs greater than NADC will inject).
Conceptual layout based upon:
20 ft radius of influence (ROI) in areas with CVOC impacts less than 30 ft BLS
10 ft ROI in area with CVOC impacts up to 45 ft BLS
Nested wells installed in the Hot Spot 1 source zone
Installation of 230 air sparge wells
• 10 wells to 27 ft BLS
• 11 wells to 32 ft BLS
• 215 wells to 45 ft BLS
Installation of 25 performance monitoring wells sampled semi-annually for VOCs.
Potential EZVI injection (one injection event costed) – design will be based on post treatment DPT sampling results
Cost range estimated from $4.7 to $5.2 million with an approximate time to achieve the CAO of approximately 5 to 7 years.
This option may require multiple EZVI injections and may be difficult to achieve significant CVOC mass reduction in Hot Spot 2 source zone (45 to 60 ft BLS).

Option 6 - Air Sparging in Hot Spot 1 and Hot Spot 2 CVOC HCP with Potential EZVI Injection below 45 ft BLS and LDA Mixing with Steam and ZVI in Hot Spot 2 where TCE is greater than 11,000 µg/L
This option has the same design parameters/assumptions for air sparge as used for Option 5.
Installation of 215 air sparge wells
• 10 wells to 27 ft BLS
• 11 wells to 32 ft BLS
• 194 wells to 45 ft BLS (including angle drilled wells under roadway_
Installation of 19 performance monitoring wells sampled semi-annually for VOCs.
LDA in Hot Spot 2
• Same design parameters/assumptions used as Option 1 and 3
• Implemented in area where TCE greater than 11,000 µg/L
• 127 LDA borings based on 13.5% overlap
• Steam only from 0 to 30 ft BLS
• ZVI/steam from 30 to 60 ft BLS
• Post implementation monitoring well installation (6 wells) – quarterly sampling for VOCs
Potential EZVI injection (one injection event costed) – design will be based on post treatment DPT sampling results.
Cost range estimated from $5.6 to $6.1 million with an approximate time to achieve the CAO of approximately 5 to 7 years.
This option aggressively treats the Hot Spot 2 source zone and may require multiple EZVI injections in Hot Spot 1 source zone.
In IMWP add costing for removal of piping and air sparge wells. Might need the removal of infrastructure to not limit the LDA footprint (allowing step out for LDA as needed).

Option 7 - Air Sparging in Hot Spot 1 and Hot Spot 2 CVOC HCP with Potential EZVI Injection below 45 ft BLS and ERH in Hot Spot 2 where TCE greater than 11,000 µg/L
Air sparge and EZVI design and layout is the same as Option 6.
ERH in Hot Spot 2
Same design parameters/assumptions used as Option 2 and 4
Implemented in area where TCE greater than 11,000 µg/L
25 sheet pile electrodes and co-located vapor recovery wells (installed to 62 ft BLS)
12 temperature monitoring points
Five day hot DPT sampling to evaluate effectiveness
Installation of 6 post implementation monitoring wells sampled quarterly for VOCs.
Cost range estimated from $6.5 to $7.0 million with an approximate time to achieve the CAO of approximately 5 to 7 years.
This option aggressively treats the Hot Spot 2 source zone and may require multiple EZVI injections in Hot Spot 1 source

zone.

Data Gaps
There is uncertainty around design implications of some utilities on site
• Electrical and telecom duct bank and water main (located at the toe of the TCE NADC and/or TCE 10 times NADC plume).
• Need to determine the depth and material of construction
• For LDA, could apply EZVI injections around utilities rather than soil mixing/heat
• For heating technologies:
? Heater electrodes spacing could be modified
? In area of utilities, temperatures could be lowered and system operated longer (depends on material and depth of utilities)
Uncertainty in what the residual mass for treatment from 45 to 60 ft BLS would be in Hot Spot 2 with EZVI post air sparge

Team consensus reached to implement air sparge for the CVOC NADC and LDA for Hot Spot 2 (Option 6).

Team has not agreed to the order of implementation. Some are not convinced to do air sparge first instead of LDA first in regards to Hot Spot 2 (as it is deeper). If you do air sparge first will clean up most the site quickly (in approx. 1 to 1½ years). Some team members felt that in Hot Spot 1 should do air sparge first and then EZVI, but in Hot Spot 2 LDA first then do the air sparge; this would mean that the air sparge remedy would be on hold for some period of time.

Goal:	
Present remedial alternative evaluation for Hot Spots 1 and 2 and HCP and obtain consensus on path forward.	
Decision:9	Team consensus reached to implement air sparge for the CVOC NADC and LDA for Hot Spot 2 (Option 6).

Meeting Minutes Summary Report

Meeting Start Date:	Meeting ID:	Minute ID:	Presenter:	PRL / SWMU:
10/18/2017	193	14	Daprato, Rebecca C.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)

Topic:

Hypergol Maintenance Facility North (SMWU 090)

Discussion:

The IM objective is to reduce CVOC concentrations within the IM Implementation Area to concentrations that facilitate a transition to LTM. The IM implementation area is the HCP, excluding the Hot Spot 2 source zone from 0 to 45 ft BLS, approximately 1.56 acres.

Ground penetrating radar (GPR) survey will be conducted pre-implementation and results will be included in the Implementation Work Plan (IWP) to allow for modifications of design. Monitoring well installation and baseline groundwater and air sampling will be conducted. 213 air sparge wells are proposed.

There are known site utilities that may require modified placement of air sparge well locations. GPR survey will help confirm utility locations.

The layout of the air sparge wells for each Hot Spot is based on the information provided below.
Hot Spot 1:
Air sparge wells within the vicinity of Hot Spot 1 source zone associated with CVOC 100 times NADC below 30 ft BLS is designed with a 10 ft radius of influence (ROI). Air sparge wells within the vicinity of Hot Spot 1 source zone associated with CVOC 100 times NADC above 30 ft BLS are designed with a 20 ft ROI. Air sparge wells within the remaining HCP associated with Hot Spot 1 have a 20 ft ROI.

Hot Spot 2:
Air sparge wells within the HCP that connected Hot Spot 1 and 2 as well as air sparge wells within the Hot Spot 2 HCP (Hot Spot 2 source zone omitted) are designed with a 10 ft ROI.

Soil cores will be collected at the bottom 10 ft of every air sparge borehole, except those with a screen interval of 25 to 27 ft BLS (this zone above known low permeability layers), to verify that the proposed well screen is not installed within low permeability layer and to mitigate issues associated with borehole wall compaction.

Air sparge piping layout will be installed so the system can operate with five zones and the piping will be HDPE. Manifolds will be utilize to distribute air from the system to the individual air sparge wells. The current design assumes the use of NASA-KSC air sparge trailer No. 7.

The performance monitoring well network consists of 21 proposed and 6 existing monitoring well locations. For performance monitoring a total of 27 wells will be sampled for CVOCs at the following intervals baseline, quarterly (year 1), and semiannually (post year 1).

Air quality monitoring of the IM Implementation area will be performed during first month of operation, which will include: (i) PID screening in breathing zone during O&Ms; and (ii) baseline and weekly (4 weeks) air samples at each Hot Spot.

Total implementation cost with 5 to 7 years of OM&M is approximately $2.2 to $2.5 million. Optional cost to procure an air sparge trailer (100 hp, 530 scfm at 102 psi) is approximately $240,000.

Team consensus reached on air sparge IMWP.

Goal:

Present Air Sparge Interim Measures Work Plan.

Decision:22	Team consensus reached on air sparge IMWP.

Meeting Minutes Report

May 2018 Team Meeting

Meeting Date From: 5/10/2018 To: 5/10/2018

Meeting ID: 1805

Location Description: Kennedy Space Center-FL

Meeting Type: Full Partnering Team Meeting

Meeting Topic:	**Hypergol Maintenance Facility North (SWMU 090)**		
Minute: 1805-M6	**Site:**	**Goal:**	**Discussion:**
Presenter: Daprato, Rebecca C.	HYPERGOL MODULE PROCESSING NORTH (SWMU 090)	Obtain team consensus on interim groundwater monitoring (IGM) for 2019.	Based on the results of the 2018 IGM, the sampling results are generally consistent with historic results, which suggest that the plumes are not migrating vertically or horizontally (i.e., stable conditions). Geosyntec recommends continuing IGM until the remedy is implemented. The proposed plan for the 2019 IGM is presented in Table 5 and on Figure 10, provided to the team. The only modification made to the sampling plan is the recommendation to remove the analysis of 1,4-dioxane from the samples collected from monitoring well MW0015, since the concentrations for the last two consecutive events have been below the GCTL. Team consensus reached on IGM scheduled for January 2019 (pending the implementation of the air sparge IM) as follows: CVOC and Freon 113 analysis from monitoring wells MW0001, MW0004, MW0005, MW0008, MW0011, MW0012, MW0015, MW0016, MW0022, MW0002, MW0006, MW0010, MW0013, MW0019, PZ0010, MW0003, MW0024, MW0025, and MW0026 and 1,4-dioxane analysis from monitoring wells MW0008, MW0011 and MW0006. In addition, water levels will be collected from accessible site monitoring wells. New advisory numbers are out for 1,4-dioxane; is one tenth of the current GCTL.
Decision:19	Team consensus reached on IGM scheduled for January 2019 (pending the implementation of the air sparge IM) as follows: CVOC and Freon 113 analysis from monitoring wells MW0001, MW0004, MW0005, MW0008, MW0011, MW0012, MW0015, MW0016, MW0022, MW0002, MW0006, MW0010, MW0013, MW0019, PZ0010, MW0003, MW0024, MW0025, and MW0026 and 1,4-dioxane analysis from monitoring wells MW0008, MW0011 and MW0006. In addition, water levels will be collected from accessible site monitoring wells.		

Meeting Topic:	**Radar Wind Profiler Site D (PRL 194)**		
Minute: 1805-M7	**Site:**	**Goal:**	**Discussion:**
Presenter: Lloyd, James	RADAR WIND PROFILER SITE D (PRL 194)	Present confirmation sampling results and obtain team consensus on path forward.	The Solid Waste Management Unit Assessment conducted in 2010 identified 5 locations of concern (LOCs). LOC 1 Electrical Transformer Bank JB-2 – four soil samples collected from 0 to 0.5 ft BLS and analyzed for PCBs and TRPH. All results were non-detect for PCBs. Two soil

2102-M12 Chris Hook /Tetra Tech

Hypergol Maintenance Facility North (SWMU #090), Interim Measure Construction Completion Report, February 2021

Goal: The purpose of the ADP is to primarily focus on an overview of the pre-construction baseline direct-push technology (DPT) sampling event, interim measure (IM) installation activities, IM commissioning and start-up, and initial operations, maintenance, and monitoring (OM&M).

Discussion: The footprint of the air sparge (AS) IM includes the High Concentration Plume (HCP), which is defined by chlorinated volatile organic compound (CVOC) concentrations exceeding State of Florida Natural Attenuation Default Concentrations (NADC), with the exception of Hot Spot 2. Hot Spot 2 is intended to be managed by a potential follow-on IM upon completion of the HCP AS IM. The current IM objective is to reduce VOC concentrations in the groundwater treatment zone to below NADCs to facilitate transition of the site into MNA through LTM. General background and history of the site was included within the ADP and described further in historical site documents.

FDEP requested clarification on whether or not the pilot test mentioned in the ADP was conducted at the site. Tetra Tech stated that the emulsified zero valent iron pilot test was not implemented at the site. NASA added that Freon was an inhibitor and decided against that treatment option.

In October 2019, a baseline direct push technology sampling event was completed. Results led to minor adjustments in the IM treatment footprint, which yielded an expansion from 213 AS well (ASWs) to 228 ASWs. Discussion of the modified ASW array was presented to the Team.

In November 2019 through January 2020, premobilization activities, such as planning documents, utility location, procurement, and permitting were completed. In December 2020 through January 2021, air sparge well installation took place; January through July 2021: Piping and infrastructure installation, with temporary suspense due to COVID-19 precautions; June 2021: Baseline monitoring at groundwater monitoring wells and pre-IM ambient air sampling; July 2021: Electrical installation; August 2021: AS

system delivery, installation, commissioning, and start-up; October 2021: Q1 performance monitoring sampling (results included within ADP); and from August 2021 to present: OM&M of the site.

The recommended path forward is to continue OM&M of the air sparge IM, which includes: Year 1 quarterly performance monitoring, routine preventative maintenance and inspections, operational data recording, and ambient air monitoring. The path forward also includes assessing Q2 performance monitoring results and optimization operations such as pulse duration, pulse frequency, and air sparge zone air flow rate and pressure. The Year 1 OM&M report will be provided upon completion.

FDEP inquired if this was just the AS portion of the remediation, to which Tetra Tech confirmed it was. FDEP observed that this briefing was more detailed than the ADP provided, and requested a copy. Tetra Tech stated they would provide after the meeting. FDEP also noted that in the future they would like to see groundwater monitoring on the entirety of the plume; more of a total delineation of horizontal and vertical plume to include the low concentration plume. How long will this system run? NASA responded with a minimum of four years of run time. The design of the IM for treatment of deep CVOCs will be refined with performance monitoring data from the AS IM, so maybe six years total.

2102-M13 Chris Marshall /AECOM

Industrial Area LTM, February 2021

Goal: The purpose of the ADP is to present activities and data associated with 15 Industrial Area (IA) long-term monitoring (LTM) sites: Communication, Maintenance, and Storage (CMS) Facility (SWMU 082), Fuel Storage Area #1 (FSA1) Building 1044 Underground Storage Tank (UST) (Potential Release Location [PRL] 157), Launch Equipment Test Facility (LETF) (SWMU 091), Orsino Storage Yard (ORSY) (SWMU 004), Citgo Service Station (CGO) (PRL 129), Ransom Road Landfill (RRLF) (SWMU 003), Vertical Processing Facility (VPF) (SWMU 077), Environmental Health Facility (EHF) (SWMU 079), Space Station Processing Facility (SSPF) (SWMU 098), Operations and Checkout Building (O&C) (SWMU 076), Engineering Development Laboratory (EDL) (SWMU 085), Building M7-0505 Treatment Tank Area (M7-505)

Corners) might have a planned small dig and installation of air sparge wells listed as presumptive remedies. FDEP is not receptive to a blanket statement of air sparging, soil digs, etc., at all sites listed on the permit.

NASA stated that prior to the 2012 RCRA permit update, the application contained listings and maps associated with all the sites listed. NASA would be happy to incorporate presumptive remedies into the permit. This approach would put the remedies into a relatively certain timeframe since permits are renewed every 5 years.

2201-M03 Chris Hook/Tetra Tech

Hypergol Maintenance Facility North(HMFN) (SWMU #090) Performance Monitoring Report, January 2022

Goal: The objective is to provide a brief background of site conditions and the baseline and Year 1 quarterly performance groundwater results at HMFN. System startup and operations, quarterly synoptic groundwater survey results, data evaluation and a path forward were presented.

Discussion:

The IM objectives were to reduce volatile organic compounds (VOC) concentrations within the high concentration plume (HCP) to concentrations that facilitate transition of the site into monitored natural attenuation (MNA) through long-term monitoring; follow completion of or at a later point during the air sparge (AS) interim measure (IM), reassess the hot spot 2 (HS2) source zone (SZ) and implement the next phase of remediation; and overall reduce concentrations of VOCs present in groundwater to levels below their respective State of Florida groundwater cleanup target levels (GCTLs). The treatment zone covers approximately 1.62 acres with an east-west orientation. AS wells were installed to total depths ranging from 25 to 45 feet below land surface (bls), based on design criteria and real-time geologic interpretation.

During Year 1 of system operations (August 2020 to August 2021) the HMFN air sparge system air flow rates consistently met the design flow rates and pressures. The system runtime was 83%, with longest downtimes associated with groundwater sampling events. Following baseline sampling in June 2020, performance monitoring

sampling was conducted in October 2020, January 2021, April 2021, and July 2021.

In the shallow zone (5-20ft bls), the shallow plume is bending toward the southeast, with isolated vinyl chloride (VC) exceedances adjacent to the borrow lake, oscillating between natural attenuation default concentrations (NADC) and GCTL at MW0037 during Year 1, with GCTL exceedances in July 2021. Ten times NADC (10XNADC) VC results in the source zone decreased to levels near the GCTL by July 2021. By the end of Year 1, cis-1,2-dichloroethene (cDCE) results were above GCTL at MW0009 only (from >NADC during baseline to <NADC in July 2021). No trans-1,2-dichloroethene (tDCE) GCTL exceedances were detected Trichloroethene (TCE) results were below its NADC in July 2021, with three wells above GCTLs. Freon-113 was detected in various wells in concentrations below its GCTL, with highest results near the western source zone.

The intermediate plume (20-40ft bls) extends east of G Avenue SE with isolated VCs adjacent to borrow lake. There were eight wells where TCE, cDCE and/or VC exceeded 10xNADC at baseline. July 2021 results showed decreased western and southeastern extent of VC since baseline, with two areas of 10xNADC exceedances remaining (TCE to the west and VC to the east). There were no tDCE exceedances detected in the intermediate groundwater plume and Freon-113 was detected near source zones.

The highest VOC concentrations were found in deep zone (> 40 ft bls). The deep groundwater plume shows a decreased areal extent of plume since baseline, but TCE, cDCE, and VC exceedances remain above 10x NADC. tDCE was undetected, but that may be the result of high laboratory dilution factors. Freon-113 is detected near source zones. The deep zone performance monitoring wells include three wells that are screened in the deep source zone below the air sparge wells; MW0024, MW0028 and MW0033. VOCs were undetected at MW0024, screened from 55-65 feet bls (below clayey layer), with nearby wells screened 45-50 feet bls (MW0028 and MW0033) exceeding 100xNADC for TCE. TCE flux from the deeper zone into the treatment zone is evident at well pair MW0027 (40-45 feet bls) and MW0028 (45-50 feet bls).

In conclusion, the AS system is operating as designed and effective in achieving the IM objective of reducing VOC concentrations within the HCP. A future direct push technology (DPT) groundwater sampling investigation will be conducted to assess system progress

and provide a snapshot of current site conditions. The results will be presented to KSCRT at a future meeting to discuss further actions. Large diameter auger (LDA) soil mixing with steam is also planned for the deeper zone at HS2 and will be presented to KSCRT at a future meeting.

The recommended path forward includes assessing the Year 2 performance monitoring results and optimizing operations such as pulse duration and frequency and AS zone air flow rate and pressure, and preparing the Year 2 Performance Monitoring Report (PMR) and submitting to FDEP/NASA. The same performance monitoring well network was recommended for Year 2 except for dropping MW0035 and MW0036. The IM Work Plan called for sampling frequency to change from quarterly to semi-annually in Year 2. Semi-annual sampling was recommended for the performance monitoring wells, except that annual sampling was proposed for MW0046 and MW0047.

FDEP inquired on the rationale behind dropping two monitoring wells and the altered sampling frequency for two of the monitoring wells?

Tetra Tech stated that MW0035 had cDCE and VC results above NADC prior to start of air sparging. By the third quarter of performance monitoring, all COC results were reduced to less than GCTL and remained consistent in the 4th quarter of monitoring. MW0036 had GCTL exceedances of VC only before sparge system startup, and all results have been at or below the GCTL for the last three performance monitoring events. The wells are consistently below GCTLs for a few quarters and Tetra Tech didn't believe the data from these two wells is useful at this point.

Tetra Tech pointed out the isolated VC detection at MW0037 to the east of the MW0046/MW0047 well pair. MW0046 and MW0047 are between the plume treatment area and the isolated VC plume at MW0037/MW0038 in an area that is currently below GCTLs. A groundwater flow direction reversal is sometimes observed where flow is away from the borrow pond instead of toward it. Tetra Tech believes the reduced frequency will be adequate to keep an eye on contaminant migration toward or away from the borrow pond.

Tetra Tech will emphasize in the report the reasoning for the frequency reductions in these wells and for removing MW0035 and MW0036 from performance monitoring, and provide sufficient discussion about those decisions and how they were made.

FDEP inquired if the easterly flow was attributed to the borrow pit, and if it was truly a borrow pit. NASA confirmed it was a borrow pit in the exact form of a rectangle.

FDEP inquired if NASA had previously performed grain size analysis to evaluate if AS would be effective at deeper depths at KSC? NASA observed that lithologic observations at HMFN had been the reason to sparge above the lower permeability unit, but that the Launch Complex (LC) 34 pilot test is all about testing the theory of sparging in lower permeability zones.

At present, NASA is seeking more aggressive technology (LDA with zinc) to knock out the vestiges of this source zone after the AS IM. They have a Remediation Alternatives Evaluation (RAE) completed for this site, but not a work plan for an IM yet. Post AS, NASA will reassess what HS2 looks like at the deep interval (hopefully smaller) and will try to eviscerate the remaining plume at this location in one way or the other.

The Team reached consensus to continue operation, maintenance and monitoring (OM&M) of the AS IM, which includes: maintenance and operation of the AS system; discontinuation of the AS system operation at Zone 1 comprising 17 ASWs screened from 25-27 feet bls in the western portion of the AS network; removal of monitoring wells MW0035 and MW0036 from performance sampling (based on two consecutive rounds of sampling results below GCTLs); reduction in the performance sampling schedule frequency of MW0046 and MW0047 to annually (based on the two consecutive rounds of sampling results below GCTLs), continuing this annual sampling to monitor the observed groundwater flow direction reversal away from the borrow lake toward these two wells; sampling remaining wells semi-annually in accordance with October 2017 Interim Measure Work Plan (IMWP); and the completion of one annual round of ambient air sampling. Monitoring wells and their respective groundwater monitoring schedule for Year 2 is provided on Slide 63 of the ADP **(2201-D01).** These include monitoring wells MW0002, MW0004, MW0008, MW0009, MW0011, MW0016, MW0024, MW0027, MW0028, MW0029, MW0030, MW0031, MW0032, MW0033, MW0034, MW0037, MW0038, MW0039, MW0040, MW0041, MW0042, MW0043, MW0044, MW0045, MW0046, and MW0047.

Results: Decision Items 2201-D01

APPENDIX I

IDW DOCUMENTATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
FL6800014585		412-862-7756	26

GENERATOR

5. Generator's Name and Mailing Address

NASA Kennedy Space Center - Hypergol Maint Facilty North (HMFN)
Fifth Street and Avenue G
Kennedy Space Center, Florida 32953

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

Freese Inc

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Waste Connections
1501 Omni Way
St Cloud, Florida 34773 407-891-3720

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non-RCRA/Non-DOT Regulated Material	1	RO	11	CY	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

JED-20-054
Contaminated Soil

WCI Customer: Tetra Tech, Inc
661 Anderson Drive
Pittsburgh, PA 15220
Contact: Christopher Neumann 412-862-7756

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Ryan O'Meara — Signature — Month: April — Day: 30 — Year: 2020

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month — Day — Year

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY TO GENERATOR